

MUDFA Project Western Harbour Leith Docks Edinburgh EH6 CQF Telephone 0131 561 2800 Facsimile 0131 561 2811

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28th June 2007

Mr. Graeme Barclay
tie MUDFA Utilities Construction Director

Ref: AMIS/tie/felter/KAG/Projects/274

tie Limited. Verity House, 19 Haymarket Yards, Edinburgh. EH12 5BH

Dear Graeme,

# Subject: MUDFA Alfred McAlpine Infrastructure Services (AMIS) – Contract A150 SDS Provider Design Outputs & AMIS MUDFA Designability; Ideas in Action

I refer to recent correspondence in connection with the above and in consideration of the delay, disruption and dislocation to the MUDFA works consider it imperative to review, from first principles, the Project Management model, ethos and culture currently in place to deliver MUDFA Construction Services.

Before formulating our "Ideas in Action" it is an imperative to set out, as a matter of record, the nature and extent of the delay, disruption and dislocation to the MUDFA Construction Services.

### a. Background

Thirty seven weeks following execution of the MUDFA Contract tie Limited (4<sup>th</sup> October 2006), the party responsible for the design under the MUDFA terms and conditions, have issued one IFC drawing; a design subsequently demonstrated to be inadequate, with significant concerns pertaining to project controls, accuracy and verification.

These concerns were most recently highlighted in AMIS MUDFA letter Ref; AMIS/tie/letter/KAG/Projects/239 of 12<sup>th</sup> June 2007, an item of correspondence where a response, together with the provision of further and better particulars, is still awaited from tie Limited.

AMIS MUDFA letter Ref; AMIS/tie/letter/KAG/Projects/260 of 15th June 2007 sets out the magnitude of the overall delay against the Schedule 8 requirements, i.e. the Contract baseline.

A total of 325 No. IFC drawings against the PCS Programme, as submitted in October 2006, were scheduled to be provided on 16<sup>th</sup> January 2007. (tie Limited approval of programme by default under Clause 35).

Had the tie Limited deliverables, under the approved Pre-Construction Services Programme and its discernible iterations, been achieved, AMIS MUDFA would be in possession of, at the time of writing, 1,280 No. IFC drawings complete with Bill of Materials, Conflicts Register, HAZID Log and Residual





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Risk Register, together with associated procurement specifications, installation, testing and commissioning plans and interface specifications, i.e. the full programme of MUDFA works.

The Monthly Progress Report for May 2007 sets out the magnitude of the overall delay, with a total of 296 No. IFC drawings against Revision 05 of the tie Limited and Stakeholder Constrained (formerly Imposed) Programme recorded and detailed as being behind schedule; i.e. a significant programme delay and change to work sequences impacting on the integrity of the Schedule Four Rates.

The total number of delayed IFC drawings, against Revision 05 of the Programme in the intervening period, i.e. up to and including Friday 22<sup>nd</sup> June 2007, has increased by a further 15 submissions, i.e. to an overall total of 311 No. IFC drawings.

As a result and as previously stated, Revision 05 of the Programme is no longer sustainable and as stated above, needs to be reappraised from first principles, as confirmed and agreed by tie Limited in recent discussions, meetings and reviews.

#### b. Impact of Construction Services

In the six months since submission of Revision 01 of the Programme (AMIS MUDFA letter Ref; AMIS/tie/letter/AM/Projects/041 dated 24<sup>th</sup> November 2006 refers) the Schedule requirements have been re-baselined on five separate occasions and the magnitude of the delay has essentially remained constant.

Furthermore no forecast has been provided by tie Limited in relation to utility design provisions or stability of integrated programmes.

In real terms the underlying delay is, as a minimum, six months at this juncture.

In consideration of the foregoing it is apparent that the "EVOLUTION" strategy and approach adhered to by tie Limited has resulted in the following:

- i. The current level of the design detail and definition will result in Construction Services being subject to delay, disruption and dislocation through unidentified and unquantifiable risks to the health, safety and well being of AMIS MUDFA operatives, together with unidentified and unquantifiable risks to the environment and Statutory Utility Company apparatus.
- ii. The detail and definition of the designs presently prepared by SDS Provider does not achieve the industry standard required to provide sustainable buildability and/or value engineering input to facilitate effective and efficient productivity, including the employment of new resources, the redeployment of existing resources and procurement of plant, materials and the like.
- iii. The current level of design detail and definition does not serve construction adequately by directly controlling cost and timescale dependencies.







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- iv. The availability of the SOS utility design outputs, against the tie Limited and Stakeholder Constrained Programme (Revision 05) requirements does not support structured and sequential Construction Services in a controlled, planned and systemic manner.
- v. The tie Limited and Stakeholder Imposed Programme (Revision 05) has enforced a revised modus operandi on the sequence, method of working and commercial structure of the AMIS MUDFA rates and prices, introducing unforeseen risk while reducing efficiencies and economies of scale.
- vi. The consequences of items (i) to (v) above will, if not addressed by tie Limited, result in an exponential increase in the outturn cost, as evidenced by our Anticipated Final Account submissions to date.
- vii. The consequences of items (i) to (iv) above will, if not addressed, result in an Extension of Time (EoT) for Completion being required, representing additional cost to tie Limited.
- viii. Strict adherence to the Long Stop date by the Limited will necessitate acceleration to the Stakeholder Constrained Programme (Revision 05) being instructed by the Limited, at an additional cost to the project, with, given the constraints and unquantifiable risk, no discernable guarantee of success or control.

Please note the eight conclusions have been extracted from the Executive Summary of the AMIS MUDFA "Report and Recommendation to Manage the 'Gateway' from Pre-Construction Services to Construction Services", dated 20<sup>th</sup> February 2007, submitted under cover of AMIS MUDFA letter Ref; AMIS/tie/letter/AM/Projects/101 also dated 20<sup>th</sup> February 2007 and are therefore not new.

With the exception of minor amendments, primarily revising "Revision 03" of the Programme to "Revision 05" and removing a statement relating to the establishment and testing of the Work Order system, the conclusions pertinent in February 2007 (eighteen weeks ago) apply in equal measure at the time of writing.

However the emphasis to schedule adherence and cost certainty assume even greater significance, given the erosion of 17% of the Contract period without substantial and meaningful Construction Services progress being achieved and with no discernible likelihood or evidence of a significant improvement being attainable in the near future.

The most recent issued IFC drawings by SDS Provider have been confirmed by all parties as inadequate; please refer to Graeme Barclay meetings and discussions.









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### c. AMIS MUDFA Early Warnings

Since execution of the MUDFA Contract on 4<sup>th</sup> October 2006 AMIS MUDFA have strived to assist and support the Limited in meeting the objectives and obligations of the MUDFA terms and conditions. A number of proposals and initiatives, together with early warnings have been provided. The most pertinent examples are;

- i. AMIS MUDFA letter Ref, AMIS/tie/letter/AM/Projects/007 dated 27th October 2006; early warning and identification for a "....project 'Step Change'...in order to meet the cost and timescale parameters established in the contract requirements".
- ii. Overview and Appraisal of Options and Impacts submission tabled on 5<sup>th</sup> December 2006 to Ms. Susan Clark and Mr. Alasdair Slessor of the Limited. See Options 2, 3 and 4 as referred to in item (iii) below.
- iii. AMIS MUDFA letter Ref; AMIS/tie/letter/AM/Projects/055 dated 12<sup>th</sup> December 2006. Further request for a "Step-Change", together with outline proposals to "....secure valued-added design and constructability input, SUC's approval and design outputs that hold sufficient technical definition and detail to serve construction planning and construction services".
- iv. AMIS MUDFA letter Ref; AMIS/tie/letter/AM/Projects/101 dated 20th February 2007.
- v. AMIS MUDFA letter Ref; AMIS/tje/letter/AM/Projects/176 dated 12<sup>th</sup> April 2007.

Copies of all relevant elements of the documentation attached for ease of reference. However please note this list is not intended to be exhaustive, it has been provided for indicative purposes only.

These submissions proactively sought to engage tie Limited with solutions focussed strategies and mitigation measures targeted to alleviate the delays associated with the SDS Provider design outputs, whilst ensuring AMIS MUDFA input to buildability, schedule adherence and certainty of cost outturn.

### d. Ideas in Action - "REVOLUTION" and Action Plan for Success

None of the AMIS MUDFA proposals were considered in detail or sanctioned by tie Limited and in recognition of the ongoing tack of progress in this critical area AMIS MUDFA wish to resubmit their "Ideas in Action" proposals, redefined to address ongoing requirements and recent developments, for the consideration of tie Limited, once again.

As a result of the foregoing AMIS MUDFA has no confidence, at this time, that the SDS Provider will be capable of supporting a comprehensive design service that provides a platform for the cost effective, productive, sustainable and effective delivery of Construction Services.







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In order to safeguard schedule adherence and provide cost certainty to tie Limited and its Stakeholders, the project requires a fundamental step change from the current Project Management approach, i.e. "REVOLUTION" as opposed to "EVOLUTION".

Having demonstrated, beyond all reasonable doubt, the root cause of the current delays, and the proactive approach adopted by AMIS MUDFA since executing the Contract Agreement AMIS MUDFA wish to revisit the recommendations set out in their "Report and Recommendation to Manage the 'Gateway' from Pre-Construction Services to Construction Services".

These proposals, as evidenced in Section (b) above remain relevant and pertinent at the time of writing and need to be re-considered in a diligent and solutions focussed manner by tie Limited. The revised and updated AMIS MUDFA proposals are therefore as follows:-

Key to success is a reinvigorated proactive input to all aspects of the design process, delivered through an integrated team comprising both tie Limited, AMIS MUDFA and Statutory Utility Company staff. If appropriate this would involve the introduction of new members to the team with specific skill sets and a "can do" attitude to delivery.

AMIS MUDFA have already approached Jacobs Engineering and CORE utilities in this regard.

The current magnitude of 'man-marking' would be reviewed and where feasible and/or practical eliminated, in order to reduce and mitigate cost.

- Proactive management techniques would be adopted, measuring outputs on a daily basis against the MUDFA schedule with extensive AMIS MUDFA involvement in the 'front-end' of the process, i.e. in SDS Provider. AMIS MUDFA should contribute extensively on the design detail and definition before submission to the SUC's and will impact in the Value Engineering arena.
- Reinvigoration of the Anticipated Final Account protocol; this Contract requirement has been relaxed following receipt of tie Limited letter Ref; DEL.MUDFA.166.MH.SC dated 8<sup>th</sup> March 2007.

However this relaxation presents a significant risk to tie Limited and an integrated approach will provide a greater degree of cost certainty to tie Limited.

- Integration with INFRACO, at appropriate intervention levels and 'pressure point release'.
- A revised contractual framework should be introduced that will facilitate meaningful incentivisation
  and a proactive approach, driving solutions focussed behaviour by way of improved integration of
  roles and responsibilities, with direct accountability for success and timescale adherence.
- tie Limited to review, agree and implement, as appropriate, the recommendations of the Value Engineering Workshop held on 23rd January 2007. No feedback has been received to date.







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tie Limited, supported by AMIS MUDFA, to execute a Timescale Risk Analysis (TRA) on the
overall Tram Programme and Risk Management approach to verify Schedule adherence and
most likely out turn based on a P80 assessment.

All costs incurred by AMIS MUDFA will be fully reimbursable, plus Management Fee (nominally 15%); this uplift would be the Contract Fee, plus provision for the loss of opportunity factor. A Schedule of Cost Components would set out definitions of actual cost and those elements addressed by the Management Fee. All other aspects of the MUDFA Contract will remain unchanged, following review and agreement.

ALTERNATIVELY tie Limited introduce and present a series of 'step-change' initiatives to AMIS MUDFA to overcome the late utility designs issue as opposed to considering those proposed and published by AMIS MUDFA.

#### e. Conclusion and Way Forward

All subsequent Pregramme iterations must be achievable, reflecting the current status of the deliverables and be credible in the eyes of the Project team and stakeholders.

Should the Limited allow future iterations of the Programme to be discredited to such an extent as iterations 01 to 05 inclusive the AMIS MUDFA project team will find it increasingly difficult to secure support and endorsement from key stakeholders for our recovery and mitigation plans.

In consideration of the foregoing AMIS MUDFA wish to place on record their commitment to the successful delivery of the MUDFA works, in accordance with the project objectives and in recognition of the need for "Value For Money" to be inherent and demonstrable, strongly endorse these proposals and recommendations.

The active consideration of tie Limited would therefore be greatly appreciated in order to prevent further delays and ongoing unmanageable cost escalation. AMIS MUDFA looks forward to hearing your initiatives and proposals in the near future.

Yours sincerely,

For and on behalf of Alfred McAlpine Infrastructure Services Ltd



Andrew Malkin MUDFA AMIS Project Director







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Copies:tie Project Team Susan Clark John Casserly

MUDFA Project Team Keith Gourlay Alan Robertson / Steve Hudson









# MUDFA – Edinburgh Tram

# Overview and Appraisal of Options and Impacts (Excluding Risk & Contingency Provisions)

| MUDFA SUMMARY        | COST                 |            | TIME           |                 | RESOURCE |     |
|----------------------|----------------------|------------|----------------|-----------------|----------|-----|
|                      | PCS                  | cs         | PCS            | CS              | PCS      | CS  |
|                      | + £100k              | + £16.3M   | 0              | ÷ 6<br>Months   | +3       | 0 * |
| Option 2 – Ranking 3 | + £30k               | + £7.5M    | 0              | ÷ 3<br>Months   | +1       | 8 * |
| Option 3 = Ranking 2 | + £250k              | + £6.0M    | 0              | 0 + EoT         | ÷ 6      | 3 * |
| Option 4 = Ranking 1 | + £300k &<br>+ £400k | + £4.0M    | + 6<br>Months  | 0 + EoT         | ÷ 8      | 0 * |
| Option 3 = Canking S | + £400k &<br>+ £400k | ÷ £4.0M    | + 6<br>Months  | 0 + EoT         | +9       | 0*  |
| Option 6 – Ranking 6 | + £2.0M              | 0 to £5.0M | + 12<br>Months | 3 – 6<br>Months | 20       | 0 * |

<sup>\*</sup> Denotes Stakeholder Imposed Programme (Revision 01)

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# MUDFA - Edinburgh Tram

# Potential Options for Joint Review and Consideration

1. MUDFA Contract – Remains "As-Is" (Technical Definition, Cost and Time Performance is a Concern)

4.

2. tie Project Management – SDS Design & AMIS Build Interface Management (S. Clark & A. Slessor Discussions). SDS Acceptance

3

3. AMIS Construction Team Integration into SDS Utility Design Team AMIS to Project Engineer SUC Requirements. PCS Implications

2

4. AMIS Process Management of SDS Utility Design (Not Responsible as Design Authority). SDS Acceptance

1

5. tie Novate Utility Design to AMIS (Design Authority & Design Legacy a Concern). SDS Agreement and AMIS Corporate Acceptance

5

6. 3<sup>rd</sup> Party Outsourcing of Utility Design (Learning Curve & Timescale a Concern)

6



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Regus House 10 Lochside Place Edinburgh Business Park South Gyle Edinburgh EH12 9RG



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27th October 2006

Mr. Alasdair Slessor
Tie MUDFA Utilities Project Manager
Tie Limited.
Verity House,
19 Haymarket Yards,
Edinburgh.
EH12 5BH

Ref : AMIS/tie/letter/AM/Projects/007

Dear Alasdair,

Subject: MUDFA Alfred McAlpine Infrastructure Services (AMIS) — Contract A150
SDS Utility Design Status: MUDFA Programme / Project Scope Workshop

Frefer to the MUDFA Programme / Project Scope Workshop held on Tuesday 24<sup>th</sup> October 2006 involving Tie, SDS and AMIS representatives and write on this occasion to register our concerns in relation to the current status of the utility preliminary design and development.

During the course of the meeting it was openly discussed and acknowledged that the current utility design status is not sufficiently advanced to the point that constitutes Approved for Design / Approved for Construction status. This situation has significant impact on our ability to carry out comprehensive and value-added constructability and buildability analysis as per the requirements of our Pre-Construction Services contract. In accordance with our contract administration requirements we are obligated to highlight the current situation to the Tie Utility Project Management team and wish to reiterate our total commitment to seeking resolution in support of the overall project.

The current preliminary design in our assessment requires further design detail, specification and definition in relation to utility specific technical requirements. However, the main point AMIS wish to highlight to Tie Limited is the need for the utility designers to fully consider the actual diversion designs and schemes in order to serve construction and significantly control costs and timescale dependencies.

As you are aware AMIS has already carried out a number of initial buildability reviews and it is our view that insufficient consideration has been given at this time to design rationalisation and optimisation of all diversion schemes to ensure that the City of Edinburgh is subjected to minimum disruption.

I fully recognise and accept that AMIS has an active and major contribution to make during the constructability and buildability phase and given the current preliminary status of the design believe that a project "Step Change" is required in order to meet the cost and timescale parameters established within the contract requirements. I would welcome an opportunity to participate in developing a construction-led design solution in conjunction with SDS and believe AMIS could introduce a number of forward looking initiatives.







Ref : AMIS/fie/letter/AM/Projects/007, Page 2

I will assess the current implications over the course of the next few days and take this opportunity to request this particular subject matter is discussed openly at the Tie / AMIS Commercial meeting scheduled for Monday 30<sup>th</sup> October 2006 at 14.00 Hrs.

Yours sincerely,

For and on behalf of Alfred McAlpine Infrastructure Services Ltd



Andrew Malkin MUDFA AMIS Project Director

Copies:-

Tie Project Team James Bruce MUDFA Project Team

Keith Gourlay

AMIS Management Alan Robertson Steve Hudson

**Orawings Attached** 

| ULE90130-01 | UTL | 00453 | Scottish Water - Foul Drainage | <b>MUDFA Comments</b> |
|-------------|-----|-------|--------------------------------|-----------------------|
| ULE90130-01 | UCL | 00062 | Scottish Water - Clean         | <b>MUDFA Comments</b> |
| ULE90130-01 | UTH | 00062 | THUS                           | MUDFA Comments        |
| ULE90130-01 | UTL | 00154 | Scotland Gas Networks          | <b>MUDFA Comments</b> |









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Ref: AMIS/tie/letter/AM/Projects/101

20th February 2007

F.A.O. Ms. Susan Clark

Mr. Alasdair Slessor tie MUDFA Utilities Project Manager tie Limited. Verity House, 19 Haymarket Yards, Edinburgh. EH12 5BH

Dear Alasdair,

Subject: MUDFA Alfred McAlpine Infrastructure Services (AMIS) - Contract A150

MUDFA Report & Recommendation to Manage the "Gateway" from Pre-Construction
Services to Construction Services

Please find attached two copies of the above referenced report for tie Limited review and consideration.

The submission seeks to summarise the current status of the Pre-Construction Services and provide a platform to manage the gateway into Construction Services. The objective was to review and record the first six months of MUDFA and seek to apply the lessons learned going forward to ensure the successful delivery of Construction Services.

Overall AMIS has genuine concerns relating to the viability of Construction Services and wish to reinvigorate the delivery model and framework. To achieve this objective AMIS MUDFA believes it is imperative, as an initial action, that an "Extraordinary MUDFA Board Meeting" (Refer to Section 5.3) is convened to discuss and resolve the key issues.

This submission of correspondence is offered in good faith and in order to address and mitigate an unnecessary and counter-productive contractual situation going forward, while seeking to safeguard the successful delivery of the Edinburgh Tram project.

Yours sincerely

For and on behalf of Alfred McAlpine Infrastructure Services Ltd

Andrew Malkin MUDFA AMIS Project Director





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Ref: AMIS/tie/letter/AM/Projects/101 20th February, 2007

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### Copies:-

Tie Project Team Martin Hutchinson Matthew Crosse MUDFA Project Team Keith Gourlay AMIS Corporate Alan Robertson Steve Hudson

Attached /... MUDFA Report and Recommendation to Manage the Transition Gateway from Pre-Construction Services to Construction Services









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### Infrastructure Services

Ref: AMIS/tie/fetter/AM/Projects/176

18ih April 2007

Mr. Graeme Barclay tie MUDFA Construction Director tie Limited. Verity House, 19 Haymarket Yards. Edinburgh. EH12 58H

Dear Graeme,

Subject: MUDFA Alfred McAlpine Infrastructure Services (AMIS) - Contract A150 MUDFA fie Limited and Stakeholder Imposed Programme (Revision 05), Clause 2.7

Further to your latter Reference DEL MUDFA,352 dated 13th April 2007 please find attached for your review and approval six (6 No.) copies of the tie Limited and Stakeholder Imposed Programme at Revision 5 which incorporates all tie Limited comments.

Yours sincerely,

For and on behalf of Alfred McAlpine Infrastructure Services Ltd



MUDFA AMIS/Project Director

Copies:

Tie Project Team Susan Clark Tom Hickman John McAlgen Allan Hill John Law Jim Johnson Martin Huterimson Matthew Crosse

MUDFA Project Team

Keith Gourlay Graeme Strachan Gil Clelland Gerry Bannon Slave Clemenson Steve Cresbie Mark Riley Chris Hayball Roddy Aves Bill Jarvie Mandy Nelson lan Shanks

Attached /.... tie Limited and Stakeholder Imposed Programme (Revision 05) & Notes





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Ref: AMIS/lie/letter/AM/Projects/176 18th April 2007

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## Tie Limited and Stakeholder Imposed Programme (Revision 05)

#### Programme Notes and Assumptions

- All current SDS preliminary drawings show single line utilities, e.g. no allowances have been atade for multiple ducts, etc and limited technical definition is available to support detailed technical and planning development.
- SDS detailed design development may produce additional diversions over and above the SDS Proliminary and C4 drawings and may therefore increase the current scope of work.
- Producement times are indicative based on current preliminary design drawings and it is not possible for AMIS to determine full technical definition to support the princhasing and technical requisitioning of lone lead items and therefore AMIS procurement will be at risk.
- ANIS has assumed tip Limited / SUC agreements exist and that SUC's are able to provide the serrect levels of resources and materials as appropriate to support AMIS construction services
- AMIS assumes to Limited secure SUC C4 approvals of SDS detaited designs in accordance with the SDS design programme Version 12 as approved by the Limited
- Programma is based upon SDS utility design dates as per SDS design schedule Version 12 and the Limited correspondence DELMUDFA.167.RD.SC dated 8th March 2007 (Note Actual SDS physical % progress and forecast completion unknown at this stage)
- 7. Mo allowances have been made for any other Non-MUDFA works or services being undertaken by SUC's or any other parties such that AMIS progress is constrained.
- Construction durations are based on AMIS experience and estimates at this stage
- No consideration has been given to the availability of any specialist plant, equipment or subcontractors at this time due to the lack of technical definition and detail.
- 10. Business and rotall centre critical power supplies have not been considered at this stage of the planning development phase.
- 11. SUC's regulatory requirement to capture betterment has not been included in the development of the construction programme. 12.  $3^{19}$  Party, un-conventional or any special land issues or considerations have not been
- considered in the planning development to date i.e. way leaves, ambargons.
- 13. Service and customer supply maintenance or replacement has not been allowed for in the planning development (i.e. if a main is to be replaced by MUDFA and regulations require branches from that section of main i.e. load pipe) since this is not defined on the SOS proliminary design drawings and has therefore not been included in the construction scope of work
- 14. Work site activities and durations are based upon five (5 No.) working days comprising operations from 07.00 hrs to 19.00 hrs Monday to Friday and 07.00 hrs to 13.00 hrs on Saturdays,
- 15. St. Androw Square is closed off as per tie Limited request to CEC as part of the capital works programme and assumes two way traffic diverted to Morth/Central/South St. David's Street.
- 15. Programme has been revised to incorporate City of Edinburgh Council, Lothian Buses, Transport Edinburgh Limited and the Limited amendments as requested at the planning moetings held on 30<sup>th</sup> March 2007.
- 17. Programme assumes no allowances made for interfacing or dependencies with INFRACO.
- No allowance in time has been made for cable pulling, installation and testing (By Others).







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