

Item	Description of Provision Sum	trigger date	duration	£
1	Pumped surface water outfall at A8 underpass (by depot)	01-Jun-08		£100,000
2	Scottish Power connections to the Depot and Ingliston Park & Ride	not applicable		£750,000
3	Relocation of Ancient Monuments – this relates to those monuments noted on the route [SDS drawings ULE 90130-01-HRL 0003B, 6B, 7B, 10B, 12B, 13B, 14B, 15B & 24B refer] – it does not include cleaning and/or restoration	20 Business Day after BBS raise any queries in respect of issued information		£53,700
4	Additional cost of Network Rail compliant ballast	20 Business Day after BBS provide spec.		£300,000
5	Extra over for revised alignment to Picardy Place, York Place and London Road junctions (see also next item)	01-Jan-08		£3,340,324
6	Extra over for major utility diversions Picardy Place, York Place and London Road junctions	01-Jan-08		£3,000,000
7	Extra over for shell grip at junctions	01-Aug-08		£319,343
8	Allowance for Scottish Power connections to new street lights and new traffic signals	not applicable		£115,287
9	Allowance for demolition of existing Leith Walk substation (if required) [SDS drawings ULE 90130-01-SUB- 00023 rev 2, 00046 rev 1, 00047 rev 1 and 00051 rev 1 refer]	20 Business Day after BBS raise any queries in respect of issued information		£55,662
10	Urban Traffic Controls [UTC] associated with the delivery of the alignment	01-Aug-08		£2,500,000
11	Scottish Power connections to Phase 1a substations (8nr x £50,000)	not applicable		£400,000
12	Various Forth Ports requirements including the revised alignment of track at Casino Square, relocated tramstop, junction amendments and removal of 'kink' in alignment from Constitution Street, footpath on south side of Tower Place Bridge and Victoria Dock	01-Oct-08		£150,000
13	Forth Ports requirements at Ocean Terminal amendments	01-Oct-08		£350,000
Total				£11,434,316

Item	Description of Provision Sum	Trigger date	£
1	Accommodation Works	not applicable	£1,000,000
2	Allowance for minor utility diversions	01-Oct-08	£750,000
3	PICOPS / COSS / Possession Protection Staff support when undertaking works adjacent or over the railway	not applicable	£755,307
4	Archaeological Officer – impact on productivity	not applicable	£405,755
5	Additional Crew Relief Facilities at Haymarket [SDS drawings ULE 90130-02- STP-000126 REV 1 and 000127 rev 1 refer]	20 Business Day after BBS raise any queries in respect of issued information	£49,950
6	Urban Traffic Controls [UTC] associated with the wider area impacts	01-Jan-10	£2,500,000
7	Forth Ports requirements for design and construction of by-pass road to adoptable standard	01-Oct-08	£400,000
8	Forth Ports requirements for Lindsay Road amendments	01-Oct-08	£1,750,000
9	Royal Bank of Scotland requirement for enhancement of Gogarburn Tramstop	01-Oct-08	£400,000
Total			£8,011,012

Description	Synopsis	£ 1A	Elemental tag
Allowance for Traffic Signal and UTC works	This allowance is for off route modification (outwith L.O.D) to junction lights, sequencing, programming etc.		Budget Allowance
Murrayfield Modifications	Includes relocation of pitches	940	Budget Allowance
Murrayfield Pitches flood prevention design and Capex impact	Allowance for flood prevention design and capex impact		Budget Allowance - Removed under VE
Network Rail Immunisation	Network Rail requirement to immunise against current leakage into their track circuits, also includes for AC leakage from OLE. - Network Rail costs to be paid by tie	1,000	Network Rail Immunisation - £3m added to Infraco
Power - Network Reinforcement	This item was originally covered in the Risk Register, moved to firm and from R.R	1,580	Network Reinforcement
Ticket Machines	Procured directly	750	
IPR2 contingency	As agreed by TPB	300	
Non-infraco Total		4,570	

EDINBURGH TRAM PROJECT - PHASE 1A
VALUE ENGINEERING TAKEN INTO BBS BID

REF	ITEM	FILTER	VALUE	TAKEN INTO BID	Key Qualifications	Provision
DEPOT						
8	Delete depot pumping station/storm tanks by utilising existing gravity system.	Depot	£193,526	£193,526	tie's carries specification/acceptance risk and cost of additional pump	
9	Depot - Build part now with provision to expand in the future/reduce size of car park facilities	Depot	£230,000	£230,000	tie's carries specification/acceptance risk	
16	Depot - delet split vehicle accommodation system - requirement dependant on tram vehicle selection	Depot	£27,500	£27,500	tie's carries specification/acceptance risk	
17	Depot - Track Maintenance Equipment - rationalise scope requirement and consider renting.	Depot	£27,500	£27,500	tie's carries specification/acceptance risk	
20	Depot - deletion of one pavement (inner) .	Depot	£36,000	£36,000	tie's carries specification/acceptance risk	
24	Depot - delete requirement for concrete apron to security fence	Depot	£6,080	£6,080	tie's carries specification/acceptance risk	
145	Consolidated VE items 7, 10, 11, 19 which results from changes to initial Depot design driven by proximity to BAA runway and EARL decision.	Depot	£3,181,264	2,200,000	DTC but compliant with current technical /design info. Subsequent saving of £200,000 added see below.	
New	Delete standby generator and substitute with hardstanding and power connection for portable generator.	Depot	£250,000	150,000	tie's carries specification/acceptance risk	
DEPOT TOTAL			£3,951,870	£2,870,606		£0
HIGHWAYS						
36b	Material recovery and reprocessing (Infracore); 2 options - reconstituted planings & Type 1R	Highways	£500,000	£500,000	Subject to confirmation from SDS; level of saving subject to adjustment of quantity of this item based on the final design	
152	Reduce Kerb and associated re-instatement of pavement	Highways	£100,000	£100,000	Subject to confirmation from SDS; level of saving subject to adjustment of quantity of this item based on the final design	£50,000
153	Reduce drainage run from guideway	Highways	£100,000	£100,000	Subject to confirmation from SDS; level of saving subject to adjustment of quantity of this item based on the final design	£50,000
HIGHWAYS TOTAL			£700,000	£700,000		£100,000
STRUCTURES						
54	Value Engineering/ de-risked pricing approach developed for the final designs for all structures, particularly substructures and foundations (where not covered below)	Structures	£2,000,000	0	Unable to commit	
55	Edinburgh Park Viaduct various savings including use of cross heads to eliminate temp works, steel or concrete beams.		£1,470,000	1,470,000	Subject to approval of design by NEL/ CEC and subject to SDS designing to cost	£735,000
56	Carricknowe Bridge Parapet - down grade from P6 / P5 to N2 (reduced cost of parapet plus knock on effect on deck design/cost)	Structures	£85,000	85,000	Subject to approval of design by Network Rail	

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EDINBURGH TRAM PROJECT - PHASE 1A
VALUE ENGINEERING TAKEN INTO BBS BID

REF	ITEM	FILTER	VALUE	TAKEN INTO BID	Key Qualifications	Provision
57	A8 Underpass various initiatives	Structures	£850,000	850,000	Subject to being able to design to cost	£765,000
New	Roseburn Street viaduct various initiatives	Structures	£1,375,000	£1,375,000	Subject to approval by stakeholders - SRU and Network Rail	£200,000
New	Water of Leith various initiatives	Structures	£150,000	150,000	Subject to being able to design to cost	
New	Eight maintenance walkway structures - delete or reduce	Structures	£250,000	250,000	Subject to being able to design to cost; and tie taking approvals risk	£250,000
New	Russel rd Bridge piling changes	Structures	£100,000	0	Subject to being able to design to cost	
154	Class 7 material conversion -	Structures	£300,000	£300,000	Subject to confirmation of SDS agreeing to principle; level of saving subject to adjustment of quantity of fill required by the final design	
STRUCTURES TOTAL			£6,580,000	£4,480,000		£1,950,000
SYSTEM WIDE						
77	Optimise the work site lengths wherever practical to ensure efficient construction outputs	System Wide	£300,000	300,000	Subject to further Programme development with CEC, confirm by 9th January.	£300,000
80	Accept more disruption over shorter period to maximise efficiency of construction operations -	System Wide	£100,000	100,000	Subject to further Programme development with CEC, confirm by 9th January.	
148	Remove spare capacity from OTN (linked to item 69)	System Wide	£180,000	0		
150	Option to lease UPS provision from Supplier rather than purchase	System Wide	£300,000	300,000	Subject to agreement of operator	
151	Rationalising spares supplied with the Infraco bid	System Wide	£300,000	300,000	Subject to agreement of operator	
160	PM Integration including shared resources and co-location.	System wide	£1,000,000	500,000	Subject to BBS /tie agreeing savings in resources and facilitates items from BBS and tie costs	
SYSTEM WIDE TOTAL			£2,180,000	£1,500,000		£300,000
TRACK FORM						
100	Noise attenuation (outside of Roseburn Corridor) 3,650m of fencing	Trackform	£50,000	50,000	Subject to property owner claims	
138	Trackform - changing embedded to ballast rail. Ballasted track adjacent to NwkRail	Trackform	£2,000,000	0	Unlikely to yield savings because of short distance. Plus maintenance implications.	
156	Track installation install in strips.	Trackform	£0	0	Unacceptable	
164	Reduce ballasted track thickness from 300 to 200mm	Trackform	£300,000	200,000	Design to cost.	
	UTC associated with wider area impacts			464,400		
TRACK FORM TOTAL			£2,350,000	£714,400		£0

EDINBURGH TRAM PROJECT - PHASE 1A
VALUE ENGINEERING TAKEN INTO BBS BID

REF	ITEM	FILTER	VALUE	TAKEN INTO BID	Key Qualifications	Provision
	NEW INITIATIVES AGREED AFTER MAIN MEETING					
New	Further project management integration over 3 years			£500,000	Joint target	£350,000
New	SDS design scope economy, variation and reduction			£500,000	Joint target	£500,000
New	Tramstops, standard finishes to circa 20-30% of stops			£500,000	Joint target	
New	Picardy place level flexing - MUDFA savings			£500,000	tie led initiative	
New	Picardy place level flexing - construction savings			£500,000	Joint target	£200,000
NOTE	BB agreement to reduce fixed price £120,000			£0	BB risk	£250,000
New	Value engineer finishes on EPV and other structures	Structures		£170,000	Subject to approval by NEL/CEC	£100,000
	NEW VE INITIATIVES TOTAL		£0	£2,670,000	£0	£1,400,000
	TOTAL		£15,761,870	£12,935,006	£0	£3,750,000

Item	Opportunity	Filter	Proposal Origin	Cost of Project Element	Work Stream affected	Current Status	Collated Summary		Anticipated Degree of Success		Cautious View	Contract Change Notice Ref	General Comments (from 29.8.7) (SB 11.10.7 comments) Latest comments in red.
							BBS	Category	BBS				
									%age	£			Requires action
SUMMARY (Columns 1 & 2)				BBS - Target	Degree of Confidence	BBS - Confidence Level	Oct Commercial Report			BBS			
Infraco													
	Banked & Confirmed - Cat 1 (in base bids)			£0	#DIV/0!	£0			#DIV/0!	£0	£0		
	Banked - Cat 2 (confirmed by stakeholders/TEL)			£0	#DIV/0!	£0	3,077,480		#DIV/0!	£0	£0		
	Post Preferred Bidder - Cat 3			£500,000	0%	£0	6,938,567		0%	£0	£0		
	Post Preferred Bidder - Cat 4 (Oct - Dec 2007)			£0	#DIV/0!	£0	9,650,000		#DIV/0!	£0	£0		
	Sub Total			£500,000	0%	£0	19,666,047		0%	£0	£0		
Non Infraco													
	Banked - Cat 5			£3,278,600	42%	£1,363,000	2,755,600		42%	£1,363,000	£0		
	Furtherwork - Cat 6			£9,085,000	35%	£3,197,000	7,530,500		35%	£3,197,000	£0		
	Sub Total			£12,363,600	37%	£4,560,000	10,286,100		37%	£4,560,000	£0		
	Overall Total			£12,863,600	35%	£4,560,000	29,952,147		35%	£4,560,000	£0		
OVERALL TOTALS							£12,863,600			£4,560,000	£0		
HIGHWAYS													
36a	Material recovery and reprocessing - MUDFA 2 options - reconstituted planings & Type 1R	Highways				Mudfa	OPEN	£150,000	6	80%	120,000		SB - use Sign Off sheet estimate £150k
36b	Material recovery and reprocessing - INFRACO 2 options - reconstituted planings & Type 1R					INFRACO	OPEN			0%	0		20.11.7 BBS to firm up figures
37	Reduction in extent of road reinstatement. Premis that base course/road base material used in lieu of wearing course until properly reinstated under INFRACO MUDFA temporary reinstatements	Highways	Project	£5,210,041		MUDFA	OPEN	£145,000	6	80%	116,000		MUDFA Team assessment of opportunity £145,000
HIGHWAYS TOTAL							OPEN	£295,000		80%	£236,000		
LAND & PROPERTY							OPEN						

Item	Opportunity	Filter	Proposal Origin	Cost of Project Element	Work Stream affected	Current Status	Collated Summary		Anticipated Degree of Success		Cautious View	Contract Change Notice Ref	General Comments (from 29.8.7) (SB 11.10.7 comments) Latest comments in red.
							BBS	Category	BBS				
136	Land & Property - specific plots of land that may no longer be required	Land & property	Project		Land & Property	OPEN	£0	5	0%	0			20.11.7 £340k saving already included in current project estimate under L&P.
	LAND & PROPERTY TOTAL					OPEN	£0		#DIV/0!	£0			
	NETWORK RAIL					OPEN							
42	NR Immunisation - ETN only to pay for Direct Current immunisation (£3.5m)	NR	Project - 7.2.4		Infraco	OPEN	£5,000,000	6	0%	0			Nico Decker Report confirms likely saving £3.5-4.0m. Next steps to identify cost impact for each bidder before sign up. Target Date Mon 1st Oct. SB to lead with GG input. Refer to SB VE sheet for comments - NOW IN INFRACO BID AND NORMALISATIONS
	NETWORK RAIL TOTAL					OPEN	£5,000,000		0%	£0			
	SYSTEM WIDE					OPEN							
161	Savings to capex of E&M infrastructure and trams through a finance lease.				Infraco	OPEN	£3,290,000	6	90%	2,961,000			This would be achieved via a defeased tax structure, not a funded lease. Savings value quoted by two potential arrangers are between 3-5%, though commercial value would need to be negotiated with lessor. Also requires analysis of asset type. Either a Fre
	SYSTEM WIDE TOTAL					OPEN	£3,290,000		90%	£2,961,000			
	THIRD PARTY					OPEN							
90a	Murrayfield Pitch Relocation - Flood prevention scheme	Third Party	Project	£3,355,000	Infraco	OPEN	£1,915,600	5	0%	0			From Infraco Normalisation item 9 (in part) - NOW OMITTED FROM NORMALISATIONS
90b	Murrayfield Pitch Relocation - mods only to Waranders Club House	Third Party	Project		Infraco	OPEN	£500,000	6	0%	0			From Infraco Normalisation item 9 (in part) Remaining allowance in Normalisation Item 9 required to meet temporary pitch move commitment to SRU. L. Murphy to confirm if this scope will be required.
	THIRD PARTY TOTAL					OPEN	£2,415,600		0%	£0			
	TRACTION POWER					OPEN							

Item	Opportunity	Filter	Proposal Origin	Cost of Project Element	Work Stream affected	Current Status	Collated Summary		Anticipated Degree of Success		Cautious View	Contract Change Notice Ref	General Comments (from 29.8.7) (SB 11.10.7 comments) Latest comments in red.	
							BBS	Category	BBS					
104	Network Reinforcement - not to be paid for by ETN	Traction Power	Project - 31.1.16		Infraco	OPEN	£1,363,000	5	100%	1,363,000			Sign Off Sheet has £2.2m achieved & £2.45m estimate Letter gone to SP asking confirmation of Tram liability in £s. Will be concluded at end of Oct. Latest figures based on SP verbal w/c 12/11	
TRACTION POWER TOTAL							OPEN	£1,363,000		100%	£1,363,000			
TRAMS							OPEN							
119	Reduce fleet size - delete 1 tram from spare capacity and accept risk to lower performance	Trams	Project - 5.1.17		Tramco	OPEN	£500,000	3	0%	0				
TRAMS TOTAL							OPEN	£500,000		0%	£0			
OVERALL TOTALS							OPEN	£12,863,600		35%	£4,560,000			

NOTE: Financial Impact calculated on average Max/Min impact multiplied by the probability of success

PHASE 1A - BUDGET AT FINANCIAL CLOSE

	FBC	Infraco Award	Tramco Award	Other Costs	Inc in Risk Allow	FIN CLOSE	To Go -April 08
T01	Total tie PM costs	39,225,606	0	0	0	39,225,606	20,982,240
T02	Total DPOF	7,631,160	0	0	0	7,631,160	6,392,966
T06	Total TSS	9,191,775	0	0	316,381	9,508,156	1,187,784
T06.04	CEC staff costs	953,340			483,870	1,437,210	665,140
T12.01-12	Subtotal Communications	391,541	0	0	0	391,541	292,500
T12.13-22	Subtotal Stakeholder	624,370	0	0	0	624,370	568,943
T12.23-37	Subtotal Other	0				0	
T12	Total COMMS / MARKETING	2,276,342	0	0	0	2,276,342	1,117,943
T13	Total TEL	2,723,133	0	0	0	2,723,133	1,503,686
T99	Total Miscellaneous	3,358,616	0	0	0	3,358,616	102,337
TT01	Total Project management	65,359,972	0	0	800,251	66,160,223	31,952,096
TT02	Total other resources	6,379,058	0	0	471,628	6,850,686	930,151
TT03	Total design	23,683,186	0	0	677,808	24,360,994	2,401,828
TT04	Total traffic management and modelling	2,323,215	0	0	329,994	2,653,209	702,477
TT05	Total 3rd party interfaces	316,664	0	0	0	316,664	0
TT06	Total land and other compensation claims	20,643,290	0	0	-61,906	20,581,384	3,235,218
TT07	Total Insurance	4,507,468	0	0	0	4,507,468	3,994,507
TT08	Total MUDFA / Utilities	51,527,336	-3,000,000	0	0	48,527,336	30,155,360
T19.01	Subtotal Infraco main works	215,283,719	20,176,153	0	0	235,459,872	199,192,585
T19.04	Subtotal Funding adjustment	0	0	0	0	0	0
T19.02	Subtotal advance works	374,000	0	0	0	374,000	253,638
T19.03	Subtotal depot advance works	4,808,041	630,496	0	0	5,438,537	-450
T19.05	Subtotal third party works	0	0	0	0	0	0
T19.06	Subtotal VE	-4,560,000	0	0	0	-4,560,000	-4,560,000
T19.07-25	Subtotal Non Infraco works	7,069,684	0	0	0	7,069,684	7,069,684
T19	Total Infraco	222,975,444	20,806,649	0	0	243,782,093	201,955,457
TT09	Total Infraco	222,975,444	20,806,649	0	0	243,782,093	201,955,457
T20.01	Subtotal Tramco main works	51,370,225	0	5,608,775	0	56,979,000	45,471,649
T20.02	Subtotal Funding adjustment	0	0	0	0	0	0
T20.03-30	Subtotal other	0				0	0
T20	Total Tramco	51,370,225	0	5,608,775	0	56,979,000	45,471,649
TT10	Total Tramco	51,370,225	0	5,608,775	0	56,979,000	45,471,649
T44	Total Risk	48,974,000	-17,806,649	-5,608,775	-2,217,775	9,940,142	33,280,943
T999	Total	498,059,858	0	0	0	9,940,142	508,000,000

CEC Deliverables 5.3/5.2c/5.4

Risk Allowance Analysis:

Infraco / Tramco Procurement	17,526,000	0
Infraco/Tramco Delivery	4,030,000	6,872,314
Design & Consents(CEC Deliverables 5.4)	4,313,000	3,301,992
MUDFA	11,447,000	8,644,277
General Programme Delay (CEC Deliverables 5.2c)	3,131,000	6,653,659
Land compensation	4,296,000	1,087,563
TROs	3,208,000	935,765
Network Rail	624,000	318,058
Other	399,000	124,220
QRA Total	48,974,000	27,937,847
Non-delivery of VE included in Infraco price	0	2,000,000
Extent of Road Reinstatement	0	2,000,000
Unspecified Risks (Contingency)		1,343,096
	48,974,000	33,280,943

INFRACO BUDGET RECONCILIATION

	At Preferred Bidder ie FBC	Weisbaden		Rutland SQ		Final		Comment on final deltas
		Deltas	Weisbaden	Deltas	Total	Deltas	Total	
INFRACO								
Firm Prices	159,120,890	54,789,452	213,910,342	3,800,000	217,710,342	10,791,762	228,502,104	
Provisional Prices	49,579,452	(49,579,452)	0		0		0	
VE taken into price- with conditions		(13,818,006)	(13,818,006)		(13,818,006)	83,000	(13,735,006)	
Premium for firm price for previously provisional items		8,000,000	8,000,000		8,000,000	(8,000,000)	0	Premium included in Firm prices
	<u>208,700,342</u>	(608,006)	<u>208,092,336</u>	3,800,000	<u>211,892,336</u>	2,874,762	<u>214,767,098</u>	
Infraco Normalisation (provisional cums)	<u>17,803,222</u>	(7,633,132)	<u>10,170,090</u>		<u>10,170,090</u>	3,725,238	<u>13,895,328</u>	Items reclassified as Provisional
Negotiated Infraco Contract Price	226,503,564	(8,241,138)	218,262,426	3,800,000	222,062,426	6,600,000	228,662,426	£8.6m increases less £2m post close design (ERs+ SDS quality+ Prog extension + Tapered poles)
Other Items or possible adjustments to price post close:								
EAL - Burnside Road		1,000,000	1,000,000		1,000,000		1,000,000	
Maintenance Mobilisation & Spare Parts		2,397,000	2,397,000		2,397,000		2,397,000	
SDS construction support						1,000,000	1,000,000	
Tapered poles type						400,000	400,000	
Provisional sum included above for remaining SDS design				(2,000,000)	(2,000,000)	2,000,000	0	Now netted of contract price
Employers Requirements additions since V3.1				1,600,000	1,600,000	(1,600,000)	0	Now included in Contract price
Value Engineering	(19,708,389)	19,708,389						
Contingency against conditions on VE not being realised	4,442,000	(442,000)	4,000,000		4,000,000	(2,000,000)	2,000,000	Take £2m of provision down to Risk Allowance
Budget Allowance for Infraco (BBS) contract	211,237,175	14,422,251	225,659,426	3,400,000	229,059,426	6,400,000	235,459,426	
Items included in Infraco budget but not procured through BBS								
Non-Infraco works	16,502,332	(9,732,648)	6,769,684	300,000	7,069,684		7,069,684	
Advance works by others					0		0	
Depot excavation	4,808,041		4,808,041	630,946	5,438,987		5,438,987	
Minor contracts	374,000		374,000		374,000		374,000	
	<u>21,684,373</u>		<u>11,951,725</u>		<u>12,882,671</u>		<u>12,882,671</u>	
Value Engineering	(9,946,100)	5,386,100	(4,560,000)		(4,560,000)		(4,560,000)	
Net Non-Infraco Items	11,738,273		7,391,725		8,322,671		8,322,671	
Total £ included in Infraco Budget Line	222,975,448		233,051,151		237,382,097		243,782,097	
Increase on Infraco line in the FBC Budget		10,075,703	10,075,703	4,330,946	14,406,649	6,400,000	20,806,649	
Less: Utilities (MUDFA) scope included in Infraco			(3,000,000)		(3,000,000)		(3,000,000)	Picardy Place
Transfer from Risk Allowance Required			<u>7,075,703</u>		<u>11,406,649</u>		<u>17,806,649</u>	

Tram Supply Figure Calculation

Date:- 11/03/08

	Recommended Final Deal w/ currency hedge	FBC Build Up	Delta
BAFO figure (€77,604,671)	£53,780,037.00	£53,780,037.00	
Omit figure for final design work negotiated in discussions with CAF	£721,491.00	£1,033,341.00	£311,850.00
Revised figure	£53,058,546.00	£52,746,696.00	£311,850.00
<u>Add mandatory variants (these are all savings)</u>			
Mandatory Variant MV 5 flange lubrication (for 6 trams)	£0.00	-£37,317.00	£37,317.00
Mandatory Variant MV 6 Passenger Counting system (for 6 trams)	-£456,225.00	-£456,225.00	
Sub total	£52,602,321.00	£52,253,154.00	£349,167.00
Maintenance Mobilisation	£2,130,686.00	£0.00	£2,130,686.00
Sub Total	£54,733,007.00	£52,253,154.00	£2,479,853.00
<u>Add options in variant bid that should be in base bid (these are all savings)</u>			
CAF Variant CAF V2 complianc ewith EN standards instead of BS regarding smoke and fire	-£425,547.00	-£425,547.00	
CAF Variant Spare parts saving	-£203,202.00	-£381,150.00	£177,948.00
CAF Variant saving to Mock up	£0.00	-£76,230.00	£76,230.00
Sub Total	£54,104,258.00	£51,370,227.00	£2,734,031.00
Discount for 20% first milestone 1.00%	-£541,042.58	£0.00	-£541,042.58
	£53,563,215.42	£51,370,227.00	£2,192,988.42
Depot Equipment - Firm			£0.00
Depot Equipment - Provisional		£0.00	£0.00
Sub Total	£53,563,215.42	£51,370,227.00	£2,192,988.42
Currency fluctuation	BAFO £/Euro 0.693 Hedged £/Euro 0.7362 % change 6.23%	£3,339,005.64	£3,339,005.64
Adjustment for CAF share of currency risk Half of 1%	0.50%	£0.00	£0.00
Total	£56,902,221.06	£51,370,227.00	£5,531,994.06
Other Items Model	£6,000.00		£6,000.00
Total Price	£56,908,221.06	£51,370,227.00	£5,537,994.06

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Tramco Budget **£51,370,227.00**

Increase in Budget over FBC Base costs = required tfr from risk allowance **£5,537,994.06**

£5,537,994.06

Comprising:

Maintenance mobilisation	£2,130,686.00
Other changes/options by us	£603,345.00
Discount for 20% upfront	-£541,042.58
Currency fluctuation	£3,339,005.64
Model	£6,000.00
	£5,537,994.06

Update to 6/3/08 Tram Supply	£54,743,000.00
w/o depot equip Maintenance Mobilisation	£2,230,000.00
Depot Equipment	
Other Items	£6,000.00
	£56,979,000.00

Added back CAF share on Currency diff £278k

	£m	Weisbaden	Changes	Final Budget
Firm Prices		221.9	6.6	228.5
VE taken into price- with conditions		-13.8	0.1	-13.7
		208.1	6.7	214.8
Provisional Sums		10.2	3.7	13.9
Negotiated Infraco Contract Price		218.3	10.4	228.7
Other Items / adjustments to Contract Price:				
EAL - Burnside Road		1.0	0.0	1.0
Maintenance Mobilisation & Spare Parts		2.4	0.0	2.4
Other Items			1.4	1.4
Contingency against conditions on VE		4.0	-2.0	2.0
Budget Allowance for Infraco (BBS) contract		225.6	9.8	235.5
Non Infraco (BBS) items		7.4	0.9	8.3
Total £ included in Infraco Budget Line		233.0	10.7	243.8
Increase on Infraco line in the FBC Budget:		10.1	10.7	20.8
Less: Utilities (MUDFA) scope included in Infraco		-3.0		-3.0
Transfer from Risk Allowance Required		7.1	10.7	17.8

£m

<u>FBC</u>	<u>Infraco</u>	<u>Tramco</u>	<u>Other</u>	<u>Inc in</u>	<u>FIN CLOSE</u>
<u>Estimate</u>	<u>Award</u>	<u>Award</u>	<u>Costs</u>	<u>Est</u>	<u>Budget</u>

EDINBURGH TRAM PROJECT
P80 Risk Allocation Report

Current Period End **01-Mar-08**

Sim Run P80 1A+1B **30965.44** £k

CEC Deliverables 5.1

Risk Mean Sum
22336.45 £k

Total Allocation
Phase 1A
27937.85

WBS Item	Allocated Risks				Impact Assessment 08 Feb 2008				Exposure Period		Sim Run Risk Mean	P80 Risk Allocation	P80 Risk Allocation 1A	
	Risk ID	Cause	Risk Event	Effect	Prob	Current Impact Assessment			Start	End				
						%	Min	Most Likely						
11.1 Construction	994	The design for the lighting has yet to be approved by CECs Street Lighting section	Additional time or cost could be incurred in relation to the street lighting works	Compliance with their requirements may incur abortive works resulting in additional cost and delay to programme	17.50%		12.5		29-Aug-07	31-Oct-08	2.19	3.03	2.43	Design & Consents
2 PROCUREMENT CONSULTANT	44	SDS contractor does not deliver the required prior approval consents before novation	Late prior approval consents	Delay to programme with additional resource costs and delay to Infraco. procurement. Impact upon risk balance.	50.00%	900	1800	2700	30-Jun-06	30-Nov-08	897.11	1243.68	1119.32	Design & Consents
3 DESIGN	336	Adequate scope and extent of noise and vibration prevention measures/requirements are not provided to SDS; Specifications relating to Tram noise provided by Tramco are optimistic.	Design assumptions lead to Tram noise and vibration measures being inadequate during operation	Tram design requires to be re-worked. Post construction elements need to be adjusted or re-constructed or additional noise and vibration measures need to be incorporated.	10.00%	100		1000	01-Jan-07	31-Jan-11	53.22	73.79	59.03	Design & Consents
5 PARLIAMENTARY PROCESS/ APPROVALS	271	Inadequate quality of submission of approval. Partial submission of package. Programme compression. Lack of CEC resources.	Failure to process prior approvals applications within 8 weeks	Delay and disruption to Infraco programme	80.00%	750	750	1000	03-Jan-06	29-Aug-08	667.20	924.95	924.95	Design & Consents
5 PARLIAMENTARY PROCESS/ APPROVALS	990	SDS are behind programme with design review certificates and tie have decided not to extend programme period to account for this.	CEC carry financial impact of uncertified designs provided to Infraco	Modifications required to the designs post-contract award resulting in additional costs	50.00%	500	750	1000	13-Aug-07	31-May-08	375.52	520.59	416.47	Design & Consents
7.3 Infraco	279		Third party consents including Network Rail, CEC Planning, CEC Roads Department, Historic Scotland, Building Fixing Owner consent is denied or delayed	Delay to programme; Risk transfer response by bidders is to return risk to tie; Increased out-turn cost if transferred and also as a result of any delay due to inflation.	50.00%		1250		03-Jul-06	31-Dec-09	625.00	866.45	779.80	Design & Consents
1 GENERAL/OVERALL	169	Concurrent major projects in Edinburgh	Other major projects in Edinburgh interface with Tram	Delay in sequence in certain areas, Additional interface project management costs.	50.00%	100	300	500	01-Mar-07	31-Dec-10	150.08	208.05	166.44	General Programme Delay
1.7 Miscellaneous	343	General delay to programme with various causes e.g. failure to obtain approvals on time, parliamentary processes, delays due to lack of prioritisation of BAA agreement with new owners	Delay to completion of project	Inflation at 5% causes increased out-turn cost due to delay plus revenue loss	40.00%	6000	15000	23000	31-Dec-10	31-Dec-11	5849.32	8109.02	6487.21	General Programme Delay
7.1.3 Depot	974	Inaccurate Topo Survey results	Increase in levels of Spoil Excavation	Increased Cost & Programme extension	25.00%	100	300	500	14-May-07	24-Aug-08	75.04	104.03	104.03	Infraco Delivery
7.1.3 Depot	981	Existing Spoil Site Unable to accept future spoil	Increase in the Lothian Valuation Joint Board rateable value of the spoil site	New Landfill site will have to be found and agreements reached. Possibility of increased costs	80.00%	0	25	50	19-Jul-07	31-Mar-08	19.95	27.66	27.66	Infraco Delivery
7.1.3 Depot	876	Agreement with SEPA to use Gravity Drain Proposal	Gravity Drain Proposal	Cost & time saving	79.50%	12.5	12.5	12.5	19-Mar-08	08-Jul-08	9.94	13.78	13.78	Infraco Delivery
7.3 Infraco	952	Scope of works relating to Wide Area Modelling (WAM) have not been agreed with SDS because they consider this to be out with the scope of their contract.	Uncertainty about extent of construction works required on road network relating to Wide Area Modelling issues.	Potential claim from SDS to deal with additional design work. Potential construction costs to deal with WAM issues (difficult to quantify without design) over and above those already included.	95.00%	0		3000	03-Jul-06	24-Sep-08	1421.78	1971.05	1971.05	Infraco Delivery
7.3 Infraco	931	Utilities assets uncovered during construction that were not previously accounted for; unidentified abandoned utilities assets; known redundant utilities; unknown live utilities; unknown redundant utilities.	Unknown or abandoned assets impacts scope of Infraco work	Re-design and delay as investigation takes place and solution implemented. Increase in Capex cost as a result of additional works.	90.00%	500		1000	01-Oct-07	31-Jul-10	674.25	934.73	747.78	Infraco Delivery
7.3 Infraco	172	Area of possible contamination and unstable ground (unlicensed tip) has been highlighted during desk study immediately to east of Gogar Burn - investigation for CERT project indicates that this consists of building rubble and domestic waste.	Tramway runs through area of possible contamination and special foundation is required to cope with unstable ground	Increase in costs to provide special foundation solution	95.00%	100	200	300	01-Jan-07	31-Jul-08	190.18	263.65	263.65	Infraco Delivery
7.3 Infraco	105	Encountering archaeological finds/burials/munitions during construction	Exhumation of archaeological finds/burials	Delay in construction programme	85.00%	0	150	500	28-Sep-07	31-Jul-10	184.74	256.11	230.50	Infraco Delivery
7.3 Infraco	318	Failure to make arrangements with Utilities for the phasing of necessary connections; Utility Company operational constraints	Utility connections cannot proceed as planned.	Potential delay to start of Infraco works in certain sections	50.00%	100		500	04-Apr-07	31-Jan-09	149.81	207.69	166.15	Infraco Delivery
7.3 Infraco	173	Uncertainty over extent of contaminated land/hazardous materials on route	Tramway runs through area of previously unidentified contamination/hazardous materials and material requires to be removed and replaced (dig and dump).	Increase in costs to remove material to special and other tip.	50.00%	1500	6000	8000	29-Sep-06	31-Jul-10	2599.25	3603.39	3243.05	Infraco Delivery

EDINBURGH TRAM PROJECT
P80 Risk Allocation Report

Current Period End 01-Mar-08

Sim Run P80 1A+1B 30965.44£k

CEC Deliverables 5.1

Risk Mean Sum 22336.45£k
 Total Allocation Phase 1A 27937.85

WBS Item	Allocated Risks				Impact Assessment 08 Feb 2008				Exposure Period		Sim Run Risk Mean	P80 Risk Allocation	P80 Risk Allocation 1A	
	Risk ID	Cause	Risk Event	Effect	Prob	Current Impact Assessment			Start	End				
						%	Min	Most Likely						
7.3 Infraco	865	Buildings contain asbestos that was not uncovered during surveys	Asbestos found during demolition works and excavations for construction	Cost and delay during investigation and removal	90.00%	60		150	01-Jan-08	31-Mar-09	94.39	130.85	104.68	Infraco Delivery
1.1 Land & Property	352	Increase in land values	Higher land compensation claims than anticipated	Additional uplift on compensation claims	30.00%	0		4500	05-Mar-07	31-Dec-10	684.66	949.15	949.15	Land compensation
1.1 Land & Property	10	Costs of obtaining access rights are unknown	Cost associated with obtaining wayleaves	Increased legal costs relating to obtaining wayleaves	40.00%	50	200	500	02-Apr-07	25-Oct-08	99.84	138.41	138.41	Land compensation
7.2 MUDFA/Utilities	164	Utilities assets uncovered during construction that were not previously accounted for; unidentified abandoned utilities assets; asbestos found in excavation for utilities diversion; unknown cellars and basements intrude into works area; other physical job	Unknown or abandoned assets or unforeseen/contaminated ground conditions affect scope of MUDFA work.	Re-design and delay as investigation takes place and solution implemented; Increase in Capex cost as a result of additional works.	95.00%	1000	3000	6000	02-Apr-07	31-Dec-08	3171.30	4396.43	4176.61	MUDFA
7.2 MUDFA/Utilities	139	Utilities diversion outline specification only from plans	Uncertainty of Utilities location and consequently required diversion work/ unforeseen utility services within LoD	Increase in MUDFA costs or delays as a result of carrying out more diversions than estimated	90.00%	0	1200	2400	02-Apr-07	31-Dec-08	1081.92	1499.89	1424.90	MUDFA
7.2 MUDFA/Utilities	342	Tram alignment at A8 crossing at Gogar co-incident BT data nests/cable (main coms link between Glasgow and Edinburgh) and sewer	A8 crossing tunnel requires special design or BT data nest/cables require to be moved or solution to sewer to be engineered		80.00%	1000	1250	1500	04-Apr-07	30-Sep-08	1000.85	1387.22	1387.22	MUDFA
7.2 MUDFA/Utilities	914	Required approval/acceptance turnaround time does not reflect SUC standard practice; SUCs do not have enough resource or process capability to achieve 20 day turnaround	Statutory Utility Companies unable to meet design approval/acceptance turnaround time to meet programme	Additional period required for design approval/acceptance turnaround	95.00%		880		02-Mar-07	31-Dec-08	836.00	1158.96	1101.01	MUDFA
7.2 MUDFA/Utilities	911	Scottish Power own and maintain a cable tunnel in the vicinity of Leith Walk that may or may not interfere with Tram construction and operation; exact location and depth of tunnel is unknown; condition of tunnel is unknown.	Presence of Scottish Power tunnel in Leith Walk requires radical solution	Tunnel may have to be decommissioned and re-laid in a more suitable location; tram alignment may require to be adjusted; special foundation solution e.g. cantilever may be required; increased capex; potential for tunnel collapse during operation and	80.00%	400	500	600	02-Apr-07	31-Oct-08	400.00	554.53	554.53	MUDFA
1.3.1 NR Immunisation Project	932	Information handed over in draft format as part of continual design development; Downstream Tram design change that impacts on requirements; Zone of interference not defined adequately	SDS gives wrong or insufficient information to Network Rail	Network Rail design their works inappropriately for final Tram requirements; Network Rail are unable to complete their design in time to meet programme; Cost to change design; Delay during redesign; Final works are not suitable and consequently Tram cannot	5.00%	100	300	500	02-Apr-07	30-Oct-09	15.53	21.53	21.53	Network Rail
7.3 Infraco	134	Network Rail possessions over and above that estimate are required	Compensation paid to Train Operating Companies	Increased compensation paid to Train Operating Companies	5.00%	500	2000	4000	01-Oct-07	31-Jan-09	108.67	150.66	150.66	Network Rail
7.3 Infraco	115	Network Rail cancels planned possessions	Planned work at interface with Network Rail is delayed	Time delay and resulting cost increase	10.00%	350	750	2000	01-Oct-07	31-Jan-09	105.23	145.88	145.88	Network Rail
11.1 Construction	993	Due to a terrorism event relating to Edinburgh Airport or due to the mitigation of the risk of such an event occurring traffic restrictions introduced in the vicinity of the airport cause unacceptable delays for vehicles accessing and exiting from the site.	Free access cannot be guaranteed to the P&R site	Delays to construction vehicles could have impact on completion date and cost of construction, delays for car park users or buses could detract from usefulness and viability of facility	2.50%		12.5		01-Oct-07	31-Mar-09	0.31	0.43	0.43	Other
2 PROCUREMENT CONSULTANT	337	Unsuccessful tenderer challenges procurement process (Tramco or Infraco)	OJEU procurement process is challenged	Possible retender; Delays; Legals costs to deal with challenge	5.00%	0		100	12-Jan-07	30-Oct-08	2.47	3.43	3.43	Other
2 PROCUREMENT CONSULTANT	76	Introduction of TEL as client	Change of client during works	Delay and cost during re-negotiation of DPOF contract and additional approvals process	5.00%	12.5		12.5	03-Jul-06	30-Oct-06	0.63	0.87	0.69	Other
2.1 tie Resources	58	Poor performance (quality) by Infraco during construction; poor materials; latent defects	Infraco fails to deliver construction quality; latent defects occur during or after Infraco maintenance period	Rework, stakeholder criticism, negative PR, programme delay if quality issue occurs during construction, operations affected by rework, project management costs to deal with issues	10.00%	25	62.5	100	31-Dec-10	30-Dec-16	6.16	8.54	6.83	Other
2.2 Transdev	888	Design, construction and/or testing does not meet Transdev requirements and gain approval from the ROGS Competent Person	Transdev refuse to operate system on safety ground or apply overly restrictive procedures that are not directly the responsibility of Infraco (ROGS Competent Person agrees with this)	Delay to commencement of service, additional cost both for delay and rectification of the issue	2.00%	3000	4500	6000	30-Jun-09	31-Dec-10	91.28	126.54	101.23	Other

EDINBURGH TRAM PROJECT
P80 Risk Allocation Report

Current Period End 01-Mar-08

Sim Run P80 1A+1B 30965.44 £k

CEC Deliverables 5.1

Risk Mean Sum
22336.45 £k

Total Allocation
Phase 1A
27937.85

WBS Item	Allocated Risks				Impact Assessment 08 Feb 2008			Exposure Period		Sim Run Risk Mean	P80 Risk Allocation	P80 Risk Allocation 1A		
	Risk ID	Cause	Risk Event	Effect	Prob	Current Impact Assessment		Start	End					
						%	Min							Most Likely
2.9 TEL	889	Unsuccessful negotiation. TEL believes costs inflated too much.	Target operating costs for Phase D are not agreed.	TEL Business Case becomes undeliverable. Potential to undertake Dispute Resolution to gain agreement.	1.00%	0	300	04-Jan-10	06-Jan-19	3.00	4.16	3.33	Other	
3 DESIGN	104	Delay in design information release from specialist tram manufacturer	Delay in detailing of stops, trackway, OLE etc for Phase 1B	Time delay and consequent costs	15.00%	0	25	83	01-Jan-07	30-Sep-08	5.45	7.56	0.00	Other
3 DESIGN	162	Land is not acquired yet	Gaining access to land prior to purchase for advanced works	Increased management costs and delays to design	10.00%	0		30	02-Apr-07	28-Sep-08	1.46	2.03	1.62	Other
7.1.1 Invasive Species	869	Surveying team unable to obtain access to Network Rail, BAA and other privately owned land because they were not cleared to access this land (including PTS).	Extent of Invasive Species Area Exceeds Estimate from Survey	Underestimating the extent of works; leads to an increase in cost	17.50%		20		17-Apr-07	01-Apr-09	3.50	4.85	4.85	Other
7.1.1 Invasive Species	879	Contractor is unable to get access to worksite due to access route being outside LOD and owned by others	Access to land to eradicate invasive species is not available when required	Programme Delay; contractor refuses to take ownership of risk 869 or includes high contingency in tender to allow for.	10.00%	0	10	20	12-Mar-07	01-Apr-09	0.96	1.34	0.04	Other
7.1.2 Badger Relocation	894	Ineffective/Inappropriate Proposals: new setts must be built before old ones can be closed and licenses will not be issued until nearer time of closure; animals must have settled in new home before closure of old one can take place	Roseburn Badger Proposals for closure of old setts not approved by SNH	Delay in accessing land to construct Tram works and hence in Programme	17.50%	0	12.5	25	01-Oct-06	28-Nov-08	2.19	3.03	0.00	Other
7.1.2 Badger Relocation	883	Ineffective/Inappropriate Proposals: new setts must be built before old ones can be closed and licenses will not be issued until nearer time of closure; animals must have settled in new home before closure of old one can take place	Gogarburn Badger/Otter Proposals for closure of old setts not approved by SNH/SEERAD	Delay in accessing land to construct Tram works and hence in Programme	10.00%	0	12.5	25	01-Oct-07	30-Oct-08	1.27	1.76	1.76	Other
5 PARLIAMENTARY PROCESS/ APPROVALS	977	Legal challenge. Extension of statutory consultation process. Large number of objections. TRO process is subject to a public hearing process.	Delay in achievement of TROs) due to a large number of public objections and/or a legal challenge to using a TTRO to construct Infraco.	Requirement to start construction using TTROs	90.00%		750		18-Jun-07	31-Dec-09	675.00	935.76	935.76	TROs

22336.45
Mean Sum = p50

27,938

5419.33
2620.24
6489.88
5999.40
784.50
675.00
229.43
118.68
-

6872.31
3301.99
8644.28
6653.66
1087.56
935.76
318.06
124.22
-

Infraco Delivery
Design & Consents
MUDFA
General Programme Delay
Land compensation
TROs
Network Rail
Other
Unspecified Risks (Contingency)

22,336

27,938

PROVISIONAL SUMS

Description	Synopsis	£	Elemental tag
Provision of pumped surface water outfall system at A8 underpass		100	Depot
Scottish Power Connections to Depot and IPR	Refer to letter from Scottish Power	750	OLE
Relocation of Ancient Monuments	Backup available	54	Prelims
Allowance for minor utility diversions	Minor utilities relate to utilities at OLE foundations etc. not being undertaken by MUDFA.	750	Track & Form
Archaeological Officer - impact on productivity MUDFA/INFRACO	It is anticipated this "interference" will reduce work lengths in key areas. Bidder has suggested a more likely cost of £50k based on their experience of officers with a watching brief	406	Track & Form
Ballast	Bidder included for non NR compliant ballast, addition of £300k as indicated by Bidder for the use of NR compliant ballast. Include in V.E list ref. RF006	300	Track & Form
Charrette Changes (20% in 2nd drop)	Changes to cover Picardy Place and Leith Walk re-alignment	6,340	Highways
E/O Shell Grip	Bidder has indicated £200k would be sufficient	319	Highways
Mains Power Connection to street lights and traffic signals	Bidder suggests connections to be undertaken by Scottish Power	115	Highways
Adjust for Network Rail Possessions support	Costs for PICOPS / COSS when undertaking works adjacent / over the railway. Bidder has suggested £50k based on 50 possessions at £1k per possession	755	Structures
Leith Walk substation demolition	Potential requirement to demolish existing structure.	56	Structures
Additional Crew Relief Facilities at Haymarket	Late addition to scheme, facility to be located under span of proposed Haymarket Viaduct (5 span)	50	Structures
Structure S18 allowance for anticipated works	Minimal works required at this location.		Structures - all additional costs taken into account in firming up price
UTC	Along the Tram route	2,500	
Scottish Power	Connections to substations x 8	400	
Accommodation Works	Provisional costs of complying with 3rd party agreements (eg COCP)	1,000	

13,895

Description	Synopsis	£ 1A	Elemental tag
Allowance for Traffic Signal and UTC works	This allowance is for off route modification (outwith L.O.D) to junction lights, sequencing, programming etc.	2,500	Budget Allowance
Murrayfield Modifications	Includes relocation of pitches	940	Budget Allowance
Murrayfield Pitches flood prevention design and Capex impact	Allowance for flood prevention design and capex impact		Budget Allowance - Removed under VE
Network Rail Immunisation	Network Rail requirement to immunise against current leakage into their track circuits, also includes for AC leakage from OLE. - Network Rail costs to be paid by tie	1,000	Network Rail Immunisation - £3m added to Infraco
Power - Network Reinforcement	This item was originally covered in the Risk Register, moved to firm and from R.R	1,580	Network Reinforcement
Ticket Machines	Procured directly	750	
IPR2 contingency	As agreed by TPB	300	
Non-infraco Total		7,070	

EDINBURGH TRAM PROJECT - PHASE 1A

CEC Deliverables 6.1

VALUE ENGINEERING TAKEN INTO BBS BID

REF	ITEM	FILTER	VALUE		Key Qualifications
			Target	Agreed BBS position	
	BUILDINGS				
	BUILDINGS TOTAL		£0	£0	
	DEPOT				
8	Delete depot pumping station/storm tanks by utilising existing gravity system.	Depot	£193,526	£193,526	tie's carries specification/acceptance risk and cost of additional pump
9	Depot - Build part now with provision to expand in the future/reduce size of car park facilities	Depot	£230,000	£230,000	tie's carries specification/acceptance risk
14	Delete under floor lift plant and utilise mobile jacks. Incl mobile future proofing.	Depot	£250,000	£250,000	tie's carries specification/acceptance risk
16	Depot - delet split vehicle accommodation system - requirement dependant on tram vehicle selection	Depot	£27,500	£27,500	tie's carries specification/acceptance risk
17	Depot - Track Maintenance Equipment - rationalise scope requirement and consider renting.	Depot	£27,500	£27,500	tie's carries specification/acceptance risk
20	Depot - deletion of one pavement (inner) .	Depot	£36,000	£36,000	tie's carries specification/acceptance risk
24	Depot - delete requirement for concrete apron to security fence	Depot	£6,080	£6,080	tie's carries specification/acceptance risk
129	Depot - delete compressed air system, utilise 1 or 2 local /mobile compressors	Depot	£54,400	£54,400	tie's carries specification/acceptance risk
145	Consolidated VE items 7, 10, 11, 19 which results from changes to initial Depot design driven by proximity to BAA runway and EARL decision.	Depot	£3,181,264	2,000,000	DTC but compliant with current technical /design info. Subsequent saving of £200,000 added see below.
New	Delete standby generator and substitute with hardstanding and power connection for portable generator.	Depot	£250,000	150,000	tie's carries specification/acceptance risk
	DEPOT TOTAL		£4,256,270	£2,975,006	
	HIGHWAYS				
36b	Material recovery and reprocessing (Infracore); 2 options - reconstituted planings & Type 1R	Highways	£500,000	£500,000	Subject to confirmation from SDS; level of saving subject to adjustment of quantity of this item based on the final design
152	Reduce Kerb and associated re-instatement of pavement	Highways	£100,000	£100,000	Subject to confirmation from SDS; level of saving subject to adjustment of quantity of this item based on the final design
153	Reduce drainage run from guideway	Highways	£100,000	£100,000	Subject to confirmation from SDS; level of saving subject to adjustment of quantity of this item based on the final design
	HIGHWAYS TOTAL		£700,000	£700,000	

tie additions as prov sums or into BBS bid

Risk Allocation

100,000

250,000

50,000

50,000

EDINBURGH TRAM PROJECT - PHASE 1A

CEC Deliverables 6.1

VALUE ENGINEERING TAKEN INTO BBS BID

REF	ITEM	FILTER	VALUE	VALUE	Key Qualifications
NETWORK RAIL					
42	NR Immunisation - ensure design of immunisation is based on minimum safe propagation distance (e.g. <100m). Project budget previously very conservative.	NR	£4,700,000	0	Terms remain as BBS letter; particularly that tie carries NR cost risk
NETWORK RAIL TOTAL			£4,700,000	£0	
OLE					
49	Overhead Contact system - Switchgear - rationalise specification - considered "quite onerous"	OLE	£336,000	150,000	Siemens commitment related to non specific items
135	OLE - Catenary opportunity in Sections 5 to 7 - replace trolley wire with catenary on segregated sections.	OLE		0	No net savings. All in price. Assumes fully compliant with planning and technical requirements but excludes tapered poles.
149	Provision of combined incoming and return cabinet.	OLE	£42,000	0	tie proven to be incompatible with SP feeder arrangements.
OLE TOTAL			£378,000	£150,000	
STRUCTURES					
54	Value Engineering/ de-risked pricing approach developed for the final designs for all structures, particularly substructures and foundations (where not covered below)	Structures	£2,000,000	0	Unable to commit
55	Edinburgh Park Viaduct various savings including use of cross heads to eliminate temp works, steel or concrete beams.		£1,470,000	1,470,000	Subject to approval of design by NEL/ CEC and subject to SDS designing to cost
56	Carricknowe Bridge Parapet - down grade from P6 / P5 to N2 (reduced cost of parapet plus knock on effect on deck design/cost)	Structures	£85,000	85,000	Subject to approval of design by Network Rail
57	A8 Underpass various initiatives	Structures	£850,000	850,000	Subject to being able to design to cost
New	Roseburn Street viaduct various initiatives	Structures	£1,375,000	£1,375,000	Subject to approval by stakeholders - SRU and Network Rail
New	Water of Leith various initiatives	Structures	£150,000	150,000	Subject to being able to design to cost
New	Eight maintenance walkway structures - delete or reduce	Structures	£250,000	250,000	Subject to being able to design to cost; and tie taking approvals risk
New	Russel rd Bridge piling changes	Structures	£100,000	0	Subject to being able to design to cost
154	Class 7 material conversion -	Structures	£300,000	£300,000	Subject to confirmation of SDS agreeing to principle; level of saving subject to adjustment of quantity of fill required by the final design
STRUCTURES TOTAL			£6,580,000	£4,480,000	
SUPERVISORY & COMMS					
65	Signalling & Comms - fewer CCTV cameras . Reduced to 55Nr . (Tramstops 45Nr, Depot 10Nr)	Supervisory & Comms	£100,000	0	

tie additions as prov sums or into BBS bid

1,000,000

735,000

765,000

200,000

250,000

EDINBURGH TRAM PROJECT - PHASE 1A

CEC Deliverables 6.1

VALUE ENGINEERING TAKEN INTO BBS BID

REF	ITEM	FILTER	VALUE		Key Qualifications
69	Signalling & Comms - rationalise fibre optic ring. More economic architecture that performs the same function could be employed	Supervisory & Comms	£100,000	0	
73	Signalling & Comms - Current requirement for location and interface of the SCADA and Points controllers etc is unnecessarily complex.	Supervisory & Comms	£50,000	0	
74	Signalling & Comms - rationalise loop quantities by combining some loop functions	Supervisory & Comms	£87,500	0	
75	Signalling & Comms - Remove ambient noise sensing on the passenger announcement system	Supervisory & Comms	£7,000	0	
163	UPS - reduce capacity from 4hrs to 3hrs	Supervisory & Comms	£50,000	0	
165	Reduce nr of Signalised Pedestrian Xings.	Supervisory & Comms	?	0	
SUPERVISORY & COMMS TOTAL			£394,500	£0	
SYSTEM WIDE					
77	Optimise the work site lengths wherever practical to ensure efficient construction outputs	System Wide	£300,000	300,000	Subject to further Programme development with CEC, confirm by 9th January.
80	Accept more disruption over shorter period to maximise efficiency of construction operations -	System Wide	£100,000	100,000	Subject to further Programme development with CEC, confirm by 9th January.
148	Remove spare capacity from OTN (linked to item 69)	System Wide	£180,000	0	
150	Option to lease UPS provision from Supplier rather than purchase	System Wide	£300,000	300,000	Subject to agreement of operator
151	Rationalising spares supplied with the Infraco bid	System Wide	£300,000	300,000	Subject to agreement of operator
160	PM Integration including shared resources and co-location.	System wide	£1,000,000	1,000,000	Subject to BBS /tie agreeing savings in resources and facilitates items from BBS and tie costs
SYSTEM WIDE TOTAL			£2,180,000	£2,000,000	
TRACK FORM					
100	Noise attenuation (outside of Roseburn Corridor) 3,650m of fencing	Trackform	£50,000	50,000	Subject to property owner claims
138	Trackform - changing embedded to ballast rail. Ballasted track adjacent to NwkRail	Trackform	£2,000,000	0	Unlikely to yield savings because of short distance. Plus maintenance implications.
156	Track installation install in strips.	Trackform	£0	0	Unacceptable
164	Reduce ballasted track thickness from 300 to 200mm	Trackform	£300,000	200,000	Design to cost.
TRACK FORM TOTAL			£2,350,000	£250,000	
TRACTION POWER					
103	11Kv Traction Power feeds to sub stations including any network reinforcement required (separate VE 104).	Traction Power	?	0	Defer until SP current phase of negotiations is complete.

tie additions as prov sums or into BBS bid

300,000

EDINBURGH TRAM PROJECT - PHASE 1A

CEC Deliverables 6.1

VALUE ENGINEERING TAKEN INTO BBS BID

REF	ITEM	FILTER	VALUE		Key Qualifications
109	Power supply - Russell Rd TPH - equipment for future upgrade to substation to be supplied when needed i.e. don't supply transformer rectifier now.	Traction Power	?	0	BBS to check equipment included and advise. ASAP
158	Power Supply (up to passenger operation) - possible over allowance in DFBC	Traction Power	£300,000	300,000	Subject to tie demonstrating evidence.
	TRACTION POWER TOTAL		£300,000	£300,000	
New	Other unidentified VE items	Other	£1,000,000	£0	Need specifics for BBS commitment therefore zero.
	UNIDENTIFIED VE TOTAL		£1,000,000	£0	
				£0	Need specifics for BBS commitment therefore zero.
	NEW INITIATIVES AGREED AFTER MAIN MEETING				
New	Further project management integration over 3 years			£500,000	Joint target
New	SDS design scope economy, variation and reduction			£500,000	Joint target
New	Tramstops, standard finishes to circa 20-30% of stops			£500,000	Joint target
New	Picardy place level flexing - MUDFA savings			£500,000	tie led initiative
New	Picardy place level flexing - construction savings			£500,000	Joint target
NOTE	BB agreement to reduce fixed price £120,000			£0	BB risk
NOTE	Siemens agreement to reduce fixed price on item 49 above by £10,000			£10,000	Siemens risk
NOTE	Siemens agreement to reduce fixed price on item 145 above by £200,000			£200,000	Siemens risk
New	Value engineer finishes on EPV and other structures	Structures		£170,000	Subject to approval by NEL/CEC
	NEW VE INITIATIVES TOTAL		£0	£2,880,000	
	TOTAL			13,735,006	

tie additions as prov sums or into BBS bid

Risk Allocation

350,000

500,000

200,000

250,000

100,000

1,100,000

4,000,000

CEC Deliverables 6.1

Item	Opportunity	Filter	Proposal Origin	Cost of Project Element	Work Stream affected	Current Status	Collated Summary		Anticipated Degree of Success		Cautious View	Contract Change Notice Ref	General Comments (from 29.8.7) (SB 11.10.7 comments) Latest comments in red.
							BBS	Category	BBS				
									%age	£			Requires action
SUMMARY (Columns 1 & 2)				BBS - Target	Degree of Confidence	BBS - Confidence Level	Oct Commercial Report			BBS			
Infraco													
	Banked & Confirmed - Cat 1 (in base bids)			£0	#DIV/0!	£0			#DIV/0!	£0	£0		
	Banked - Cat 2 (confirmed by stakeholders/TEL)			£0	#DIV/0!	£0	3,077,480		#DIV/0!	£0	£0		
	Post Preferred Bidder - Cat 3			£500,000	0%	£0	6,938,567		0%	£0	£0		
	Post Preferred Bidder - Cat 4 (Oct - Dec 2007)			£0	#DIV/0!	£0	9,650,000		#DIV/0!	£0	£0		
	Sub Total			£500,000	0%	£0	19,666,047		0%	£0	£0		
Non Infraco													
	Banked - Cat 5			£3,278,600	42%	£1,363,000	2,755,600		42%	£1,363,000	£0		
	Furtherwork - Cat 6			£9,085,000	35%	£3,197,000	7,530,500		35%	£3,197,000	£0		
	Sub Total			£12,363,600	37%	£4,560,000	10,286,100		37%	£4,560,000	£0		
	Overall Total			£12,863,600	35%	£4,560,000	29,952,147		35%	£4,560,000	£0		
OVERALL TOTALS							£12,863,600			£4,560,000	£0		
HIGHWAYS													
36a	Material recovery and reprocessing - MUDFA 2 options - reconstituted planings & Type 1R	Highways				Mudfa	OPEN	£150,000	6	80%	120,000		SB - use Sign Off sheet estimate £150k
36b	Material recovery and reprocessing - INFRACO 2 options - reconstituted planings & Type 1R					INFRACO	OPEN			0%	0		20.11.7 BBS to firm up figures
37	Reduction in extent of road reinstatement. Premis that base course/road base material used in lieu of wearing course until properly reinstated under INFRACO MUDFA temporary reinstatements	Highways	Project	£5,210,041		MUDFA	OPEN	£145,000	6	80%	116,000		MUDFA Team assessment of opportunity £145,000
HIGHWAYS TOTAL							OPEN	£295,000		80%	£236,000		
LAND & PROPERTY													
							OPEN						

Item	Opportunity	Filter	Proposal Origin	Cost of Project Element	Work Stream affected	Current Status	Collated Summary		Anticipated Degree of Success		Cautious View	Contract Change Notice Ref	General Comments (from 29.8.7) (SB 11.10.7 comments) Latest comments in red.
							BBS	Category	BBS				
136	Land & Property - specific plots of land that may no longer be required	Land & property	Project		Land & Property	OPEN	£0	5	0%	0			20.11.7 £340k saving already included in current project estimate under L&P.
	LAND & PROPERTY TOTAL					OPEN	£0		#DIV/0!	£0			
	NETWORK RAIL					OPEN							
42	NR Immunisation - ETN only to pay for Direct Current immunisation (£3.5m)	NR	Project - 7.2.4		Infraco	OPEN	£5,000,000	6	0%	0			Nico Decker Report confirms likely saving £3.5-4.0m. Next steps to identify cost impact for each bidder before sign up. Target Date Mon 1st Oct. SB to lead with GG input. Refer to SB VE sheet for comments - NOW IN INFRACO BID AND NORMALISATIONS
	NETWORK RAIL TOTAL					OPEN	£5,000,000		0%	£0			
	SYSTEM WIDE					OPEN							
161	Savings to capex of E&M infrastructure and trams through a finance lease.				Infraco	OPEN	£3,290,000	6	90%	2,961,000			This would be achieved via a defeased tax structure, not a funded lease. Savings value quoted by two potential arrangers are between 3-5%, though commercial value would need to be negotiated with lessor. Also requires analysis of asset type. Either a Fre
	SYSTEM WIDE TOTAL					OPEN	£3,290,000		90%	£2,961,000			
	THIRD PARTY					OPEN							
90a	Murrayfield Pitch Relocation - Flood prevention scheme	Third Party	Project	£3,355,000	Infraco	OPEN	£1,915,600	5	0%	0			From Infraco Normalisation item 9 (in part) - NOW OMITTED FROM NORMALISATIONS
90b	Murrayfield Pitch Relocation - mods only to Waranders Club House	Third Party	Project		Infraco	OPEN	£500,000	6	0%	0			From Infraco Normalisation item 9 (in part) Remaining allowance in Normalisation Item 9 required to meet temporary pitch move commitment to SRU. L. Murphy to confirm if this scope will be required.
	THIRD PARTY TOTAL					OPEN	£2,415,600		0%	£0			
	TRACTION POWER					OPEN							

CEC Deliverables 6.1

Item	Opportunity	Filter	Proposal Origin	Cost of Project Element	Work Stream affected	Current Status	Collated Summary		Anticipated Degree of Success		Cautious View	Contract Change Notice Ref	General Comments (from 29.8.7) (SB 11.10.7 comments) Latest comments in red.	
							BBS	Category	BBS					
104	Network Reinforcement - not to be paid for by ETN	Traction Power	Project - 31.1.16		Infraco	OPEN	£1,363,000	5	100%	1,363,000			Sign Off Sheet has £2.2m achieved & £2.45m estimate Letter gone to SP asking confirmation of Tram liability in £s. Will be concluded at end of Oct. Latest figures based on SP verbal w/c 12/11	
TRACTION POWER TOTAL							OPEN	£1,363,000		100%	£1,363,000			
TRAMS							OPEN							
119	Reduce fleet size - delete 1 tram from spare capacity and accept risk to lower performance	Trams	Project - 5.1.17		Tramco	OPEN	£500,000	3	0%	0				
TRAMS TOTAL							OPEN	£500,000		0%	£0			
OVERALL TOTALS							OPEN	£12,863,600		35%	£4,560,000			

NOTE: Financial Impact calculated on average Max/Min impact multiplied by the probability of success



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Our reference

AF/EDIDP/310299/15/
18260346.1

18 March 2008

Dear Ms Lindsay,

**EDINBURGH TRAM NETWORK ("ETN")
DRAFT CONTRACT SUITE AS AT 13 MARCH 2008**

We write to update you on our report yesterday. In our letter, we commented on three areas where we identified the need for further evidence that **tie** has advanced its negotiation with the BBS Consortium to a stage consistent with level of stability and clarity we would expect the ETN contract documentation suite to have reached at notification of intent to award. As you are aware, there have been intensive discussions on all aspects of this matter during the last week.

1. CORE INFRACO AND TRAMCO CONTRACT TERMS

There has been measured progress in closing out the core provisions, despite extreme time pressure and interruption for detailed commercial discussion. **tie** has achieved a level of closure and agreement which will support the notification of intent to award letters being dispatched today.

2. EMPLOYERS REQUIREMENTS

We reported yesterday that work was outstanding in relation to this key contract schedule. We are instructed by **tie** that both SDS Provider and BBS Consortium are content that the document is now in acceptable form and detail to be used as a contractual scope. Our reservations as to risk emanating from the Employers' Requirements because of deficiency in precision, clarity and link with the core contract provisions have moved now to a level where we do not consider this an obstacle any longer to **tie** committing to a contract award by end of March.

3. FURTHER TASKS

tie has also indicated to us that receipt of the final Infraco Proposals, an agreed project master programme and the execution of the Network Rail APA are all confirmed.

Regulated by the Law Society of Scotland.

A limited liability partnership registered in Scotland (number 300365) which is a law firm and part of DLA Piper, a global organisation

A list of members is open for inspection at its registered office and principal place of business, Collins House, Rutland Square, Edinburgh, EH1 2AA and at the address at the top of this letter. Partner denotes member of a limited liability partnership.

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INVESTOR IN PEOPLE

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We are instructed that the agreed treatment of NR immunisation has been completed and base line scope, price and programme is agreed for Phase 1b and the mechanism for adjustment on exercise of this option will be included in the relevant Infraco Contract Schedule. We understand that **tie** will confirm settled pricing for all major fixed price elements of the Infraco Contract. If **tie** has achieved these objections and BBS has been able to confirm its commitment to abide by these positions, **tie** should have every confidence in closing the contract suite efficiently, commencing with the issue of notification of intention to award today. We would stress that full cooperation of the BBS Consortium on this objective is essential.

4.

Four days of difficult negotiations surrounding the nature of the contractual indemnities provided by BBS Consortium and their interrelationship with the OCIP insurance **tie** has purchased took place after the BBS Consortium unexpectedly raised an entirely new issue regarding their corporate policy not to accept any liability with regard to uninsured third party economic consequential loss.

We have briefed you regarding the detailed contractual provisions to which BBS had already committed and why this was a totally unexpected position, seemingly adopted by Siemens (Germany), obliging Bilfinger Berger to follow suit.

The outcome as regards the commercial position, risk allocation and insurance cover has, we believe, now been adequately analysed and explained to us and to yourself by **tie** and their insurance broker. These matters are ones of fact and risk projection, as opposed to fundamental legal or contractual issues.

The net effect with the draft Infraco Contract provisions is that:

- subject to bullet 2 below, a clause will require adding to state that BBS will not be liable for uninsured consequential economic loss arising from third party claims. This is of course an adjustment to BBS previous preferred bidder position.
- a clause will require adding to set out the final commercial arrangement settled by **tie** (we expect today) regarding BBS's provision of a risk reserve available to **tie** should any third party liability for economic loss eventuate which is not insured under OCIP. This is beneficial commercially to **tie**/CEC.
- a clause will require adding to clarify that BBS will not be liable for any claims which arise as an unavoidable consequence of the Infraco Works (where BBS are in full compliance with their obligations). Here, insurance will protect **tie**/CEC interests, as will the statutory powers under the Tram Acts. This is not a change to the previous contractual position.

5. **PROCUREMENT RISK**

We explained our views on procurement risk in section 10 of our earlier letter. The document provided to us by **tie** (referred to in section 10 of our letter) has been updated by the **tie** Project Director. We have examined this and its explanation on how specifically the BBS Consortium price has moved since preferred bidder appointment. **tie** has a detailed and cogent story and this is an important piece of **tie**'s armour against challenge. It will undoubtedly be tested by Tramlines in their requested debrief session. Presented carefully, **tie**'s explanation should reduce the risk of the losing Infracore bidder sensing any weakness to exploit. We understand from **tie** the losing tram supplier bidder was by some distance more expensive, so that CAF's selection and confirmation as winning party can be robustly justified on pricing grounds alone.

In the round, we do not consider that the issues referred to in 4 above materially alter analysis of procurement risk, though the adjustment is to accommodate BBS's position. The losing preferred bidder approached third party liability issues with similar caution and both stances are conditioned by contractor experience (real and anecdotal) on other operational UK tram schemes.

Yours faithfully

A handwritten signature in black ink that reads 'DLA Piper Scotland'.

DLA PIPER SCOTLAND LLP

cc Graeme Bissett, **tie** Limited Strategic Planning Director

DRAFT

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18260346.1

14 March 2008

DRAFT

Dear Ms Lindsay,

EDINBURGH TRAM NETWORK ("ETN")

DRAFT CONTRACT SUITE AS AT 13 MARCH 2008

We write to update you on our report dated 12 March 2008. In our letter, we commented on three areas where we identified the need for further evidence that **tie** has advanced its negotiation with the BBS Consortium to a stage consistent with level of stability and clarity we would expect the ETN contract documentation suite to have reached at notification of intent to award.

1. CORE INFRACO AND TRAMCO CONTRACT TERMS

There has been good and measured progress since our report was submitted to you in closing out the core provisions. **Tie** has achieved a level of closure and agreement which will support the notification of contract award letters being dispatched.

2. EMPLOYERS REQUIREMENTS

We reported on 12 March that work was outstanding in relation to this key contract schedule. We are instructed by **tie** that both SDS Provider and BBS Consortium are content that the document is now in acceptable form and detail to be used as a contractual scope. Our reservations as to risk emanating from the Employers' Requirements because of deficiency in precision, clarity and link with the core contract provisions have moved now to a level where this is no longer obstacle to committing to a contract award in 10 days' time.

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INVESTOR IN PEOPLE

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3. FURTHER TASKS

Tie has also indicated to us that receipt of the final Infraco Proposals, a master programme and the execution of the Network Rail APA are all confirmed.

We are instructed that the agreed treatment of NR immunisation has been completed and scope definition included for Phase 1b by **tie** and we understand that **tie** will confirm settled pricing for all major fixed price elements of the Infraco Contract. If **tie** has achieved these objectives and BBS has been able to confirm its commitment to abide by these positions, **tie** should have every confidence in closing the contract suite efficiently, commencing with the issue of notification of intention to award today.

4. PROCUREMENT RISK

We explained our views on procurement risk in section 10 of our letter yesterday. The document provided to us by **tie** (referred to in section 10 of our letter) has been updated today. We have examined this and its explanation on how the BBS Consortium price has moved since preferred bidder appointment. **Tie** has a detailed and cogent story and this is an important piece of **tie's** armour against challenge. It will be tested by Tramlines in their requested debrief session. Presented carefully, **tie's** explanation should reduce the risk of the losing bidder sensing any weakness to exploit. We understand the losing tram supplier bidder was by some distance more expensive, so that CAF's selection and confirmation as winning party can be robustly justified on pricing grounds.

Yours faithfully

DLA PIPER SCOTLAND LLP

cc Graeme Bissett, **tie** Limited Strategic Planning Director



ER Alignment Status

The Employers Requirements (ERs) are a comprehensive and detailed set of specifications which set out the project obligations and responsibilities against which BBS must comply. It runs to some 650 pages and sits as a schedule within the Infraco contract. The document has evolved as the business case and design has been developed and reflects the inputs of the key 'user' stakeholders such as the Council, TEL and Transdev.

The document contains sections relating to how the project as a whole is to be delivered (for example project management, testing and commissioning and maintenance) as well the detailed systems and equipment requirements. The document was issued as part of the ITN package. Because it is essentially a procurement specification, wherever possible (and appropriate) **tie** have avoided being prescriptive and detailed because this would limit the freedom of bidders to propose their own specific, competitive solutions.

Since preferred bidder award, all of the ER terms have been reviewed in a three way technical alignment process:

- **BBS proposal** → **ERs**. To ensure that BBS proposals comply with the ERs. This has involved removing all of the stated non-compliances noted at the preferred bidder stage by either relaxing the ER clause (without affecting the output requirements) or by updating the proposal to make it compliant. Commercial alignment of the ERs and the Infraco proposals has already been reached and an additional sum of money included in the final price negotiated with Infraco
- **SDS design** → **ERs**. Because the SDS Design has responded to an up to date though not final draft of the ERs, **tie** is confident that the majority of the design will be aligned with the final form of the ERs. However, any potential mis-alignment with the final form must be analysed, documented and assessed for its cost and programme implications. This relates mostly to the civils' sections of the ERs and areas where there are interfaces (**tie** is satisfied that the systems design and requirements are closely aligned based on previous alignment work and the lack of systems changes in the final version of the ERs). A detailed programme has been agreed



with SDS to achieve this with a finalisation date of 21 March, well within the timescale to Financial Close. Where technical issues are identified, either the ERs will be amended, or SDS design requirements will be changed through appropriate instructions. In both cases, the integrity of the ERs will be maintained. This decision-making process is under the control of tie / CEC and tie does not anticipate that significant mis-alignment will emerge.

- **Proposal → SDS design.** To ensure that in areas where the ER terms allow flexibility in approach, that the BBS proposed solution is consistent with the SDS design. A review of the SDS Design against the E&M Proposals has been undertaken. In the few cases where inconsistencies have been found, either the BBS proposal has been changed or SDS has been instructed to accordingly. A review of the final Proposals against the SDS design is underway. Other than the differences at the key E&M interfaces and the extent of full road reinstatement in the civils Proposal no significant differences are expected. The differences at E&M interfaces will be dealt with via minor design amendments and provision has been made in the Project Risk Allowance for the difference in extent of full road reinstatement. This alignment is also being addressed under the arrangements agreed for alignment between design and ERs as explained in the previous paragraph.

In addition to these processes the ERs have also been reviewed in varying degrees of detail by three legal teams, DLA, BBS' lawyers and Siemens lawyers (because a far larger part of the ERs relate to Siemens scope). In these cases the ERs were checked for consistency and alignment with the contract suite. All evident ambiguities, duplications and gaps are being dealt with to ensure that as a vital contract document it can be used effectively in the future.

The **tie** team is confident that the extent of mis-alignment in the current form of the documents is very limited. The final version of the ERs, the contract version, which will be documented once the final alignment review is complete, will fully meet the requirements of the client, i.e. is consistent with the technical principles of final business case; and is consistent with both the SDS design and BBS proposals.



Alignment of QRA and Risk Allowance to DLA Letter and Risk Matrices

This note confirms that **tie** has considered the letter from DLA to the Council Solicitor dated 12th March and appended risk allocation matrices and considers that the Risk Allowance of £33.2m contained in the projected Control Budget at Financial Close and associated QRA adequately reflects the risks identified and the change in such risks retained by the public sector since approval of the FBC in December 2007.

The following references are to specific paragraphs/sections in the DLA letter:

5.1 Employers Requirements (ERs) – Alignment issues

There is a well understood and limited level of uncertainty with regard to the alignment of the ERs, the SDS design and the Infraco proposals (on which their price is based). In terms of the possible impact on costs:

- Commercial alignment of the ERs and the Infraco proposals has already been reached and an additional sum of money included in the final price negotiated with Infraco
- SDS have already undertaken a review of the draft ERs against their designs and instructions issued in respect of how the identified mis-alignments are to be resolved. This has not resulted in any material change to price or programme. SDS have been instructed to undertake a review of the final ERs against their designs which will be concluded prior to Financial Close and is not expected to identify any significant issues. Any additional design costs will not be significant in the context of the overall capital costs
- An exercise is underway to precisely document the areas where there is misalignment between the BBS proposals and the SDS design – alteration of the design to fit the proposals will be the preferred outcome. However **tie** management has already identified the extent of full road reinstatement as the most significant area of difference. Accordingly possible additional construction costs of £2m have been assessed as a sensible provision and included the Risk Allowance over and above the QRA total.

5.2 Project Master Programme

The Project Master Programme which will form part of the Infraco contract is now agreed in all material respects.

As above – the consideration of alignment issues is being conducted with a very careful eye on the possible consequences on the Project Master Programme, particularly in areas where there may be a consequential change to design which impacts upon consents or approvals which are on the critical path.

The QRA provides an amount of £6.6m (equivalent to 2-3 months complete delay in the programme for general delay risk which has been assessed by tie management as adequate for the management of the programme but will not provide for any significant stakeholder initiated change beyond the point of Financial Close.

6.4 EAL – Option to shift tramway post 1/1/13

The capital cost of any shift in the Tramway at the airport beyond 1/1/13 would be at the expense of BAA and is not therefore a risk which should be provided for in the Phase 1a budget.

7.1 Consents – Delay on post-close consents

This is the one significant change in the risk profile retained by the public sector since December. The exact nature of tie/CEC's continuing risks have been well rehearsed and are detailed in Appendix 1 to the close report as are the mitigating actions and processes tie has in place to manage these risks. A risk assessment in relation to the QRA is provided at section 8.4 of the close report.

The total risk allowance provided in the QRA in respect of continuing Consents and Approvals Risk is £3.3m. This equates to the cost of some 3 months of BBS standing time and is considered adequate by tie management in the context of the number and criticality of consents still to be delivered, the liquidated damages available to BBS from SDS in the event the delay is caused by SDS, the responsibility of BBS to mitigate the costs of any delay and the close management of the process beyond Financial Close by tie.

tie Limited 13/3/07



**Parsons
Brinckerhoff**

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Our Ref: ULE90130-SW-LET-00937

Your Ref:

5th February 2008

tie Limited
CityPoint
65 Haymarket Terrace
Edinburgh
EH12 5HD

Attention: Damian Sharp

Dear Sir

Tram DKE

Further to my conversation yesterday with David Crawley, SDS understands that CAF has confirmed that its offered tram's DKE fits within the assumed tram DKE.

SDS confirms that its design is in accordance with 'Assumed Design Tram Vehicle' as defined in the SDS report 'Assumed Design Tram Vehicle' (ULE90130-SW-REP-00010) and the 'Assumed Design Tram Vehicle Developed Kinematic Envelope' (ULE90130-SW-DRG-00038); and clearances as per 'Railway safety Publication 2 Guidance On tramways' by the ORR.

Yours faithfully



Jason Chandler
Parsons Brinckerhoff

Over a Century of
Engineering Excellence

In association with Halcrow
Corderoy, Ian White Associates
Quill Power Communications, SDG

Parsons Brinckerhoff Ltd
Registered in England and Wales
No. 2554514. Registered Office:
Amber Court, William Armstrong Drive
Newcastle upon Tyne NE4 7YQ

CEC01244182_0502

Alastair Richards

TIE

City Point, 65 Haymarket Terrace

EH12 5HD - Edinburgh - Scotland

Beasain, 29th of February 2008



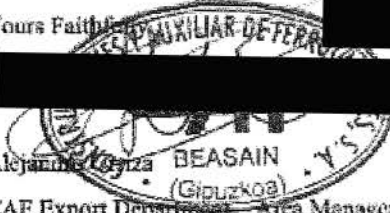
By the means of the letter CAF wants to give an answer to the DKE issue that recently arose as a mayor problem. It is important to recall that CAF were know by tie a long time ago while some of the basic documents to clarify this issue were only recently released to CAF.



Please our answer in detailed the documents enclosed, and listed below, with this letter:

- ☐ **ETN Track Spacing vs CAF DKE – Main document**
 - ☐ Clearance verification - Edinburgh Tram CAF DKE analysis
 - ☐ Summary of Updates for Edinburgh Tram CAF DKE analysis
 - ☐ Track Tolerances for DKE Calc 070618a
 - ☐ UKPB1-#24020-v2-Track_Alignment_Criteria
 - ☐ ULE90130-SW-REP-00010_V3_Edinburgh_ADTV_DKE
 - ☐ Q.22.00.291_Stepping_distance
 - ☐ Q.22.93.105_CAF_DKE_22.01.2008
 - ☐ TYPICAL_TRAMWAY_CROSS_SECTIONS_SHEET_1_OF_8_PDF
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The outcome of the analysis made by CAF is that our Trams meet the DKE parameters mentioned in the Track Alignment Criteria document (ULE90130-SW-SPN-00001 v2).

Yours Faithfully




Alejandra Goiza BEASAIN
(GIDUZKOB)
CAF Export Department – Area Manager

	ETN Track spacing compatibility vs CAF DKE	
	EDINBURGH TRAMS	

Confirmation of designed track spacing compatibility against Edinburgh Tram CAF vehicle DKE



Scope

Tie has requested recently a review of the Edinburgh Tram CAF vehicle DKE, in order to check its compatibility with the design of track spacing and other parameters from the infrastructure of the ETN system which affect to the dynamics of the vehicle on track.

CAF has produced some information to clarify this situation and this has been submitted to **tie** during the final stages of the tendering process. This document is prepared with the aim of summarising with accuracy all the information and references used, the targets of the study and the calculations produced for the demonstration of compatibility between track spacing definition and the DKE of the vehicle proposed by CAF for the ETN.

1. Information from **tie** used by CAF for DKE analysis

- Track Construction and Maintenance Tolerances for use in Calculation of DKE for Initial Comparison Purposes (document ref Track Tolerances for DKE Calc 070618a.doc, attached). This document shows relevant information as rail sidewear, horizontal alignment, etc. not covered in any other document, as the Employers Requirements document.
- Maximum cant and cant deficiency values taken from ER version 3.2 (issued on 16.01.2008). These values correspond to those shown in ETN Track Alignment Criteria issued on 23.02.2007 (document ref ULE90130-SW-SPN-00001 V2, attached)
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 - ER version 3.2 (issued on 16.01.2008):
 - Track spacing Plus allowance for DKE Double track main line – track centres – side poles Subject to Tram - 3150mm. (No information neither about whether this applies to straight or curves, nor about evolution of track spacing with reduced radius curves)
 - Track spacing Plus allowance for DKE Double track main line – track centres – centre poles Subject to Tram - 3650mm. (No information neither about whether this applies to straight or curves, nor about evolution of track spacing with reduced radius curves)

	ETN Track spacing compatibility vs CAF DKE	
	EDINBURGH TRAMS	

ETN Track Alignment Criteria (issued on 23.02.2007 - document ref ULE90130-SW-SPN-00001 V2):

- Track spacing Double track main line – track centres – side poles 3100mm. Separations appropriate for tangent track and curves of radii greater than 450m. (No information about evolution of track spacing with reduced radius curves)
- Track spacing Double track main line – track centres – centre poles 3600mm. Separations appropriate for tangent track and curves of radii greater than 450m. (No information about evolution of track spacing with reduced radius curves)

Typical Tramway Cross Sections (i.e. drawings ref ULE90130-SW-DRG-00031 rev 6 and ref ULE90130-SW-DRG-00032 rev 6, both dated on 23.03.2006, attached):



- Track spacing Double track main line – track centres – side poles 3100mm. Separation applicable to Horizontal radii of 350m or above including straight track. This dimension will increase for curved alignments (refer to tables included in the Assumed Design Tram Vehicle report) with consequential increase in the overall tramway width.
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Note: ADTV Report previously referred and used by CAF is ETN Assumed Design Tram Vehicle (issued on 15.03.2006 - document ref ULE90130-SW-SPN-00010 V3, attached)

CAF has worked with the information reflected in the Typical Tramway Cross Sections as per above paragraph, as this is the most restrictive and comprehensive definition of Track Spacing.

2. Objectives

- To accomplish with the ORR RSPG Part 2 Section G 'Guidance on Tramways' (Nov 2006), Point 3 Tramway Clearances, Clearances between Trams, paragraph 110:

	ETN Track spacing compatibility vs CAF DKE		
	EDINBURGH TRAMS		

110 The clearances between the DKEs of two adjacent trams should be not less than:

- (a) without centre traction poles - 100 mm;
- (b) with traction poles between the two DKEs - 600 mm (but at least 100 mm from the face of the nearest side of a pole to each DKE).

Note: These clearances are minimum clearances up to 2100 mm above ground level. At heights above 2100 mm, reduced clearances may be acceptable.

- Comply with the RVAR 1998 Guidance, Regulation 23 – Boarding devices, in order not to require a boarding device in Wheelchair compatible doorways:

Regulation 23 - Boarding devices

23(1) When a wheelchair-compatible doorway in a regulated rail vehicle is open at a platform at a station or a tram stop a boarding device must be fitted between that doorway and the platform or stop if a disabled person in a wheelchair wishes to use that doorway, unless the gap between the edge of the door sill of that doorway and the edge of the platform or stop is not more than 75 millimetres measured horizontally and not more than 50 millimetres measured vertically.

And trying to follow the recommendation from RSPG 2G, Point 5 Tramstops, Platform Clearances, paragraph 162



162 Horizontal clearance between platforms and door thresholds must not exceed 75 mm at doors which are intended to be used by mobility-impaired passengers.12

Note 1: The dimension of 75 mm is the maximum that must be maintained over the life of the system and it is recommended that at installation a figure of 40 mm is achieved to help ensure compliance with the Rail Vehicle Accessibility Regulations 199812 over the life of the system.

3. Reported information generated by CAF to provide adequacy to the Objectives (2), according to the Information (1) available

- Stepping Distance CAF drawing ref Q.22.00.291 (attached); where a door sill of 65 mm (aluminium extrusion of 50mm + rubber end of 15mm) is proposed, together with a Platform to Track centre distance of 1440mm (at 300mm height).

This arrangement, in nominal (tare, no wear/tolerances) conditions, provides a gap of just 50mm in horizontal and vertical directions, while protects from any chance of contact between door leaf and platform when opening doors, and allows for reduced speed circulation through stops.

	ETN Track spacing compatibility vs CAF DKE		
	EDINBURGH TRAMS		

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As a result of this, for any curve radius (and straight) it is demonstrated that more than 100mm of clearance exists at a height up to 2100mm between DKEs of trams crossing in track sections without centre traction poles, while slightly reduced clearances for higher positions (rearview cameras) are obtained, judged as acceptable as per the RSPG 2G Guidance. No possibility of physical contact exists at any point in these conditions.

The same rationales and comment applies for clearances between DKEs of trams crossing in track sections with centre traction poles, where values greater than 600mm are found (again for heights up to 2100mm, slightly reduced for higher positions). No possibility of physical contact exists at any point in these conditions.



**Parsons
Brinckerhoff**

Edinburgh Tram Project Design Office
CityPoint, 1st Floor
65 Haymarket Terrace
Edinburgh EH12 5HD
United Kingdom
44-(0)131-623-8600
Fax: 44-(0)131-623-8601

Our Ref: ULE90130-SW-LET-00937

Your Ref:

5th February 2008

the Limited
CityPoint
65 Haymarket Terrace
Edinburgh
EH12 5HD

Attention: Damian Sharp

Dear Sir

Tram DKE

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CEC01244182_0508



Alastair Richards

TIE

City Point, 65 Haymarket Terrace

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Beasain, 29th of February 2008

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Andy Conway

From: Stewart McGarrity [Stewart.McGarrity@tie.ltd.uk]
Sent: 10 March 2008 18:11
To: Rebecca Andrew
Cc: Duncan Fraser; Alan Coyle; Colin MacKenzie; Susan Clark; Mark Hamill
Subject: RE: Risk Briefing - PRIVATE & CONFIDENTIAL

PRIVATE & CONFIDENTIAL

Rebecca,

See my answers to the follow up matters below. Give me a call with any questions.

Regards

Stewart

Stewart McGarrity
 Finance Director

tie Limited, Citypoint
 65 Haymarket Terrace
 Edinburgh EH12 5HD

Tel: [REDACTED]
 Mobile: [REDACTED]

www.tramsforedinburgh.com
www.tie.ltd.uk

From: Rebecca Andrew [mailto:Rebecca.Andrew@edinburgh.gov.uk]
Sent: 04 March 2008 17:43
To: Stewart McGarrity; Mark Hamill
Cc: Duncan Fraser - CEC; Alan Coyle; Colin MacKenzie; Susan Clark
Subject: Risk Briefing

Stewart/Mark,

Thank you for spending the time to go over the updated QRA with us today. In view of pressure you are under to conclude the negotiations, we are very grateful for your time on this one.

From my notes, you agreed to undertake the following actions, which should give us all the information we need and close off this item in the CEC approvals matrix.

1) Black Flag risks - A note of the cost to close down the project either (i) pre close and (ii) post close. We are not expecting you to go to too much effort here - just your best estimate based on your knowledge of the project. We appreciate that black flag risks are meaningless in terms of the QRA calculation, but are important in assessing potential cost to the Council.

I've consulted with colleagues and a best estimate of close out would be as follows:

	Pre-close	Post-close
Phase 1a	101,685,320	129,720,313
Phase 1b	3,010,293	3,010,293
Advance Material Purchases	0	24,200,000
Spent/certified	104,695,613	156,930,606

21/07/2008

CEC01244182_0514

<u>Close out in addition to spent and certified</u>		
Closing MUDFA (including reinstatement)	10,000,000	10,000,000
Closing Infraco/Tramco/SDS	10,000,000	
3 mths tie Running Costs + 3mths to close out	10,000,000	10,000,000
Resale of land	-5,000,000	-5,000,000
	<hr/>	<hr/>
Total spend and outstanding commitments	129,695,613	171,930,606

Pre-award we have spent £105m so far and we might expect that it would cost a further £30m to close out if we closed the project (and tie) tomorrow less some credit for the resale of land.

In the period soon after close (say April) we would have spent or certified £157m including the initial milestone payments under Infraco and Tramco totalling £45m. I have assumed the loss on closing out Infraco would be broadly equivalent to the amounts or the initial milestone payments (i.e. that we would get nothing back on the £45m or so which becomes certifiable at award).

Closing down Infraco when they are fully mobilised (e.g. in June) would be another step up again by that stage our spent/certified to date will be over the £170m mark and the cost to close outstanding commitments at that date could well be in excess of £30m and a huge court case to boot.

2) A note on the risks of delaying contract signature versus the risks of signing the contracts if any of the items in the matrix are not resolved (I appreciate that tie is aiming to close out most of these over the next week, but we need to deal with the eventuality that some may not be resolved in full). This can be included in the close report, if necessary.

We believe that assuming the SDS novation gets agreed this week and the NR agreements are signed up then the only significant additional public sector risk compared to December is the delay in post close SDS design delivery. This would only go away if we waited for the design to complete which would in say September. Six months inflation on the programme would cost £15m to £20m alone. More likely is that either BBS or the TS funding or both would walk away and we'd have no project.

3) Re-run the QRA at contract award

Finally, we were reassured by your statement that the current level of the risk allowance (approximately £30m) as determined by QRA was sufficient, based on your knowledge of the project and considerable experience of other major projects. Could a similar statement be added to the the close report when the final QRA is run?

The QRA we showed you last week (totalling £28m) still stands in light of the final risk allocation position - as you would expect as we prepared that QRA anticipating the risk allocation position at close and which is being confirmed by the matrices and DLA letter. We have added some other items to the QRA to arrive at a final Risk Allowance of £32m - will share those numbers with you tomorrow.

Thanks again for your help. Please do not hesitate to contact us if you need further clarification of these requirements.

Kind regards,

Rebecca

Rebecca Andrew | Principal Finance Manager | Financial Services | The City of Edinburgh Council | Waverley Court, Level 2:5, 4 East Market Street, Edinburgh, EH8 8BG | Tel [REDACTED] | rebecca.andrew@edinburgh.gov.uk | www.edinburgh.gov.uk

21/07/2008

CEC01244182_0515

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EDINBURGH TRAM PROJECT - PHASE 1A

CEC Deliverables 6.1

VALUE ENGINEERING TAKEN INTO BBS BID

REF	ITEM	FILTER	VALUE		Key Qualifications
			Target	Agreed BBS position	
	BUILDINGS				
	BUILDINGS TOTAL		£0	£0	
	DEPOT				
8	Delete depot pumping station/storm tanks by utilising existing gravity system.	Depot	£193,526	£193,526	tie's carries specification/acceptance risk and cost of additional pump
9	Depot - Build part now with provision to expand in the future/reduce size of car park facilities	Depot	£230,000	£230,000	tie's carries specification/acceptance risk
14	Delete under floor lift plant and utilise mobile jacks. Incl mobile future proofing.	Depot	£250,000	£250,000	tie's carries specification/acceptance risk
16	Depot - delet split vehicle accommodation system - requirement dependant on tram vehicle selection	Depot	£27,500	£27,500	tie's carries specification/acceptance risk
17	Depot - Track Maintenance Equipment - rationalise scope requirement and consider renting.	Depot	£27,500	£27,500	tie's carries specification/acceptance risk
20	Depot - deletion of one pavement (inner) .	Depot	£36,000	£36,000	tie's carries specification/acceptance risk
24	Depot - delete requirement for concrete apron to security fence	Depot	£6,080	£6,080	tie's carries specification/acceptance risk
129	Depot - delete compressed air system, utilise 1 or 2 local /mobile compressors	Depot	£54,400	£54,400	tie's carries specification/acceptance risk
145	Consolidated VE items 7, 10, 11, 19 which results from changes to initial Depot design driven by proximity to BAA runway and EARL decision.	Depot	£3,181,264	2,000,000	DTC but compliant with current technical /design info. Subsequent saving of £200,000 added see below.
New	Delete standby generator and substitute with hardstanding and power connection for portable generator.	Depot	£250,000	150,000	tie's carries specification/acceptance risk
	DEPOT TOTAL		£4,256,270	£2,975,006	
	HIGHWAYS				
36b	Material recovery and reprocessing (Infracore); 2 options - reconstituted planings & Type 1R	Highways	£500,000	£500,000	Subject to confirmation from SDS; level of saving subject to adjustment of quantity of this item based on the final design
152	Reduce Kerb and associated re-instatement of pavement	Highways	£100,000	£100,000	Subject to confirmation from SDS; level of saving subject to adjustment of quantity of this item based on the final design
153	Reduce drainage run from guideway	Highways	£100,000	£100,000	Subject to confirmation from SDS; level of saving subject to adjustment of quantity of this item based on the final design
	HIGHWAYS TOTAL		£700,000	£700,000	

tie additions as prov sums or into BBS bid

Risk Allocation

100,000

250,000

50,000

50,000

EDINBURGH TRAM PROJECT - PHASE 1A

CEC Deliverables 6.1

VALUE ENGINEERING TAKEN INTO BBS BID

REF	ITEM	FILTER	VALUE	VALUE	Key Qualifications
NETWORK RAIL					
42	NR Immunisation - ensure design of immunisation is based on minimum safe propagation distance (e.g. <100m). Project budget previously very conservative.	NR	£4,700,000	0	Terms remain as BBS letter; particularly that tie carries NR cost risk
NETWORK RAIL TOTAL			£4,700,000	£0	
OLE					
49	Overhead Contact system - Switchgear - rationalise specification - considered "quite onerous"	OLE	£336,000	150,000	Siemens commitment related to non specific items
135	OLE - Catenary opportunity in Sections 5 to 7 - replace trolley wire with catenary on segregated sections.	OLE		0	No net savings. All in price. Assumes fully compliant with planning and technical requirements but excludes tapered poles.
149	Provision of combined incoming and return cabinet.	OLE	£42,000	0	tie proven to be incompatible with SP feeder arrangements.
OLE TOTAL			£378,000	£150,000	
STRUCTURES					
54	Value Engineering/ de-risked pricing approach developed for the final designs for all structures, particularly substructures and foundations (where not covered below)	Structures	£2,000,000	0	Unable to commit
55	Edinburgh Park Viaduct various savings including use of cross heads to eliminate temp works, steel or concrete beams.		£1,470,000	1,470,000	Subject to approval of design by NEL/ CEC and subject to SDS designing to cost
56	Carricknowe Bridge Parapet - down grade from P6 / P5 to N2 (reduced cost of parapet plus knock on effect on deck design/cost)	Structures	£85,000	85,000	Subject to approval of design by Network Rail
57	A8 Underpass various initiatives	Structures	£850,000	850,000	Subject to being able to design to cost
New	Roseburn Street viaduct various initiatives	Structures	£1,375,000	£1,375,000	Subject to approval by stakeholders - SRU and Network Rail
New	Water of Leith various initiatives	Structures	£150,000	150,000	Subject to being able to design to cost
New	Eight maintenance walkway structures - delete or reduce	Structures	£250,000	250,000	Subject to being able to design to cost; and tie taking approvals risk
New	Russel rd Bridge piling changes	Structures	£100,000	0	Subject to being able to design to cost
154	Class 7 material conversion -	Structures	£300,000	£300,000	Subject to confirmation of SDS agreeing to principle; level of saving subject to adjustment of quantity of fill required by the final design
STRUCTURES TOTAL			£6,580,000	£4,480,000	
SUPERVISORY & COMMS					
65	Signalling & Comms - fewer CCTV cameras . Reduced to 55Nr . (Tramstops 45Nr, Depot 10Nr)	Supervisory & Comms	£100,000	0	

tie additions as prov sums or into BBS bid

1,000,000

Risk Allocation

735,000

765,000

200,000

250,000

EDINBURGH TRAM PROJECT - PHASE 1A

CEC Deliverables 6.1

VALUE ENGINEERING TAKEN INTO BBS BID

REF	ITEM	FILTER	VALUE		Key Qualifications
69	Signalling & Comms - rationalise fibre optic ring. More economic architecture that performs the same function could be employed	Supervisory & Comms	£100,000	0	
73	Signalling & Comms - Current requirement for location and interface of the SCADA and Points controllers etc is unnecessarily complex.	Supervisory & Comms	£50,000	0	
74	Signalling & Comms - rationalise loop quantities by combining some loop functions	Supervisory & Comms	£87,500	0	
75	Signalling & Comms - Remove ambient noise sensing on the passenger announcement system	Supervisory & Comms	£7,000	0	
163	UPS - reduce capacity from 4hrs to 3hrs	Supervisory & Comms	£50,000	0	
165	Reduce nr of Signalised Pedestrian Xings.	Supervisory & Comms	?	0	
SUPERVISORY & COMMS TOTAL			£394,500	£0	
SYSTEM WIDE					
77	Optimise the work site lengths wherever practical to ensure efficient construction outputs	System Wide	£300,000	300,000	Subject to further Programme development with CEC, confirm by 9th January.
80	Accept more disruption over shorter period to maximise efficiency of construction operations -	System Wide	£100,000	100,000	Subject to further Programme development with CEC, confirm by 9th January.
148	Remove spare capacity from OTN (linked to item 69)	System Wide	£180,000	0	
150	Option to lease UPS provision from Supplier rather than purchase	System Wide	£300,000	300,000	Subject to agreement of operator
151	Rationalising spares supplied with the Infraco bid	System Wide	£300,000	300,000	Subject to agreement of operator
160	PM Integration including shared resources and co-location.	System wide	£1,000,000	1,000,000	Subject to BBS /tie agreeing savings in resources and facilitates items from BBS and tie costs
SYSTEM WIDE TOTAL			£2,180,000	£2,000,000	
TRACK FORM					
100	Noise attenuation (outside of Roseburn Corridor) 3,650m of fencing	Trackform	£50,000	50,000	Subject to property owner claims
138	Trackform - changing embedded to ballast rail. Ballasted track adjacent to NwkRail	Trackform	£2,000,000	0	Unlikely to yield savings because of short distance. Plus maintenance implications.
156	Track installation install in strips.	Trackform	£0	0	Unacceptable
164	Reduce ballasted track thickness from 300 to 200mm	Trackform	£300,000	200,000	Design to cost.
TRACK FORM TOTAL			£2,350,000	£250,000	
TRACTION POWER					
103	11Kv Traction Power feeds to sub stations including any network reinforcement required (separate VE 104).	Traction Power	?	0	Defer until SP current phase of negotiations is complete.

tie additions as prov sums or into BBS bid

300,000

EDINBURGH TRAM PROJECT - PHASE 1A

CEC Deliverables 6.1

VALUE ENGINEERING TAKEN INTO BBS BID

REF	ITEM	FILTER	VALUE		Key Qualifications
109	Power supply - Russell Rd TPH - equipment for future upgrade to substation to be supplied when needed i.e. don't supply transformer rectifier now.	Traction Power	?	0	BBS to check equipment included and advise. ASAP
158	Power Supply (up to passenger operation) - possible over allowance in DFBC	Traction Power	£300,000	300,000	Subject to tie demonstrating evidence.
TRACTION POWER TOTAL			£300,000	£300,000	
New	Other unidentified VE items	Other	£1,000,000	£0	Need specifics for BBS commitment therefore zero.
UNIDENTIFIED VE TOTAL			£1,000,000	£0	
NEW INITIATIVES AGREED AFTER MAIN MEETING					
New	Further project management integration over 3 years			£500,000	Joint target
New	SDS design scope economy, variation and reduction			£500,000	Joint target
New	Tramstops, standard finishes to circa 20-30% of stops			£500,000	Joint target
New	Picardy place level flexing - MUDFA savings			£500,000	tie led initiative
New	Picardy place level flexing - construction savings			£500,000	Joint target
NOTE	BB agreement to reduce fixed price £120,000			£0	BB risk
NOTE	Siemens agreement to reduce fixed price on item 49 above by £10,000			£10,000	Siemens risk
NOTE	Siemens agreement to reduce fixed price on item 145 above by £200,000			£200,000	Siemens risk
New	Value engineer finishes on EPV and other structures	Structures		£170,000	Subject to approval by NEL/CEC
NEW VE INITIATIVES TOTAL			£0	£2,880,000	
TOTAL				13,735,006	

tie additions as prov sums or into BBS bid

Risk Allocation

350,000

500,000

200,000

250,000

100,000

1,100,000

4,000,000

Analysis of Inclusions/Exclusions from BBS Fixed Price

Item	Comments
a St Andrew Square and Coates Crescent surface finishes and scope of the works (particularly carriageway reconstruction and setted areas)	As per the SDS drawings prepared up to the 25th november subject to the agreements reached with Duncan in respect of the extent of full depth reconstruction on certain road areas
b Constitution Street surface finishes and extents and scope of works	As per the SDS drawings prepared up to the 25th November subject to the agreements reached with Duncan in respect of the extent of full depth reconstruction. Existing kerbs will be reused where in sound condition. Pavings will be renewed where and to the extent that kerb lines are cut back or extended into the road.
c Tapered OLE poles in the city centre and Waterfront areas	Fabricated tapered poles will be provided
d Combined OLE/Lighting/Traffic Signals	Combined poles are not allowed for and will be a post award variation
e The extents and scope of the work that have been included in the provisional sum for London Road, York Place and Picardy Place (particularly with regard to carriageway reconstruction and surface finishes)	The finishes shown on the drawings used for the approximate estimate from which the provisional sum was derived. These were the drawings produced by Scott Wilson late last year. The allowance for utilities diversions accounts for £3m of the total.
f An update on the position on the potential public realm works at Bernard Street, St Andrew Square and Leith Walk (particularly programme implications if they were instructed)	This is not included in the contract sum. This will need to be dealt with as a post award variation
Specified Exclusions from the Construction Works Price (as per Sch. 4) are:	
a) Utilities diversions (including both the diversion of Utilities and the diversion of any other utilities) and protective works associated with utilities save for the Provisional Sums for those utilities diversions that are to be undertaken by Infraco.	
b) Work in connection with the St Andrew Square public realm project beyond the tram works. For the avoidance of doubt tramstops, trackform, track bed, OHLE, road surface refurbishing, associated systems and link works together with any other work shown on the Base Case Design Information are included.	
c) Ground conditions that require works that could not be reasonably foreseen by an experienced civil engineering contractor based on the ground conditions reports provided to BBS on 20th and 27th of November and 6th December 2007. Additionally the BBS price does not include for dealing with replacement of any materials below the earthworks outline or below ground obstructions/voids, soft material or any contaminated materials.	
d) Bernard Street public realm project as information provided to Infraco on 28th November 2007.	

Schedule 4

PRICING

SCHEDULE FOUR PRICING

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- 1.0 Generally
- 2.0 Definitions used in this Schedule
- 3.0 Construction Works Price
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- 5.0 Value Engineering taken into firm price – but conditional
- 6.0 Further Value Engineering
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Appendices

- A Construction Works Price
- B Provisional Sums and the Mechanism for their Adjustment
- C Value Engineering taken into firm price – but conditional
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- F Schedules of Rates and Quantified Schedules of Rates
- G Process for the agreement of Value of Variations
- H Base Date Design Information
- I Network Rail Immunisation

1.0 GENERALLY

- 1.1 The Infraco Construction Works Price is detailed in Appendix A to this Schedule Part 4.
- 1.2 The Construction Works Price is on a lump sum basis that is fixed until completion of the Infraco Works and not subject to variation except in accordance with the provisions of this Agreement.
- 1.3 This Part 4 of the Schedule sets out the various categories of items that may be subject to change, together with a mechanism for adjustment of the Contract Price including the Construction Works Price.
- 1.4 No provision within this Part 4 of the Schedule shall entitle the Infraco to more than one payment for any item or other entitlement under the Infraco Contract.
- 1.5 References to clause numbers in Part 4 of this Schedule are to clauses in the Infraco Contract unless otherwise stated.
- 1.6 All rates, lump sums and the like contained in this Schedule Part 4 are exclusive of Value Added Tax and are in Pounds Sterling.

2.0 DEFINITIONS USED IN THIS SCHEDULE

- 2.1 "**Archaeological Officer**" means the archaeological officer appointed by CEC from time to time.
- 2.2 The "**Base Case Assumptions**" means the Base Date Design Information, the Base Tram Information, the Pricing Assumptions and the Specified Exclusions.
- 2.3 The "**Base Date Design Information**" means the design information drawings issued to Infraco up to and including 25th November 2007 listed in Appendix H to this Schedule Part 4 .
- 2.4 The "**Base Tram Information**" means the information contained in Tram Supplier's technical response in relation to the Employer's Requirements and in the Tram Supply Agreement (including, for the avoidance of doubt Schedule 23 ([Tram Technical Information Data Version 11]))

2.5 The “**Contract Price**” comprises capital expenditure and revenue expenditure as follows:

	£
Construction Works Price	233,507,664
SDS Price (as defined in the SDS Agreement and the Novation Agreement)	[Post Novation SDS cost to be finalised]
Tram Supply Price (as defined in the Tram Supply Agreement)	55,759,709
Infraco Maintenance Mobilisation	1,782,291
Tram Maintenance Mobilisation	2,274,883
Infraco Spare Parts	1,013,090
Total of capital expenditure	[Pending SDS price as above]

Revenue expenditure comprises amounts payable to the Infraco from the Service Commencement Date.

- 2.6 “**Defined Provisional Sum**” means a sum included in the Construction Works Price which is provisional but for which Infraco has deemed to have made a provisional allowance for programming, planning and pricing Preliminaries.
- 2.7 “**Issued for Construction**” shall have the meaning as used in Schedule Part 1 (*Definitions and Interpretations*).
- 2.8 A “**Notified Departure**” is where now or at any time the facts or circumstances differ in any way from the Base Case Assumptions save to the extent caused by a breach of contract by the Infraco, an Infraco Change or a Change in Law.
- 2.9 “**Pricing Assumptions**” means the assumptions in respect of the Contract Price as noted in Section 3.4 below.
- 2.10 “**Specified Exclusions**” means items for which Infraco has made no allowance within the Construction Works Price as noted in Section 3.3 below.
- 2.11 “**Traction Power Simulation Modelling**” means the technical modelling simulation prepared by the Infraco dated 2 April 2008, reference TSELEN2/484.01r04/STS.
- 2.12 An “**Undefined Provisional Sum**” means a sum included in the Construction Works Price which is provisional but for which Infraco has not deemed to have made due allowance for programming, planning and pricing Preliminaries.

3.0 CONSTRUCTION WORKS PRICE

3.1 The Construction Works Price is a lump sum, fixed and firm price for all elements of work required as specified in the Employer's Requirements as Schedule Part 2 and the Infraco Proposals as Schedule Part 31 and is not subject to variation except in accordance with the provisions of this Agreement.

3.2 It is accepted by tie that certain Pricing Assumptions have been necessary and these are listed and defined in Section 3.4 below. The Parties acknowledge that certain of these Pricing Assumptions may result in the notification of a Notified Departure immediately following execution of this Agreement. This arises as a consequence of the need to fix the Contract Price against a developing factual background. In order to fix the Contract Price at the date of this Agreement certain Pricing Assumptions represent factual statements that the Parties acknowledge represent facts and circumstances that are not consistent with the actual facts and circumstances that apply. For the avoidance of doubt, the commercial intention of the Parties is that in such circumstances the Notified Departure mechanism will apply.

3.3 Specified Exclusions from the Construction Works Price are:

- a) Utilities diversions (including both the diversion of Utilities and the diversion of any other utilities) and protective works associated with utilities save for the Provisional Sums for those utilities diversions that are to be undertaken by Infraco.
- b) Work in connection with the St Andrew Square public realm project beyond the tram works. For the avoidance of doubt tramstops, trackform, track bed, OHLE, road surface refurbishing, associated systems and link works together with any other work shown on the Base Case Design Information are included.
- c) Ground conditions that require works that could not be reasonably foreseen by an experienced civil engineering contractor based on the ground conditions reports provided to BBS on 20th and 27th of November and 6th December 2007. Additionally the BBS price does not include for dealing with replacement of any materials below the earthworks outline or below ground obstructions/voids, soft material or any contaminated materials.
- d) Bernard Street public realm project as information provided to Infraco on 28th November 2007.

3.3.1 In the event that the Infraco is required to carry out any of the Specified Exclusions, this shall be a Notified Departure.

3.4 Pricing Assumptions are:

- 1 The design prepared by the SDS Provider will not (other than amendments arising from the normal development and completion of designs):
 - 1.1 in terms of design principle, shape, form and/or specification be amended from the drawings forming the Base Date Design

Information (except in respect of Value Engineering identified in Appendices C or D);

- 1.2 be amended from the scope shown on the Base Date Design Information and Infraco Proposals as a consequence of any Third Party Agreement (except in connection with changes in respect of Provisional Sums identified in Appendix B); and
- 1.3 be amended from the drawings forming the Base Date Design Information and Infraco Proposals as a consequence of the requirements of any Approval Body.

For the avoidance of doubt normal development and completion of designs means the evolution of design through the stages of preliminary to construction stage and excludes changes of design principle, shape and form and outline specification.

- 2 Design delivery by the SDS Provider has been aligned with the Infraco construction delivery programme as set out in part [●] of Schedule Part 15 (Programme).
- 3 The Deliverables prepared by the SDS Provider prior to the date of this Agreement comply with the Infraco Proposals and the Employer's Requirements
- 4 That the Design Delivery Programme shall not be amended from the version set out in part [●] of Schedule Part 15 (Programme).
- 5 That in the event that tie and the SDS Provider have agreed mitigation measures in relation to any difference between Design Delivery Programme set out in part [●] of Schedule Part 15 (Programme) and the Design Delivery Programme attached as Appendix 2 to the SDS Novation Agreement all such mitigation measures shall be achieved in full.
- 6 That the tram fleet shall comprise 27 Trams.
- 7 That the Trams meet the DKE parameters mentioned in the track alignment criteria document (ULE90130-SW-SPN-00001 v2.1).
- 8 There shall be no impact on the traction power supply system (as demonstrated by the power simulation modelling) as a consequence of a change to the input parameters used in the Traction Power Simulation Modelling.
- 9 Except for normal development and completion of designs (as defined in 1 above), there shall be no changes to the design resulting from the impact of the kinematic envelope of the Trams on the civils design.

- 10 The Urban Traffic Controls (UTC) will allow and have no adverse impact on the Tram operations including run time and punctuality of services as set out in the Employer's Requirements.
- 11 That in carrying out the Infraco Works in accordance with this Agreement, it shall not be necessary to undertake any works outwith the "earthworks outline" (as defined in paragraph 3.6 below). The Infraco shall not encounter any below ground obstructions or voids, soft material or any contamination however the price for excavation and earthworks is inclusive of any differences between differing sub-soils that may prevail within the earthworks outline.
- 12 In respect of the highways work in Princes Street, Shandwick Place, Haymarket Junction and St Andrew Square, Infraco shall be required only to plane back the existing road structure to a sound base at the underside of the new surface course and replacement of surface course suitable for purpose to suit the revised road surface profile. Full depth reconstruction as the current designs in this area shall not be required.
- 13 In respect of the Highways and Drainage works at Picardy Place, London Road and York Place and St Andrew Square, Infraco's shall only be obliged to carry out works to the extent shown on the Base Date Design Information.
- 14 Road construction shall be 35mm thin surface course on 55mm binder course on 110mm base course and 150mm type 1 sub-base.
- 15 The roads as reconstructed in accordance with the SDS design will be adopted by CEC and 'handed back' on or prior to Service Commencement and thereafter CEC shall undertake routine maintenance (sweeping, litter, salting, normal wear and tear and the like) at no cost to Infraco. However for the avoidance of doubt, Infraco remains responsible for any defects in design or construction.
- 16 Flexible footpath surfacing shall be 30mm HRA on 50mm DBM on 150mm Type 1 base.
- 17 In respect of footways provided the Infraco has used reasonable endeavours to protect existing kerbs and flags, during the carrying out of the Infraco Works, these existing kerbs and flags can be re-used where available and minimal reinstatement behind kerb lines is required i.e. not wall to wall.
- 18 Full footway reconstruction in Leith Walk is not required beyond the allowance made in areas where kerb lines are being re-sited.

- 19 That in respect of Tower Place Bridge, Victoria Dock Bridge and Lindsay Road retaining wall, Infraco shall only be obliged to carry out works to the extent shown in accordance with the Base Date Design Information.
- 20 That in respect of Morrison Supermarket at the Gyle the Infraco shall not be required to carry out any works in respect of the retaining wall.
- 21 That in respect of the Depot excavation works, (i) the volume of excavation shall be 80,000m³, and (ii) the depot excavation will be handed over to Infraco pumped dry with a firm sound formation.
- 22 That in circumstances where, to maintain the Programme, the Infraco carries out works or procures materials or works prior to the issue of Issue for Construction drawings, no amendment to the works carried out, or works or materials procured shall be required as a consequence of the subsequent issue of the relevant Issue for Construction drawings.
- 23 That the Code of Construction Practice will be followed by Infraco except where relaxations from the hours of working outside the hours specified in the Code of Construction Practice are specifically stated in part [•] of Schedule Part 15 (*Programme*) and that CEC shall grant such relaxations in circumstances where the Infraco has submitted a competent application in order to achieve such relaxation.
- 24 That in relation to Utilities the MUDFA Contractor and/or Utility shall have completed the diversion of any utilities in accordance with the requirements of the Programme save for utilities diversions to be carried out by the Infraco pursuant to the expenditure of the Provisional Sums noted in Appendix B.
- 25 That the Possessions (as defined in Clause 16.1) shall be available as noted in the Programme at Schedule Part 15 (*Programme*).
- 26 Network Rail shall comply with its obligations under the Asset Protection Agreement and the Bridge Agreements as defined in Clause 16.1.
- 27 That, save to the extent that the Infraco fails to comply with its obligations under Clause 16 of this Agreement to provide information properly and reasonably requested in a full and timely manner to Network Rail in the process of developing the APA Works Programme, that neither the timing nor the terms of Network Rail's approval of the APA Works Programme shall adversely affect the Programme.
- 28 Trackslab depth is 385mm with formation condition of 10% CBR.
- 29 That there shall be no special floating track measures required for vibration
That no protective measures are required in relation to protected trees however new trees will be provided for any trees removed in accordance with the Environmental Management Plan.

- 31 That the Archaeological Officer shall not delay or disrupt the Infraco Works.
- 32 That the programming assumptions set out in Schedule Part 15 (*Programme*) remain true in all respects.
- 33 That third parties shall not carry out works which impact upon the Infraco Works.
- 34 That stray current protection proposals as contained within the Infraco Proposals shall be approved by all relevant Approval Bodies where Infraco has made a competent application .
- 35 That Consent shall be obtained (within a reasonable time having regard to the progress of the Infraco Works) for the use of Railway Ballast from Markle Mains Quarry.
- 36 Demolition or alteration of existing buildings shall only be required as follows:
- Demolition
- Caledonian Ale House (Plot 33)
 - Redpath McLean Office Russell Road (Plot 68)
 - Simloch Property Roseburn Street (Plot 75)
 - Viking International Roseburn Street (Plot 79)
 - JB McLean lean-to Roseburn Street (Plot 92)
 - National Car Rental Roseburn Street (Plot 103)
 - Busy Bee Catering Balgreen Road (Plot 130)
 - ATC Hut Stenhouse Drive (plot 150)
- 37 Asbestos shall not be discovered or identified in buildings to be demolished or altered.
- 38 All CCTV cameras and other road equipment will be connected back to the nearest Open Transport Network (OTN) node in either a sub-station or Tramstop.
- 39 That compliance with the Infraco's obligation pursuant to Clause 18.17B and under Schedule Part 13 Section A (Third Party Agreements) to give due a proper cognisance to third party requirements (and similar obligations such as to have "due and proper regard to such third party requirements) under the Third Party Agreements shall not cause any delay or disruption to the

carrying out of the Infraco Works, on the basis that the Infraco shall have used reasonable endeavours to mitigate the impact of such compliance and that any such third party requirements could not reasonably have been foreseen by an experienced contractor executing works in the operating environment of a UK city.

- 40 That any conditions attaching to any licence or similar arrangement entered into between tie and a third party entered into pursuant to any agreement included in Schedule Part 13 Section A (Third Party Agreements) shall not cause any delay or disruption to the carrying out of the Infraco Works, on the basis that the Infraco shall provide all reasonable assistance to tie to ensure compliance at all times with any such conditions and shall use all reasonable endeavours to mitigate the impact of such conditions on the carrying out of the Infraco Works.

- 3.5 The Contract Price has been fixed on the basis of inter alia the Base Case Assumptions noted herein. If now or at any time the facts or circumstances differ in any way from the Base Case Assumptions (or any part of them) such Notified Departure will be deemed to be a Mandatory tie Change requiring a change to the Employer's Requirements and/or the Infraco Proposals or otherwise requiring the Infraco to take account of the Notified Departure in the Contract Price and/or Programme in respect of which tie will be deemed to have issued a tie Change on the date that such Notified Departure is notified by either Party to the other. For the avoidance of doubt tie shall pay to the Infraco, to the extent not taken into account in the Estimate provided pursuant to Clause 80.24.1, any additional loss and expense incurred by the Infraco as a consequence of the delay between the notification of the Notified Departure and the actual date (not the deemed date) that tie issue a tie Change Order, such payment to be made by tie following evaluation, agreement or determination of such additional loss and expense pursuant to Clause 65 (Compensation Events) as if the delay was itself a Compensation Event.

- 3.6 Earthworks Outline in this Schedule Part 4 means:

- 3.6.1 the finished earthworks levels and dimensions (prior to topsoiling) for the construction, where specified, of
- (a) carriageway, hard shoulder, hard strip, footway, paved area, central reserve, verge, side slope;
 - (b) underside of (i) trackslab, (ii) grasstrack concrete, and (iii) ballast;
 - (c) sub-base;
 - (d) fill on sub-base material, base and capping;
 - (e) contiguous filler material, lightweight aggregate infill;
 - (f) surface water channels;
 - (g) landscape areas, environmental bunds.

In all cases of filter drains, except narrow filter drains, the Earthworks Outline shall be the top of the filter material.

- 3.6.2 Where capping or stabilisation to form capping is required by the design in cutting or embankment, the Earthworks Outline shall be as defined in paragraph 1 i.e. as the top of capping.
- 3.6.3 Where an embankment is required by the design to be surcharged, the Earthworks Outline shall be defined as in paragraph 1 and exclude the surcharge.
- 3.6.4 Where permanent storage or stockpiling of topsoil is required, the Earthworks Outline shall be as defined in paragraph 1 and exclude stored topsoil.
- 3.6.5 Where the ground has been subjected to the treatment in respect of ground improvement, mine workings, swallow holes and the like, for the purpose of the definition of Earthworks Outline the existing ground level shall be the level obtained on completion of any such treatment of the areas affected.

Sub-soil Level is defined as the level of the ground after the removal of topsoil.

Surcharge is defined as material placed for the purpose of loading for the periods specified in the design.

4.0 PROVISIONAL SUMS

- 4.1 Provisional Sums have been allowed for items listed in Appendix B.
- 4.2 These are in two tables. The first table represents Defined Provisional Sums. The second table represents Undefined Provisional Sums.
- 4.3 The procedure for the expenditure of the Provisional Sums is as set out in this section.
- 4.4 Provisional Sums requiring an instruction are those for which a "trigger date" has been identified in Tables 1 and 2 below. Where the "trigger date" is stated to be "not applicable", this is a Provisional Sum not requiring instruction.
- 4.5 Provisional Sums requiring Instruction
 - 4.5.1 tie shall, in conjunction with (where reasonably requested by tie) Infraco and the Infraco Parties prepare the defined requirements and specification for Provisional Sums which require an instruction sufficiently ahead of Programme so as to achieve the tie Notice of Change by the date shown as the trigger date in Tables 1 and 2 below.
 - 4.5.2 Not later than the dates set out in column entitled "trigger date" of the Provisional Sums Tables tie shall issue a tie Notice of Change instructing the works to which the Provisional Sums requiring Instruction apply, which tie Change shall be a Mandatory tie Change. Failure by tie to issue a tie Notice of Change in

accordance with this paragraph shall be a Compensation Event to which Clause 65 applies

- 4.5.3 After agreement or determination of a **tie** Change for works to which a Provisional Sum applies, the Provisional Sum and, in the case of Defined Provisional Sums the provisional allowance for programming, planning and pricing Preliminaries shall be removed from the Contract Price and Milestone Schedule and the Programme and shall be replaced by the value of the tie Change and programme adjustment determined in accordance with Clause 80.

4.6 Provisional Sums not requiring an Instruction

- 4.6.1 Where work is carried out in respect of a Provisional Sum which is not a Provisional Sum requiring Instruction, the carrying out of such works will be deemed to be a tie Change.
- 4.6.2 After agreement or determination of the **tie** Change which is deemed to have occurred pursuant to paragraph 4.6.1, the Provisional Sum and, in the case of Defined Provisional Sums the provisional allowance for programming, planning and pricing Preliminaries shall be removed from the Contract Price and Milestone Schedule and the Programme and shall be replaced by the value of the tie Change and programme adjustment determined in accordance with Clause 80.

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 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
- 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; and
- 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 Milestone Schedule 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).;
- 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 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 [] 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 Clause 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 been 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
- they may require such significant reinstatement work that to carry out under MUDFA may result in significant abortive works

7.2 Where Infraco has been advised of the existence of utility apparatus in advance, whether identified to date or following discovery during the MUDFA Works, any adjustment to the Contract Sum will be made by applying the provisions of Clause 80 (*tie Changes*).

7.3 Those identified to date are noted in Appendix F.

8.0 SCHEDULES OF RATES AND QUANTIFIED SCHEDULES OF RATES

8.1 Rates for certain items have been established for determining the value of **tie Changes** as noted in Appendix F. These include:

- Rates for utilities diversions
- Rates for Additional Trams and other items related to the Trams

8.2 The rates contained in the appendix F are **inclusive** of overheads and profit are to be used for the purpose of agreeing changes (positive and negative) noted in Clause 1.2 of this Schedule 4.

- 8.3 The Quantified Schedules of Rates are also contained in Appendix F and they are included for reference only in determining the value of changes as outlined in Appendix **G** herein. For the avoidance of doubt the quantities have not been prepared in accordance with any Standard Method of Measurement, are not re-measurable and any errors or omissions contained therein are entirely at the risk of Infracore.
- 8.4 Rates for SDS are as noted in the SDS Agreement / SDS Novation Agreement which also set out the mechanism that shall apply in respect of any design associated with tie Changes.

**APPENDIX A
CONSTRUCTION WORKS PRICE ANALYSIS**

**A1 CONSTRUCTION WORKS PRICE ANALYSIS
A2 DETAILED SUMMARY OF CONSTRUCTION WORKS PRICE**

[Analysis being updated to reflect final position – completed by 15th April]

**APPENDIX B
PROVISIONAL SUMS AND THE MECHANISM FOR THEIR ADJUSTMENT**

1.0 Summary of Provisional Sums

- 1.1 The following tables summarises the Provisional Sums included within the Infraco Works:
- 1.2 Table 1 notes the Defined Provisional Sums for which Infraco has deemed to have made allowance for programming, planning and pricing Preliminaries.
- 1.3 Table 2 notes the Undefined Provisional Sums for which Infraco has not deemed to have made allowance for programming, planning and pricing Preliminaries.

2.0 Table 1 – Defined Provisional Sums

Item	Description of Provision Sum	trigger date	provisional duration	£
1	Pumped surface water outfall at A8 underpass (by depot)	01 June 08	6 months	£100,000
2	Scottish Power connections to the Depot and Ingliston Park & Ride	not applicable	Depot 2 weeks (Feb 09) IPR 2 weeks (Nov 09)	£750,000
4	Relocation of Ancient Monuments – this relates to those monuments noted on the route [SDS drawings ULE 90130-01-HRL 0003B, 6B, 7B, 10B, 12B, 13B, 14B, 15B & 24B refer] – it does not include cleaning and/or restoration	20 Business Day after BBS raise any queries in respect of issued information	Haymarket War Memorial 4 weeks (Mid Nov 08 – Mid Dec 08)	£53,700
4	Additional cost of Network Rail compliant ballast	20 Business Day after BBS provide spec.	26 months (Oct 08 – Nov 10)	£300,000
5	Extra over for revised alignment to Picardy Place, York Place and London Road junctions (see also next item)	01 January 09	23 months (March 09 – Jan 11)	£3,340,324
6	Extra over for major utility diversions Picardy Place, York Place and London Road junctions	01 January 09	23 months (March 09 – Jan 11)	£3,000,000
7	Extra over for shell grip at junctions	01 August 08	29 months (Aug 08 – Jan 11)	£319,343
Carried forward				£7,863,367

Item	Description of Provision Sum	trigger date	duration	£
	Brought forward			£7,863,367
8	Allowance for Scottish Power connections to new street lights and new traffic signals	not applicable	29 months (Aug 08 – Jan 11)	£115,287
9	Allowance for demolition of existing Leith Walk substation (if required) [SDS drawings ULE 90130-01-SUB- 00023 rev 2, 00046 rev 1,00047 rev 1 and 00051 rev 1 refer]	20 Business Day after BBS raise any queries in respect of issued information	3 months (Aug 08 – Jan 11)	£55,662
10	Urban Traffic Controls [UTC] associated with the delivery of the alignment	01 August 08	29 months (Aug 08 – Jan 11)	£2,500,000
11	Scottish Power connections to Phase 1a sub-stations (8nr x £50,000)	not applicable	21 months(Nov 08 – July 10)	£400,000
12	Various Forth Ports requirements including the revised alignment of track at Casino Square, relocated tramstop, junction amendments and removal of 'kink' in alignment from Constitution Street, footpath on south side of Tower Place Bridge and Victoria Dock Bridge	01 October 08	25 months (Jan 09 – Jan 11)	£150,000
13	Forth Ports requirements at Ocean Terminal amendments	01 October 08	3 months (Aug 09 – Oct 09)	£350,000
Total				£11,434,316

3.0 Table 2 – Undefined Provisional Sums

Item	Description of Provision Sum	Trigger date	£
1	Accommodation Works	not applicable	£1,000,000
2	Allowance for minor utility diversions	01 October 08	£750,000
3	PICOPS / COSS / Possession Protection Staff support when undertaking works adjacent or over the railway – see also 4b) below	not applicable	£755,307
4	Archaeological Officer – impact on productivity	not applicable	£405,755
5	Additional Crew Relief Facilities at Haymarket [SDS drawings ULE 90130-02-STP-000126 REV 1 and 000127 rev 1 refer]	20 Business Day after BBS raise any queries in respect of issued information	£49,950
6	Urban Traffic Controls [UTC] associated with the wider area impacts	01 January 10	£2,500,000
7	Forth Ports requirements for design and construction of by-pass road to adoptable standard	01 October 08	£400,000
8	Forth Ports requirements for Lindsay Road amendments	01 October 08	£1,750,000
9	Royal Bank of Scotland requirement for enhancement of Gogarburn Tramstop	01 October 08	£400,000
Total			£8,011,012

4.0 Basis

- a) Relocation of Ancient Monuments applies to those on the route only. Any works in respect of ancient monuments in George Street are undefined.
- b) Any costs in connection with PICOPS / COSS / Possession Protection Staff as Network Rail possession support when undertaking works adjacent or over the railway in respect of item 3 of Table 2 above shall relate solely to the possessions planned at signature of the Infraco Contract. This possession support will be adjusted in the event that Network Rail varies the requirement for PICOPS / COSS or otherwise amends the

possession arrangement. However if the possession is amended or extended due to Infraco over-running then any additional possession support will not be recoverable.

5.0 Requirement to co-operate

- 5.1 Infraco shall co-operate with **tie** in the provision of design and pricing information required to satisfy the requirements of the Forth Ports Agreement.
- 5.2 Infraco shall co-operate with **tie** in the provision of pricing information required to satisfy the requirements of the Royal Bank of Scotland Agreement in connection with Gogarburn Tramstop (outline design provided by others).

**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	tie may need to add in cost of a small pump	Subject to tie issuing an instruction to implement the VE opportunity. tie 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 tie 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 tie issuing an instruction to implement the VE opportunity.
4	Rationalise scope requirement Track Maintenance Equipment at Depot and consider renting	-£27,500		Subject to tie 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 tie issuing an instruction to implement the VE opportunity.
6	Delete requirement for concrete apron to security fence at Depot	-£6,080		Subject to tie issuing an instruction to implement the VE opportunity.
Carried forward		-£520,606		

Item	Description of Identified VE Saving	£	Notes	Key Qualifications
	Brought forward	-£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"> • changes to initial Depot design driven by proximity to BAA runway (reduced bulk excavation) • reductions in structural loadings (gantry crane reduced in capacity and size impacting on building frame and envelope) • reduction in staff accommodation provision (reduced operational workforce reducing messing facilities, changing rooms, locker space, etc.) • reduction in fit out specification • reduction in domestic utility capacity (reduced building volume and accommodation provision) 	- £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.
	Carried forward	- £3,370,606		

Item	Description of Identified VE Saving	£	Notes	Key Qualifications
	Brought forward	- £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
	Carried forward	- £5,125,606		

Item	Description of Identified VE Saving	£	Notes	Key Qualifications
	Brought forward	-£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
22	Rationalizing spares supplied with the Infraco bid	-£300,000		Subject to agreement of Operator
	Carried forward	-£9,050,606		

Item	Description of Identified VE Saving	£	Notes	Key Qualifications
	Brought forward	-£9,050,606		
23	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.
24	Noise attenuation (outside of Roseburn Corridor) 3,650m of fencing	-£50,000		Subject to property owners' claims.
25	Reduce ballasted track thickness from 300mm to 200mm	-£200,000		
26	Urban Traffic Controls (UTC) associated with wider area impacts	-464,400		
	Total	-£10,265,006		

**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
Total		-£2,670,000	

**APPENDIX E
UTILITIES DIVERSIONS TO BE CARRIED OUT BY INFRACO**

Please refer to Schedule Part 42.

**APPENDIX F
SCHEDULE OF RATES AND QUANTIFIED SCHEDULE OF RATES**

[This appendix constitutes 170 pages of agreed rates for different elements of the works. There are remaining end game discussions on the breakdown of contractor's prelims – particularly re site overheads – and how these will be applied to changes post contract close]

**APPENDIX G
PROCESS FOR AGREEMENT OF VALUE OF TIE CHANGES**

1.0 Generally

- 1.1 **The valuation of any tie** Changes shall be made in accordance with Clause 80.6
- 1.2 If the value of tie Changes cannot be properly ascertained by measurement or valuation in compliance with Clause 80.6 then they shall be valued on the basis of Actual Cost where possible or estimated Actual Cost
- 1.3 In respect of a valuation of any work under 1.2 the **tie** Representative shall apply head office overheads and profit percentages to the appropriate elements of Actual Cost as follows:
- | | | |
|-----|-------------------------|-----|
| (a) | Civil Engineering works | 10% |
| (b) | Systems and Track works | 17% |

For the avoidance of doubt the percentages above do not include site related overhead which shall be added, if appropriate, to Actual Cost in accordance with the spreadsheet for Preliminaries set out in Appendix F herein¹

- 1.4 The amount of the overheads and profit percentage calculated as part of the valuation of Variations shall be added in the case where the valuation results in an addition and shall be deducted where the valuation results in an omission.
- 1.5 Where 1.2 above is the basis of the valuation of **tie** Changes then the following items shall not be included as Actual Costs under the Infraco Contract.
1. Costs not justified by the Infraco's accounts and records.
 2. Costs not payable under the Infraco Contract.
 3. Costs arising from the Infraco's Design errors.
 4. Costs arising in respect of loss or damage except as provided for under the Agreement.
 5. Costs which should have not been paid to a sub-contractor in accordance with the relevant sub-contract.
 6. Costs arising from people who are part of the Head Office Overhead.

¹ tie/BBS to discuss. The qualification on site related overhead is not agreed.

**APPENDIX H
BASE DATE DESIGN INFORMATION**

[Drawings which forma part of the Infraco Proposals (ie those issued to Infraco up to 25th November) to be listed here]

APPENDIX I NETWORK RAIL IMMUNISATION

1. Words defined in Clause 16 or Part 1 of the Schedule shall have the same meaning in this Appendix I to Part 4 of the Schedule. Additionally, for the purposes of this Appendix I;
 - 1.1 “**Immunisation Programme**” shall mean the series of linked tasks, defined [in the form of a Gantt chart in the Infraco’s schedule of works, to be completed within a predetermined time] that when executed to completion will result in NR Immunisation;
 - 1.2 “**Infraco’s Immunisation Strategy**” shall mean the defined set of processes documented in the Infraco’s NR EMC Strategy Plan; and
 - 1.3 “**NR Immunisation**” shall mean, in so far as indicated in Infraco’s Immunisation Strategy as intended to be carried out on the Network, works to mitigate the potential effects to the Railway of electromagnetic interference due to effects of coupled energy or stray current from the operation of the Edinburgh Tram Network traction system.
2. The Infraco has agreed to undertake the NR Immunisation, including management of associated works, programme and approvals together with obligations in relation to the same set out in Clause 16 (*Interface with Network Rail*), subject to Network Rail approving the Infraco Immunisation Strategy in writing before 31 July 2008. In the event that Network Rail have been unable to determine whether or not to approve the Infraco Immunisation Strategy by 31 July 2008 due to material delay on the part of the Infraco in the provision of relevant information reasonably required by Network Rail through **tie**, the deadline for approval specified in this paragraph shall be extended to such later date as the Parties, acting reasonably shall agree.
3. In the event that Network Rail approve the NR Immunisation prior to the deadline referred to in paragraph 2 above:
 - 3.1 Infraco shall procure the delivery of the NR Immunisation;
 - 3.2 subject to any liability in relation to NR Immunisation and associated Possessions being addressed under Clauses 16.72 or 16.73, **tie** shall pay to Infraco 100% of the cost of NR Immunisation subject to a cap for the total cost of such works of £3 million;
 - 3.3. Infraco and **tie** shall jointly to carry out value engineering investigations in respect of NR Immunisation;
 - 3.4 in the event that the actual cost of procuring the NR Immunisation is less than £3 million then **tie** shall (in the case of Infraco, in addition to sums paid or due to be paid under paragraph 3.2) pay one third of the difference between the actual cost and £3 million to both Network Rail and Infraco and be entitled to retain the remaining third of that difference;
 - 3.5 in so far as the cost of NR Immunisation exceeds £3 million, Infraco shall be responsible for 100% of the proportion of that cost in excess of £3 million but not exceeding £3.375 million;

- 3.6 subject to any liability in relation to NR Immunisation and associated Possessions being addressed under Clauses 16.72 or 16.73, in so far as the cost of NR Immunisation exceeds £3.375 million but does not exceed £4.125 million, **tie** shall pay Infraco 50% of the proportion of that cost in excess of £3.375 million in addition to all sums due to Infraco pursuant to paragraph 3.2;
- 3.7 subject to any liability in relation to NR Immunisation and associated Possessions (as defined in Clause 16) being addressed under Clauses 16.72 or 16.73, **tie** shall pay Infraco 100% of the cost of NR Immunisation in so far as the cost of such works exceeds £4.125 million.
4. The Infraco Immunisation Strategy is based on the Infraco or its sub-contractors carrying out all the works and supplying all equipment for the NR Immunisation.
5. Network Rail Costs as defined for the purposes of the Asset Protection Agreement shall be excluded in the calculation of the cost of the NR Immunisation for paragraph 3. All such Network Rail Costs shall be borne by **tie**.
6. Delays to NR Immunisation attributable to Network Rail shall be Compensation Events to the extent that such delays are not directly due to Infraco failure to comply with its obligations under this Agreement.
7. The Infraco's liability to **tie** in respect of or arising out of NR Immunisation shall be subject to the limitations as provided for in Clauses 16.72 and 16.73.
8. In the event that Network Rail do not accept the Infraco Immunisation Strategy by the deadline specified in paragraph 2 above, **tie** shall instruct the Infraco on how to proceed in respect of NR Immunisation and such instructions shall be Compensation Events and a **tie** Change (for any resulting additional or changed work required by **tie**) under the Infraco Contract.
9. In the event of paragraph 8 applying, the **tie** Change shall (subject to evaluation) omit an allowance of £2.2 million for NR Immunisation and add back any additional work to be undertaken to by the Infraco to support **tie** in delivering an alternative immunisation solution to mitigate the potential effects to the Railway of electromagnetic interference due to effects of coupled energy or stray current from the operation of the Edinburgh Tram Network traction system ("Alternative Solution").
10. In the event that the Infraco does not undertake the NR Immunisation or Alternative Solution works in full, all electromagnetic interference or corrosion due to effects of coupled energy or stray current from the operation of the Edinburgh Tram Network related obligations, in the Infraco Contract (including without prejudice to the foregoing Clause 16 and any relevant Third Party Agreements in Part 13 Section A of the Schedule) shall be the subject of a **tie** Change.
11. For the avoidance of doubt, **tie** shall pay to the Infraco, to the extent not taken into account in the **tie** Change arising pursuant to paragraph 8, any costs and expenses incurred as a consequence of the delay between the deadline specified in paragraph 2 and the actual date (and not the deemed date) that **tie** issue a **tie** Change Order. Such costs and expenses shall be evaluated pursuant to Clause 65 (*Compensation Events*) on the basis that such delay is itself a Compensation Event.

12. **tie** accepts that the Infraco may commence the work to deliver the NR Immunisation under the Mobilisation and Advance Works Agreement.
13. All sums due to Infraco pursuant to this Appendix I shall be paid in accordance with Clause 66 (*Payment of the Contract Price*) and not Clause 67 (*Payment in respect of Applications for Milestone Payments*).



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14 March 2008

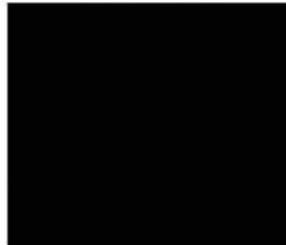
Dear Sirs,

RE: Advance Payment Bond in the amount of up to £11 million (the "Bond") - Construcciones y Auxiliar de Ferrocarriles S.A. – Contract to provide trams for use on the light rapid transit system in Edinburgh known as the Edinburgh Tram Network.

We confirm that we are willing to issue the captioned Bond (in the format attached) subject to:

1. Receipt from CAF S.A of a satisfactorily executed indemnity agreement;
2. Payment of the premium in full in advance of the issuance of the Bond;
3. Based on a Bond value of up to £11,000,000 and 18 months duration at a rate of 0.40% p.a., the premium is £66,000. To the extent that the Bond value is less than £11,000,000, a pro-rata rate of 0.40% p.a. will be applied thereto.
4. Payment of the premium should be made to the following account:

Ace European Group Ltd



As soon as we are in receipt of the premium and the CAF indemnity, we will be in a position to issue the Bond. This letter of intent is valid for 30 days.

Yours faithfully

Jonathan Finch
Surety Underwriter

(1) [◆] [SURETY]

- in favour of -

(2) tie LIMITED

ADVANCE PAYMENT BOND

ADVANCE PAYMENT BOND

BETWEEN

- (1) [◆], a company incorporated in [◆] under company number [◆] whose registered office is at [◆] ("**the Surety**"); and
- (2) **TIE LIMITED**, a company incorporated in Scotland under number SC230949 and having its registered office at City Chambers, High Street, Edinburgh EH1 1YJ ("**tie**") which expression shall include its successors, permitted assignees and transferees

WHEREAS

- A. **tie** entered into an agreement for the appointment of a contractor (hereinafter referred to as the "**Tram Supply Agreement**") dated [◆] with Construcciones y Auxiliar de Ferrocarriles S.A. (the "**Tramco**") to provide trams for use on the light rapid transit system in Edinburgh known as the Edinburgh Tram Network.
- B. Clause [◆] of the Tram Supply Agreement obliges the Tramco to deliver to **tie** an unconditional irrevocable bond on the conditions and in the form set out in Part [◆] of Schedule 8 (*Bonds, Parent Company Guarantee and Collateral Warranty*) to the Tram Supply Agreement, issued by a surety acceptable to **tie** and callable subject only to written notification by **tie** in terms of this Bond.
- C. In consideration of **tie** accepting the Surety's obligations set out below in discharge of the Tramco's undertaking to provide a bond under Clause [◆] of the Tram Supply Agreement, the Surety hereby irrevocably and unconditionally agrees and undertakes to pay to **tie** a sum not exceeding a total aggregate value of £[◆] (the "**Bonded Amount**") and the Surety accordingly covenants with **tie** and agrees as follows:
 1. The Surety hereby covenants with **tie** that following receipt by the Surety of a notice in writing from **tie** in the form set out in Appendix 1 ("**Demand Notice**") that there has been an Insolvency Event in relation to the Tram Supplier, the Surety shall, promptly and in any event no later than five business days following receipt of the Demand Notice, pay to **tie** in full and without any deductions whatsoever or any right of set-off, abatement or counterclaim, the sum stated in the Demand Notice in immediately available funds by electronic transfer to the account nominated in the Demand Notice, not exceeding in aggregate the Bonded Amount.

2. Any Demand Notice must be made in writing signed by an authorised representative of **tie** and a copy of the written statement identifying the Insolvency Event must accompany the Demand Notice.
3. Upon receipt by the Surety of a Demand Notice from **tie** the Surety shall neither be entitled nor obliged to make any enquiry or proof or contestation or impose any further conditions on **tie** (or the Tramco) and **tie** shall not need to take any legal action against or to obtain the consent of the Tramco. **tie** may make as many separate demands hereunder as **tie** thinks fit. **tie** shall not be obliged to exercise any other right or remedy **tie** may have before making a demand under this Bond.
4. A Demand Notice received from **tie** in accordance with Clause 1 above shall be conclusive evidence of the Surety's liability to pay to **tie** and of the amount of the sum or sums which the Surety is liable to pay. The Surety's obligation to make payment under this Bond shall be a primary, independent and absolute obligation and the Surety shall not be entitled to delay or withhold payment for any reason. The Surety's obligation hereunder shall not be affected by any act, omission, matter or thing which, but for this provision, might operate to release or otherwise exonerate the Surety from the obligations hereunder in whole or in part, including without limitation (and whether or not known to the Surety or to **tie**):
 - 4.1 any time or waiver granted to **tie** or to the Tramco;
 - 4.2 the taking, variation, compromise, renewal or release of or the refusal or neglect to perfect or to enforce any rights, remedies or securities against **tie** or the Tramco;
 - 4.3 any legal limitation, disability or incapacity relating to **tie** or the Tramco;
 - 4.4 any variation of or amendment to the Tram Supply Agreement (or related documentation) or the works or services to be performed thereunder or any other document or security so that references to the Tram Supply Agreement in this Bond shall include each such variation and amendment;
 - 4.5 any unenforceability, invalidity or frustration of any rights or obligations of **tie** or the Tramco under the Tram Supply Agreement or any other document or security;
 - 4.6 any proceedings, formalities, intervention or appointment arising from the Insolvency Event; and