

Melton Mowbray Distributor Road

APPENDIX E

Independent Cost Report



MELTON MOWBRAY DISTRIBUTOR ROAD

SCHEME COST REVIEW

December 2017

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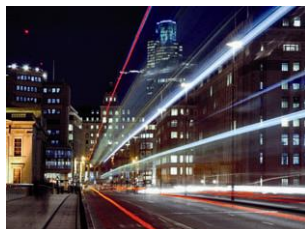
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REV	ISSUE STATUS	PREPARED BY/DATE	CHECKED BY/DATE	APPROVED BY/DATE
1	DRAFT	JT 05 December 2017	CY 05 December 2017	
2	FINAL	JT 06 December 2017	CY 06 December 2017	CY 06 December 2017

Our Markets



Property & Buildings



Transport & Infrastructure



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Environment

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1.00 INTRODUCTION

Waterman Aspen has been commissioned by AECOM to carry out an independent high level review of the Melton Mowbray Distribution Road Budget Price.

1.1 The Budget Price is built up as follows:

Carillion budget price IE construction Costs (October 2017)	£52,289,000.00
Land Costs	£4,635,000.00
Preparation costs	£3,352,410.00
Supervision costs	£2,354,139.00
Total Budget	£62,630,549.00

2.0 BASIS OF COSTS

- 2.1 The contractor, Carillion, has provided a detailed breakdown of construction costs with quantities and rates shown. These have been based on drawings and assumptions detailed in Table 2 below. The construction costs are summarised in series, in the Table 1 below
- 2.2 No details of land costs have been provided
- 2.3 A schedule of AECOM costs through design, construction & management period is included these totals

Table 1 – Carillon Construction Costs

CONSTRUCTION		Series Totals
Series 100 Preliminaries		£16,469,349
Series 200 Site Clearance		£376,500
Series 300 Fencing		£1,897,840
Series 400 Road Restraint Systems (Vehicle and Pedestrian)		£ 1,374,440
Series 500 Drainage and Service Ducts		£2,630,847
Series 600 Earthworks		£6,283,342
Series 700 Pavements		£5,587,991
Series 1100 Kerbs, Footways and Paved Areas		£1,619,620
Series 1200 Traffic Signs		£470,885
Series 1200 Road Markings		£61,000
Series 1300 Road Lighting Columns		£402,050
Series 1400 Electrical Work for Road Lighting and Traffic Signs		£393,695
Series 2700 Statutory Undertakers		£3,130,500
Series 2500 Special Structures		£5,817,220
Series 3000 Landscape and Ecology		£577,000
Subtotal		£47,092,279
Fee (MHA)	6.79%	£3,197,566
Diversion of 132Kv Cables		£2,000,000
Base Line Total		£ 52,289,845

Table 2 – Drawings Issued/used by Carillion

Number	Title	Format	Date Received
60542201-SKE-20-0000-C-0010	Scheme Overview Plan	pdf	12 October 2017
60542201-SHT-20-0000-C-GD01 REVA	Preliminary Design Plan and Profile Section 1	pdf	12 October 2017
60542201-SHT-20-0000-C-GD02 REVA	Preliminary Design Plan and Profile Section 2	pdf	12 October 2017
60542201-SHT-20-0000-C-GD03 REVA	Preliminary Design Plan and Profile Section 3	pdf	12 October 2017
60542201-SHT-20-0000-C-GD04 REVA	Preliminary Design Plan and Profile Section 4	pdf	12 October 2017
60542201-SHT-20-0000-C-GD05 REVA	Preliminary Design Plan and Profile Section 5	pdf	12 October 2017
60542201-SHT-20-0000-C-GD06 REVA	Preliminary Design Plan and Profile Section 6	pdf	12 October 2017
60542201-MOD-20-0000-C-HY3D		dwg	12 October 2017
60542201-MOD-20-0000-C-RBT1		dwg	12 October 2017
60542201-MOD-20-0000-C-RBT2		dwg	12 October 2017
60542201-MOD-20-0000-C-RBT3		dwg	12 October 2017
60542201-MOD-20-0000-C-RBT4		dwg	12 October 2017
60542201-MOD-20-0000-C-RBT5		dwg	12 October 2017
60542201-MOD-20-0000-C-RBT6		dwg	12 October 2017
60542201-MOD-20-0000-V-STAT		dwg	12 October 2017
60542201-SKE-20-0000-C-????	Draft Preliminary Drainage Layout Sheet 1 of 6	pdf	16 October 2017
60542201-SKE-20-0000-C-????	Draft Preliminary Drainage Layout Sheet 2 of 6	pdf	16 October 2017
60542201-SKE-20-0000-C-????	Draft Preliminary Drainage Layout Sheet 3 of 6	pdf	16 October 2017
60542201-SKE-20-0000-C-????	Draft Preliminary Drainage Layout Sheet 4 of 6	pdf	16 October 2017
60542201-SKE-20-0000-C-????	Draft Preliminary Drainage Layout Sheet 5 of 6	pdf	16 October 2017
60542201-SKE-20-0000-C-????	Draft Preliminary Drainage Layout Sheet 6 of 6	pdf	16 October 2017
60542201-MOD-20-0000-C-HYDR		dwg	16 October 2017
60542201-ACM-07-SK-BD-008.002 Rev 0D	Railway Bridge (Ref No 8) Outline General Arran	pdf	17 October 2017
60542201-ACM-07-SK-BD-008.002 Rev 0D	Railway Bridge (Ref No 8) Outline General Arran	dwg	17 October 2017
60542201-ACM-STR-S1_CU_C001_Z-DR-CB-0001	Bridge 1 General Arrangement	pdf	26 October 2017
TN-HW-001	Highway Cross Section 40mph Section	pdf	30 October 2017
TN-HW-002	Highway Cross Section 60mph Section	pdf	30 October 2017
Technical Note 1		word	30 October 2017
60542201-ACM-STR-S5_BR_B004_Z-DR-CB-0001	Railway Bridge General Arrangement 1	pdf	31 October 2017
60542201-ACM-STR-S5_BR_B004_Z-DR-CB-0002	Railway Bridge General Arrangement 2	pdf	31 October 2017
Melton Mowbray Distributor Road - River Eye Pricing - Nov 2017 RevB	River Eye Bridge	pdf	02 November 2017
19888JS-Melton Mowbray Sheets 1 - 12 Rev P01	Statutory Undertakers	pdf	03 November 2017
MA_MJ_31-10-2017	Pavement X-sections	pdf	03 November 2017
U60542201_MMDR_Schedule of Assumed Quantities	Assumed quantities - Fencing, VRS, Traffic Signs,	pdf	06 November 2017
60542201-ACM-STR-S2_BR_B002_Z-DR-CB-001	Bridge 4 General Arrangement	pdf	06 November 2017
MMDR-Schedule of Gullies_CKGUs	MMDR-Schedule of Gullies_CKGUs	excel	07 November 2017
60542201-SKE-20-0000C-1101	Accommodation Works Drawings	pdf	10 November 2017
60542201-SKE-20-0000C-1102	Accommodation Works Drawings	pdf	10 November 2017
60542201-SKE-20-0000C-1103	Accommodation Works Drawings	pdf	10 November 2017
60542201-SKE-20-0000C-1104	Accommodation Works Drawings	pdf	10 November 2017
60542201-SKE-20-0000C-1105	Accommodation Works Drawings	pdf	10 November 2017
60542201-SKE-20-0000C-1106	Accommodation Works Drawings	pdf	10 November 2017
60542201-SKE-20-0000C-1107	Accommodation Works Drawings	pdf	10 November 2017
60542201-SKE-20-0000C-1108	Accommodation Works Drawings	pdf	10 November 2017
60542201-SKE-20-0000C-1109	Accommodation Works Drawings	pdf	10 November 2017
60542201-SKE-20-0000C-1110	Accommodation Works Drawings	pdf	10 November 2017
60542201-SKE-20-0000C-1111	Accommodation Works Drawings	pdf	10 November 2017
60542201-SKE-20-0000C-1112	Accommodation Works Drawings	pdf	10 November 2017

2.4 Assumptions made by Carillion

- 1 Demolition of Sysonby Farm - No Details
- 2 75% safety fencing in filterdrain (concrete foundations)
- 3 10% excavated material not suitable for reuse
- 4 Topsoil strip 300mm, resoiling 300mm to batters, 150mm to verges
- 5 Pavement Foundation - Option 1, CBR 5-10%
- 6 All roundabout surfacing pavement type F7
- 7 Free edge, 300mm steps
- 8 30m inlay at each tie in location
- 9 Cycle track, edgings to one side
- 10 Cycle track construction: 150mm sub-base, 50mm binder, 25mm surface course
- 11 Series 1400 - cable allowance 2x assumed installation distance along each roundabout leg
- 12 Series 1400 - chambers assumed at 40m c/c
- 13 Series 1400: feeder pillars, assumed 1 per roundabout
- 14 Series 1400: earth electrodes, assumed 1 per leg off each roundabout
- 15 No allowance for diversion works to 132 KV_a HV cables on Pylons
- 16 Note: Diversion measured as length to be diverted not final diverted length
- 17 Protection slab, 2m wide, 100mm rc slab, 150mm sub-base
- 18 Electric diversion, 11Kv
- 19 Water diversion, 280mm HDPE
- 20 Gas Diversion MP/LP, 125mm HDPE
- 21 Bridges 1, 2 & 5 (box culverts) erosion protection provision of 3m x 4m at both upstream and downstream ends
- 22 Bridge 4 (and 3) piling assumed 12m long
- 23 Structures - Flood culverts, as noted on drawing 60552201_SKE-20-0000-C-0010, priced as bridges 1 and 2 (1500x1500), spaced at 20m centres (16no in total), average length 38m (25 - 48m), headwalls (no trough)
- 24 Inflation based on January 2018 start

2.5 Post call adjustments

- 1 Environmental barrier, 4839m at 3m high added
- 2 Sum for diversion of 132Kv high voltage cables added
- 3 Cost of rail bridge reviewed and amended
- 4 River Eye bridge, amended to single 35m span of similar construction to open span structures, increase in embankment length of 40m
- 5 Addition of 2000m of starter layer at 300mm thick

3.0 COST REVIEW

- 3.1 The quantities cannot be reviewed, as only the drawings highlighted in red above, have been issued with the review details
- 3.2 The brief provided requested only a high level evaluation of the cost review noting the limited amount of detail available and the timescale to produce this review.
- 3.3 No details of land costs have been provided as such this has not been considered as part of this review.
- 3.4 Comments raised regarding the rates & lump sums are based on previous experience & benchmarking against current ongoing construction projects.
- 3.5 Provisional allowances & lump sums

The following Table 3 details items that appear to be provisional or lump sums. Further details would be required to evaluate the sum included:

Table 3 – Assumed Provisional or Lump Sums

Demolition @ Sysonby farm	£100,000.00
Take up or down other items	£100,000.00
Interceptor	£75,000.00
Road markings	£61,000.00
Accommodation works for statutory undertakers	£1,000,000.00
Services protection slab	£1,080,000.00
Services diversion Electric	£630,000.00
Services diversion Gas	£52,500.00
Services diversion Water	£368,000.00
Bridge 1	£118,950.00
Bridge 2	£53,540.00
Bridge 3	£710,000.00
Bridge 4	£710,000.00
Bridge 5	£114,730.00
Bridge 6	£880,000.00
Bridge 7	£1,665,000.00
Box culverts to flood plain	£1,565,000.00
Landscaping	£352,000.00
Maintenance	£75,000.00
Ecology	£150,000.00
Diversion of 132 KV cables	£2,000,000.00
Total Lump sums & provisional items	£11,860,720.00

3.6 Preliminaries

Value £16,469,349

35% of the budget value has been included for preliminaries, although this seems high. 11 % has been included for construction risk & inflation which would not normally be included, therefore leaving 24% which is an acceptable level

3.7 Construction rates

Generally, the rates seem competitive & in line with other current schemes

Below are items which need clarification:

3.8 Series 200 Site Clearance

The site clearance & tree removal seem competitive; however the kerb rate seems low

3.9 Series 300 Fencing

The general fencing rates seem low but the gate costs appear high
the rate for environmental barriers seems high. Type & detail required to justify rate £300.00 per/m

The rate for double step stiles seems high. Type & detail required to justify rate £500.00 each

3.10 Series 400 Road Restraint Systems (Vehicle and Pedestrian)

All the rates seem competitive although the assumption that 75% of barriers are in filter drain needs checking once the design is finalised.

3.11 Series 500 Drainage and Service Ducts

The general drainage rates seem competitive; however the chambers & gully rates are low

The rates would need reviewing, once borehole details are available, to calculate the drains effected by existing ground water levels.

3.12 Series 600 Earthworks

The general rates seem competitive. The removal & tip on site is high

The import of capping etc seem competitive

The rate for removal of site of topsoil is high. @£15.00 per m3 , there is 35608m3 to remove from site; it is likely that the contractor will find a supplier to remove the topsoil free of charge as there

is always a demand for topsoil. If not LCC can generally supply a free tip in which case the rate could be much reduced.

3.13 Series 700 Pavements

The rate for sub base seems competitive.

The planning rate is on the high side, dependant on min visit restrictions.

Generally the pavement rates are in line with current scheme rates.

3.14 Series 1100 Kerbs, Footways and Paved Areas

The rates for kerbs & footways seem competitive

The CKD rates including outfalls, seem slightly high

3.15 Series 1200 Traffic Signs

The rates seem high. I assume passive posts have been included but may not be necessary in all areas

3.16 Series 1300 Road Lighting Columns

These rates seem high dependant on lighting column detail

3.17 Series 1400 Electrical Work for Road Lighting and Traffic Signs

All rates seem competitive with the exception of the feeder pillars

3.18 Series 2700 Statutory Undertakers

These rates seem high, dependant on details of location & ground conditions

3.19 Series 2500 Special Structures

Full details required to enable checking

3.20 Missing items

No allowance, or insufficient allowance, appears to have been made for the following items

- i. Traffic management has not been shown as an item. It would be assumed that this is included within another item, but this needs clarifying
- ii. Client risk register
- iii. Traffic modelling, TSCO, road closures and diversion routes
- iv. Very small allowance (£40K) for CCTV surveys
- v. Surveys of existing asset data, seems to be either at a low cost or excluded.
- vi. Safety cameras
- vii. Dewatering
- viii. Poor ground conditions

3.21 Risk allowance

A contractor's risk included of £2,352,764 seems high. A full breakdown of this should be obtained to check whether there is any overlap with the client's risk allowance. Client's risk does not appear to be included.

A specific risk should be included for:

- i. Low CBR values
- ii. Unchartered service diversions
- iii. High water table if applicable

3.22 Contractors fee

The fee seems reasonable at 6.79 %

3.23 VALUE ADDED TAX

No allowance has been made for any non-recoverable VAT. If required this should be allowed for.

4.0 SUMMARY & CONCLUSIONS

- 4.1 The overall budget appears to be in line with current market rates with the exception of the items covered above.
- 4.2 It is expected that the budget will be refined as the design is developed and more details are available following surveys.
- 4.3 Once the client's risk register is developed and added to the present budget, it is considered that this is a reasonable budget for the scheme.

REVIEW TEAM STATEMENT


I certify that the review has been carried out in accordance with the requirements set out by the client within the client brief.

Julian Thompson

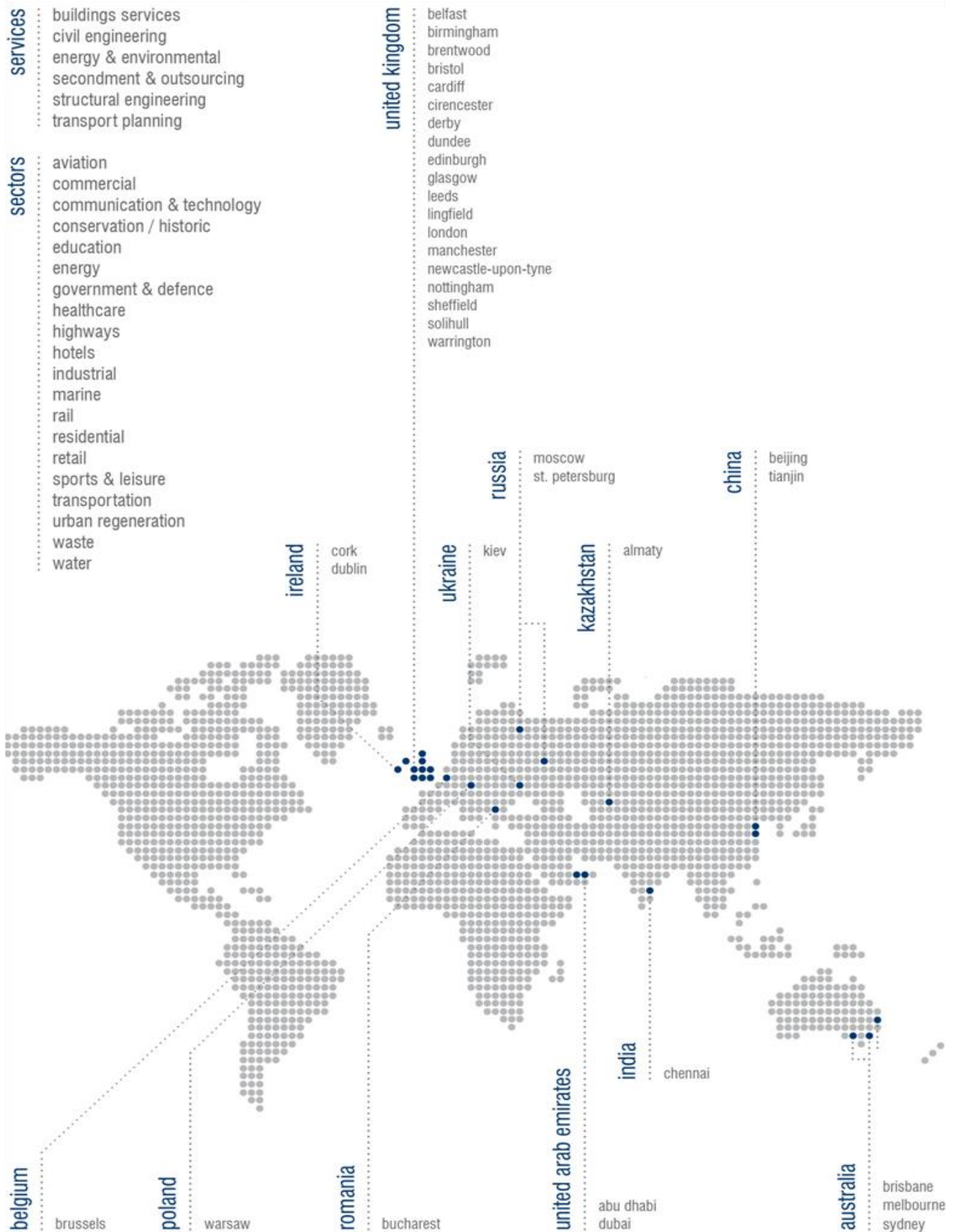
Commercial Manager

Waterman Aspen
5th Floor
1 Cornwall Street
Birmingham
B3 2DX

Signed :



Date: 10 December 2017



AECOM and Carillion response to Waterman MMDR Scheme Cost Review

The comments below relate to the respective section numbers in the Waterman report.

3.6 Preliminaries

Carillion included a 5% construction risk allowance to cover potential issues in the measure of quantities due to the level of design information available.

Traffic management costs are included in temporary works.

3.7 Construction rates

The rates used by Carillion in preparing the scheme cost are those from the Lincoln Eastern Bypass. This scheme is similar in length and type to the proposed MMDR.

3.8 Series 200 Site Clearance

Waterman consider the removal of kerb rate to be low. Carillion stand by this rate. In relative terms this is a small sum (£17.5k).

3.9 Series 300 Fencing

Carillion is comfortable with the stated rate. The environmental barrier rate is taken from a Managed Motorway scheme currently under construction.

3.10 Series 400 Road Restraint Systems (Vehicle and Pedestrian)

No comment.

3.11 Series 500 Drainage and Service Ducts

Carillion stand by their rates.

3.12 Series 600 Earthworks

Carillion consider the rate for removal of topsoil to be competitive. This is a conservative approach. This could be included as an opportunity if such a buyer were to be found.

3.13 Series 700 Pavement

The planing quantities are small and required at multiple locations. Plant will require mobilising on multiple occasions. Carillion stand by this rate.

3.14 Series 1100 Kerbs, Footways and Paved

CKD rates are reasonable based on Carillion's experience.

3.15 Series 1200 Traffic Signs

Traffic sign rates are reasonable based on Carillion's experience.

3.16 Series 1300 Road Lighting Columns

Rates are reasonable based on lack of column detail.

3.17 Series 1400 Electrical Work for Road Lighting and Traffic Signs

Electrical rates are reasonable based on Carillion's experience.

3.18 Series 2700 Statutory Undertakers

Carillion consider these rates to be reasonable based on the level of information available.

3.19 Series 2500 Special structures

No comments.

3.20 Missing items

- i. Traffic management is included under temporary works in preliminaries
- ii. We have prepared design and construction risk registers
- iii. Included within preliminaries
- iv. £240k has been allowed in total for GPR, CCTV surveys and trial pitting. This total is considered reasonable but the split may vary. CCTV surveys will only be required at the interfaces between the MMDR and existing side roads.
- v. Topographical survey will be complete prior to submission of OBC.
- vi. No safety cameras have been allowed for.
- vii. Dewatering is included within preliminaries under temporary works.
- viii. Included in construction risk register.

3.21 Risk allowance

The contractor's risk allowance is built up on their risk register. Carillion is comfortable with the level of detail included within the risk register.

3.22 Contractor's fee

No comment.

3.23 Value Added Tax

No comment

4.3 Client related items are covered in the design and construction risk registers