

**Value Engineering**  
**Schedule Part 4 – Section 5**

**TIE LIMITED**

**POSITION PAPER**

relating to

the agreement between **tie Limited**

and

Bilfinger Berger (UK) Limited / Siemens plc / Construcciones y Auxiliar de Ferrocarriles consortium

in connection with the works authorised by the

*Edinburgh Tram (Line One) Act 2006 and the Edinburgh Tram (Line Two) Act 2006*

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## 1. INTRODUCTION

- 1.1. Schedule Part 4 refers to two sections dealing with value engineering.
- 1.2. Section 5 of Schedule Part 4 is said to deal with '*Value Engineering (VE) that have been taken into firm price*' and
- 1.3. Section 6 of Schedule Part 4 is said to deal with '*Further Value Engineering*
- 1.4. This position paper only deals with Section 5

## 2. TIE'S POSITION ON THE DISPUTE

- 2.1 Section 5 of Schedule Part 4 is said to deal with 'Value Engineering (VE) that have been taken into firm price'.
- 2.2 Paragraph 5.1 of Section Part 5 states;  
  
*'The Parties have agreed Value Engineering opportunities / savings as noted in Appendix C'*
- 2.3 Appendix C of Schedule Part 4 lists 25 items as identified VE savings. The savings are said at paragraph 1 of Appendix C to be  
  
*'...agreed identified VE opportunities / savings which are fixed and firm reductions, save for the Key Qualifications'*.
- 2.4 Tie maintains that they are entitled to the saving stated in Appendix C where the Key Qualifications are met.
- 2.5 The Key Qualifications are listed and affect the following VE items:

Type	Key Qualifications	VE Items	£
A	Subject to tie issuing an instruction to implement the VE opportunity. tie carries specification/acceptance risk and cost of additional pump	1, 24	393,526.00
B	Subject to tie issuing an instruction to implement the VE opportunity.	2, 3, 4, 5, 6, 8,	477,080.00
C	Design to cost but compliant with current technical/design info	7	2,200,000.00

D	Level of saving is subject to adjustment of quantity of this item based on the final design	9, 10, 11,18	1,000,000.00
E	Subject to approval of NEL / CEC, , (Third Party) and subject to designing to cost	12,	1,470,000.00
F	Subject to approval of NEL / CEC, Network Rail, (Third Party)	13, 15,19, 20 & 21	2,160,000.00
G	Subject to being able to design to cost	14, 16, 17,	1,250,000.00
H	Subject to BBS / tie agreeing savings in resources and facilities items from BBS and tie costs.	22	500,000.00
I	Subject to property owners' claims	23	50,000.00
J	subject to tie issuing an instruction to implement the related Unidentified Provisional Sum at Item 6 in Table 2	25	464,400.00
	<b>Total</b>		<b>£9,965,006.00</b>

### Categories of 'Key Qualifications' and their implication on the contract sum

**2.6 Type A - Subject to tie issuing an instruction to implement the VE opportunity. tie carries specification/acceptance risk and cost of additional pump**

2.6.1 Under this type of VE, subject to tie issuing their instruction / change order the saving value is agreed. There should be no dispute over the value of £393,526.00

**2.7 Type B - Subject to tie issuing an instruction to implement the VE opportunity**

2.7.1 Under this type of VE, subject to tie issuing their instruction the saving value is agreed. There should be no dispute over the value of £477,080.00

**2.8 Type C - Design to cost but compliant with current technical/design info**

2.8.1 This category relates to VE number 7 only. The Appendix states that the changes are to be driven by the proximity to BAA runway and EARL decision (assumption made that EARL is Edinburgh Airport Ltd).

- 2.8.2 The VE lists certain areas available to the Infraco to re-design to obtain the stated saving of £2,200,000.
  - 2.8.3 Tie considers that the obligation is upon the Infraco to fully identify and achieve the stated saving value. However, prior to implementing the VE, the Infraco, pursuant to paragraph 5.7 is required to provide a detailed Estimate to tie setting out what the net savings are, including the design costs.
  - 2.8.4 On receipt of the estimate and within 10 business days, tie may accept or reject the re-design / Estimate and issue a instruction / tie change order.
  - 2.8.5 The VE does not to proceed until tie issues the instruction
- 2.9 **Type D - Level of saving is subject to adjustment of quantity of this item based on the final design**
- 2.9.1 This VE deals with such items as, the quantity of material recovery, kerbs, drainage, which are instructed out of the contract by tie.
  - 2.9.2 A tie change must be issued before the design / works commence (clause 80) however the saving can only be fully determined by the final account re-measurement.
- 2.10 **Type E - Subject to approval of NEL / CEC/ Network Rail and subject to designing to cost**
- 2.10.1 This VE relates to third party approval and to designing to cost.
  - 2.10.2 The VE savings is for design changes to Edinburgh Park Viaduct. The VE requires the Infraco to re-design to obtain the stated saving of £1,470,000.
  - 2.10.3 Tie considers the obligation is upon the Infraco to fully identify and achieve the stated saving. However, prior to implementing the VE, the Infraco, pursuant to paragraph 5.7 is to provide a detailed Estimate to tie setting out what the net savings are, including the design costs, for tie to obtain third party consent
  - 2.10.4 Tie must obtain the approval of the third parties before a tie change order is issued.
- 2.11 **Type F - Subject to approval of NEL / CEC, Network Rail, (Third Party)**
- 2.11.1 The values attached to the VE are fixed and agreed. To implement the savings tie simply has to obtain third party approval of the design changes.

- 2.11.2 On obtaining third party consent tie issues an instruction for the works to proceed.
- 2.11.3 There should be no dispute over the total saving of £2,160,000.00

2.12 **Type G - Subject to being able to design to cost**

- 2.12.1 Appendix C lists three items which fall into this category. Valued at a potential saving of £1,250,000: item 14, being the A8 underpass, item 16 being the Water of Leith initiatives and item 17 being the eight maintenance walkways.
- 2.12.2 The obligation is upon the Infraco to fully identify and achieve the stated savings. Prior to implementing the VE, the Infraco, pursuant to paragraph 5.7 is to provide a detailed Estimate to tie setting out what the net savings are, including the design costs.
- 2.12.3 Thereafter, tie may accept or reject the re-design / Estimate.
- 2.12.4 The VE(s) do not to proceed until tie issues the instruction

2.13 **Type H - *Subject to BBS / tie agreeing savings in resources and facilities items from BBS and tie costs.***

- 2.13.1 This VE is subject to agreement between BBS and tie

2.14 **Type I - *Subject to property owners' claims***

- 2.14.1 This VE is subject to claims made by owners during the course of the project.
- 2.14.2 No final value can be determined until completion of the works

2.15 **Type J - *Subject to tie issuing an instruction to implement the related Unidentified Provisional Sum at Item 6 in Table 2***

- 2.15.1 An agreed saving of £464,400 on the proviso that tie issue instructions on the Undefined Provisional sum at item 6 table 2 – '*Urban Traffic Controls associated with the wider area impacts*'

**2.16 Programme / Timing of tie Instructions**

**2.16.1** Paragraph 5.3 states that where a VE requires an instruction by tie, tie shall issue such an instruction sufficiently ahead of the programme to allow the VE opportunity to be realised.

**2.16.2** Paragraph 5.7 states where the VE is an opportunity subject to 'design to cost' the Infraco shall deliver to tie an estimate setting out the net cost / saving in sufficient time not to affect the programme. Tie has 10 days from the issue of the estimate to confirm a tie instruction.

**3. REQUIRED OBJECTIVES OF REFERRAL OF THE DISPUTE TO THE INTERNAL RESOLUTION PROCEDURE**

3.1 To agree that the savings in the Appendix C are secured

**4. TIE'S FURTHER COMMENTS ON AND UNDERSTANDING OF INFRACO'S POSITION ON THE DISPUTE**

4.1 The Infraco are not prepared to progress VE where in their opinion tie issued a late tie instruction / change order implementing a VE. Tie denies that the change orders were issued late. Tie considers that the instructions were issued in sufficient time relative to the progress of the design and site works actually being achieved.

4.2 The Infraco rely upon paragraphs 5.3 and 5.3.3 of Schedule Part 4 which state

*'Infraco shall implement a Value Engineering opportunity provided that...*

*5.3.3 any Consents required for the implementation of the Value Engineering opportunity are obtained and designs Issued for Construction by the date set out in the Programme*

4.3 Notwithstanding the timing of the instruction, the Infraco refuse to incorporate the re-design into their works even although the works have not been started

**5. LIST OF SUPPORTING DOCUMENTATION**

5.1 Schedule Part 4 – Section 5

5.2 Schedule Part 4 – Appendix C (pages 44-48)

exceed £5,000,000 but, for the avoidance of doubt, such percentage shall only be applied to the amount in excess of £5,000,000.

## **5.0 VALUE ENGINEERING (VE) THAT HAS BEEN TAKEN INTO FIRM PRICE**

- 5.1 The Parties have agreed Value Engineering opportunities / savings as noted in Appendix C.
- 5.2.1 Subject to the provisions applying to Value Engineering opportunities which are Design to Cost these VE opportunities / savings are not simply targets but are fixed and firm reductions which are reflected in the Contract Price as at the date of this Agreement.
- 5.3 Infraco shall implement a Value Engineering opportunity provided that:
- 5.3.1 where the implementation of the Value Engineering opportunity requires instruction by **tie**, **tie** have issued such instruction (which shall be a **tie** Change) sufficiently ahead of the Programme to allow the Value Engineering opportunity to be realised;
  - 5.3.2 the Value Engineering opportunity is technically feasible;
  - 5.3.3 any Consents required for the implementation of the Value Engineering opportunity are obtained and designs Issued for Construction by the date set out in the Programme; and
  - 5.3.4 any other Key Qualification applying to the Value Engineering opportunity have been achieved.
- 5.4 NOT USED.
- 5.5 To the extent that a Value Engineering opportunity is implemented:
- 5.5.1 the Employer's Requirements and Infraco Proposals shall be amended to take into account the changes to the Infraco Works as a result of such implementation;
- 5.6 To the extent that a Value Engineering opportunity is not implemented:
- 5.6.1 Infraco shall carry out the Infraco Works without the amendment to the Employer's Requirements and Infraco Proposals which would have been made had the Value Engineering opportunity been implemented; and
  - 5.6.2 Infraco and **tie** shall agree amendments to the Schedule Part 5 (*Milestone Payments*) to increase the Contract Price by the saving applying to the Value Engineering opportunity set out in Appendix C and Infraco shall be entitled to include in its next Application for Payment and **tie** shall pay to Infraco the design costs incurred by Infraco in considering the Value Engineering opportunity up to a maximum amount of £25,000 per Value Engineering opportunity.
- 5.7 Where a Key Condition to achieving a Value Engineering opportunity is "Design to Cost":
- 5.7.1 before implementing the Value Engineering opportunity and sufficiently ahead of the Programme so as not to prejudice the delivery of the Value Engineering opportunity Infraco shall deliver to **tie** an Estimate setting out the net cost or saving of implementing the Value Engineering opportunity (including design costs); and

- 5.7.2 **tie** shall confirm within 10 Business Days of receipt of the Estimate if **tie** wishes Infraco to proceed with the Value Engineering opportunity.
- 5.7.3 If **tie** confirms that it wishes Infraco to proceed with the Value Engineering opportunity,
- (a) the Employer's Requirements and Infraco Proposals shall be amended to take into account the changes to the Infraco Works as a result of such implementation; and
  - (b) Infraco and **tie** shall agree amendments to the Schedule Part 5 (Milestone Schedule) to amend the Contract Price by the difference (if any) between the saving applying to the Value Engineering opportunity set out in Appendix C and the actual saving set out in the Estimate provided to **tie** in accordance with paragraph 5.7.1 and Infraco shall be entitled to claim in its next Application for Payment and **tie** shall pay to Infraco the design costs incurred by Infraco in considering the Value Engineering opportunity up to a maximum amount of £25,000 per Value Engineering opportunity.
- 5.7.4 If **tie** confirms that it does not wish Infraco to proceed with the Value Engineering opportunity paragraph 5.6 shall apply. **tie** shall be deemed not to wish Infraco to proceed with a Value Engineering opportunity which is design to cost if it fails to respond to an Estimate in accordance with paragraph 5.7.2;
- 5.7.5 Infraco shall use reasonable endeavours to achieve the savings for each Value Engineering opportunity.

## **6.0 FURTHER VALUE ENGINEERING (VE)**

- 6.1 Further Value Engineering opportunities / savings as noted in Appendix D
- 6.2 This further VE represents that which either one or both Parties is unable to commit to at this stage and will still be considered as a potential target. There are two sub-categories, those with an estimated saving carried to the summary and those as an unspecified item.
- 6.3 These will be adjusted by applying the provisions of Clause 80 (*tie Changes*). For the avoidance of doubt, no VE that has already be considered by the Parties or that may subsequently be proposed by **tie** will be considered as a shared saving under Clause 81.3 (*Infraco Changes*).

## **7.0 UTILITIES DIVERSIONS TO BE CARRIED OUT BY INFRACO**

- 7.1 Although **tie** has let the MUDFA Contract (Multiple Utilities Diversion Framework Arrangement) to carry out the diversion of utility apparatus in the path of the proposed tram route prior to Infraco Works, it will be necessary for some of these works to be delivered by Infraco for the reasons such as:
- they may be unrecorded and not discovered until the Infraco Works are commenced
  - they may be discovered during the MUDFA Works but left to avoid a programme overlap or other technical reason
  - they may be intrinsically linked to the Infraco Works

## APPENDIX C

### IDENTIFIED VALUE ENGINEERING [VE]

1.0 The following table summarises the agreed identified VE opportunities / savings which are fixed and firm reductions, save for the Key Qualifications noted:

Item	Description of Identified VE Saving	£	Notes	Key Qualifications
1	Delete depot pumping station / storm tanks by utilizing existing gravity system	-£193,526	<b>tie</b> may need to add in cost of a small pump	Subject to <b>tie</b> issuing an instruction to implement the VE opportunity. <b>tie</b> carries specification/acceptance risk and cost of additional pump
2	Build part of Depot now with provision to expand in the future / reduce size of car park facilities	-£230,000	Initial supply of 100 car parking places agreed	Subject to <b>tie</b> issuing an instruction to implement the VE opportunity.
3	Delete split vehicle accommodation system at Depot - requirement dependant on tram vehicle selection	-£27,500	Accommodation bodies are in Tram Suppliers offer	Subject to <b>tie</b> issuing an instruction to implement the VE opportunity.
4	Rationalise scope requirement Track Maintenance Equipment at Depot and consider renting	-£27,500		Subject to <b>tie</b> issuing an instruction to implement the VE opportunity.
5	Deletion of one pavement (inner) to Depot	-£36,000	Shown on latest site plan drawings	Subject to <b>tie</b> issuing an instruction to implement the VE opportunity.
6	Delete requirement for concrete apron to security fence at Depot	-£6,080		Subject to <b>tie</b> issuing an instruction to implement the VE opportunity.
<b>Carried forward</b>		<b>-£520,606</b>		

Item	Description of Identified VE Saving	£	Notes	Key Qualifications
	<b>Brought forward</b>	-£520,606		
7	<p>Consolidated VE items including those which result from changes to initial design driven by proximity to BAA runway and EARL decision as follows:</p> <ul style="list-style-type: none"> <li>• changes to initial Depot design driven by proximity to BAA runway (reduced bulk excavation)</li> <li>• reductions in structural loadings (gantry crane reduced in capacity and size impacting on building frame and envelope)</li> <li>• reduction in staff accommodation provision (reduced operational workforce reducing messing facilities, changing rooms, locker space, etc.)</li> <li>• reduction in fit out specification</li> <li>• reduction in domestic utility capacity (reduced building volume and accommodation provision)</li> </ul>	-£2,200,000	Includes reductions in structural loadings (gantry crane reduced in capacity and size impacting on building frame and envelope), reductions in staff accommodation provision (reduced operational workforce reducing messing facilities, changing rooms, locker).	Design to cost but compliant with current technical/design info
8	Delete standby generator and substitute with hardstanding and power connection for portable generator	-£150,000		Subject to tie issuing an instruction to implement the VE opportunity.
9	Material recovery and reprocessing (Infracore); 2 options - reconstituted planings & Type 1R	-£500,000		Level of saving is subject to adjustment of quantity of this item based on the final design.
	<b>Carried forward</b>	-£3,370,606		

Item	Description of Identified VE Saving		Notes	Key Qualifications
	<b>Brought forward</b>	-£3,370,606		
10	Reduce kerb and associated re-instatement of pavement	-£100,000		Level of saving is subject to adjustment of quantity of this item based on the final design.
11	Reduce drainage run from guideway	-£100,000		Level of saving is subject to adjustment of quantity of this item based on the final design.
12	Edinburgh Park Viaduct various savings including use of cross heads to eliminate temp works, steel or concrete beams	-£1,470,000	This assumes continuation with 7 span structure	Subject to approval of NEL / CEC and subject to designing to cost
13	Carricknowe Bridge parapet – downgrade from P6 / P5 to N2 (reduce cost of parapet plus knock on effect on deck design / cost)	-£85,000		Subject to approval of design by Network Rail
	<b>Carried forward</b>	-£5,125,606		

Item	Description of Identified VE Saving	£	Notes	Key Qualifications
	<b>Brought forward</b>	-£5,125,606		
14	A8 Underpass – various initiatives	-£850,000	Changing to a contiguous piled wall/leaner designs	Subject to being able to design to cost
15	Roseburn Street Viaduct – various initiatives	-£1,375,000		Subject to approval of stakeholders – Network Rail and SRU and
16	Water of Leith initiatives	-£150,000		Subject to being Designed to Cost
17	Eight maintenance walkway structures – delete or reduce	-£250,000		Subject to being Designed to Cost
18	Class 7 material conversion	-£300,000		Level of saving is subject to adjustment of quantity of fill required by the final design.
19	Optimize the work site lengths wherever practical to ensure efficient construction outputs	-£300,000		Subject to programme development with CEC
20	Accept more disruption over shorter period to maximize efficiency of construction operations	-£100,000		Subject to programme development with CEC
21	Option to lease UPS provision from supplier rather than purchase	-£300,000		Subject to agreement of Operator
	<b>Carried forward</b>	-£8,750,606		

Item	Description of Identified VE Saving	£	Notes	Key Qualifications
	<b>Brought forward</b>	-£8,750,606		
22	PM integration including shared resources and co-location	-£500,000		Subject to BBS / tie agreeing savings in resources and facilities items from BBS and tie costs.
23	Noise attenuation (outside of Roseburn Corridor) 3,650m of fencing	-£50,000		Subject to property owners' claims.
24	Reduce ballasted track thickness from 300mm to 200mm	-£200,000		
25	Urban Traffic Controls (UTC) associated with wider area impacts	-464,400		subject to tie issuing an instruction to implement the related Unidentified Provisional Sum at Item 6 in Table 2
	<b>Total</b>	<b>-£9,965,006</b>		



## APPENDIX D

### FURTHER VALUE ENGINEERING [VE]

1.0 The following table summarises provisional further VE opportunities / savings:

Item	Description of Identified VE Saving		Key Qualifications
1	Further project management integration over 3 years	-£500,000	Joint target
2	SDS design scope economy, variation and reduction	-£500,000	Joint target
3	Tramstops – standard finishes to circa 20% - 30% of stops	-£500,000	Joint target
4	Picardy Place level flexing – MUDFA savings	-£500,000	tie led initiative
5	Picardy Place level flexing – construction savings	-£500,000	Joint initiative
6	Value engineer finishes on Edinburgh Park Viaduct and other structures	-£170,000	Subject to approval of NEL / CEC
<b>Total</b>		<b>-£2,670,000</b>	

