BIRMINGHAM CITY COUNCIL

A452 Chester Road Access Improvements

Construction Cost Estimate Review

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FAITHFUL GOULD
CONSTRUCTIVE EXPERTISE

Contents

Page

1.00	INTRODUCTION	1
2.00	BASIS OF ESTIMATE	1
3.00	CONSTRUCTION WORKS ESTIMATE REVIEW	2
4.00	COMPARISON OF ESTIMATES	4
5.00	CONCLUSION	5
6.00	APPENDICES	6

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1.00 INTRODUCTION

1.01 Faithful+Gould have been commissioned by Birmingham City Council to undertake an independent review of the capital cost estimate for the construction works element of the A452 Chester Road Access Improvements project undertaken by Birmingham City Council in June 2011.

1.02 The estimate, comprising the construction works and the statutory services element has been prepared in the total sum of £9,332,939, also including contingency, professional fees and risk and excluding VAT. This estimate supersedes previous estimates as the scope of works has changed.

2.00 BASIS OF ESTIMATE

2.01 The estimate has been based upon a drawing prepared by Birmingham City Council this is Drawing No CA_02041_008 Rev B.

2.02 The estimate is base dated to the 2nd Quarter 2011.

2.03 Items with in the estimate are generally based upon quantities taken from the drawing.

2.04 The rates and prices are sourced from current tendered contracts from comparable schemes that Birmingham City Council have tendered.

2.05 Contractor's preliminaries have been included at 33%. This allowance also includes traffic management costs.

2.06 An allowance for restricted working hours at 12.5% has been included.

2.07 An allowance has been made for miscellaneous works of 10% of the construction cost.

2.08 A contingency has been included this is based on 10% of the total of the construction works working restrictions, miscellaneous works, preliminaries and traffic management costs.

2.09 Works to statutory services have been included and costs are generally based on C3 estimate produced by the Statutory Undertakers

2.010 Professional fees are included and comprise fees for both preparation and supervision of the project. The allowance is calculated as percentage of the construction cost and the statutory services costs. The preparation costs are 7.5% and the supervision fees are 5%.

2.011 Risk has been included. The allowance is 5% on all of the costs, the construction works, the statutory services and fees.

2.012 All rates and prices excludes VAT

3.00 CONSTRUCTON WORKS ESTIMATE REVIEW

3.01 The estimate has been prepared to provide a capital cost estimate for a highway improvement scheme. The estimate incorporates the construction works, works to Statutory Undertakes Services and Professional Fees.

3.02 After a review of the following comments are made:

3.03 Site Clearance – The quantities and rates used generally appear to be reasonable given the nature of the project. The rate for general site clearance does appear a little high considering the nature of the site and the inclusion of other specific works items but in the overall scheme of things (i.e. low value works) it is not considered an issue.

3.04 Fencing, Gates and Stiles – The quantities and rates are considered reasonable and appropriate for the scheme

3.05 Safety Barriers – The quantities and rates are generally considered reasonable and appropriate for the scheme. However the rate of £383.38 used for the pedestrian guardrail is very high if this is for a 0.9-1.2m high pedestrian guardrail.

3.06 Drains and Services – The rates used are considered reasonable and appropriate for the scheme. The quantities for new pipework; 800m of 225mm diameter pipe and 600m of 150mm diameter pipe seem high given the majority of the carriageway reconstruction is contained just to the Spitfire roundabout. However, as this work is not defined yet the allowance could be deemed reasonable.

3.07 Earthworks - The quantities and rates are considered reasonable and appropriate for the scheme

3.08 Carriageway - The quantities and rates are generally considered reasonable and appropriate for the scheme. The rate of £39.14/m3 for Type 1 sub-base is thought to be high given the location, we would have expected to see a rate at or below £30.00/m3.

3.09 Kerbs and Footways - The quantities and rates are generally considered reasonable and appropriate for the scheme. The overall quantity of the kerbs could be on the low side given the amount of the realignments and re-construction to be done.

3.010 Traffic Signs – A lump sum allowance has been made for these works. This appears reasonable given the nature of the works

3.011 Road Markings - The quantities and rates are considered reasonable and appropriate for the scheme

3.012 Traffic Signal Installations - The quantities and rates are considered reasonable and appropriate for the scheme

3.013 Lighting - The quantities and rates are generally considered reasonable and appropriate for the scheme. However it could b considered that the number of lighting columns is high.

3.00 CONSTRUCTON WORKS ESTIMATE REVIEW (Cont'd)

3.014 Landscape - The quantities and rates are considered reasonable and appropriate for the scheme. However the items that make up this section are different to what would be expected to be seen, especially in respect to hydro-seeding and wildflower seeding.

3.015 Working Restrictions/Miscellaneous Works/Contractors Preliminaries/Traffic Management:

- An allowance of 12.5% has been made for working restrictions which would incorporate restricted daytime working hours and possible night-time or weekend work. The amount allowed is considered reasonable given the nature and location of the scheme and the volume of traffic that flows through site which will have an affect on how the works are constructed.
- An allowance of 10% has been made for miscellaneous works. As the majority of the estimate is made up of quantified items with very few specific spot items for known works it is considered that this item is a reasonable allowance.
- Contractors Preliminaries and Traffic Management cost have been allowed for in one item. An allowance of 33% has been made. This is considered to be reasonable for a scheme of this size and nature

3.016 Contingency – A contingency of 10% has been added. As a risk allowance has been made on the whole scheme cost this would not normally be needed but as the risk allowance is low it is considered that the contingency allowance is reasonable.

3.017 Statutory Undertakers Services – This section has been calculated generally using C3 estimates obtained from the Statutory Undertakers themselves. For a couple of items where a C3 estimate has not yet been obtained a provisional sum has been added and this is based on a C3 estimate based on earlier version of the scheme. This is considered a reasonable allowance.

3.018 Fees – Fees are broken down into Preparation Fees and Supervision Fees, there is no breakdown of the fees but an allowance of 12.5% has been made and this is considered reasonable for the nature works.

3.019 Risk – In addition to the contingency of the construction works an allowance of 5% for risk has been allowed made for the whole of the scheme. Given the nature of the scheme this appears to reasonable.

3.020 A risk register has been produced; this is from an earlier exercise but with the exception of a few items; i.e moving of the Spitfire Island sculpture; the register is still valid.

3.021 TUBA summary – the TUBA summary included all the heading above but with an allowance for an inflation on one version of the spend profile. The BCIS produced All in Tender Price Index has been used. As this is the most relevant indices that forecasts forward this is considered a reasonable approach.

4.00 COMPARISON OF ESTIMATES

4.01 The following is a comparison of the Birmingham City Council with an independent estimate carried out by Faithful+Gould using Drawing CA_02041_008 Rev C

	BCC Estimate	F+G Estimate
Site Clearance	£47,467	66,686
Fencing, Gates and Stiles	£5,092	10,000
Safety Barriers	£155,864	64,900
Drains and Services	£204,676	135,000
Earthworks	£653,285	718,114
Carriageway	£731,949	993,290
Kerbs Footways	£385,081	404,176
Traffic Signs	£15,000	13,600
Road Markings	£22,081	31,476
Traffic Signal Installations	£232,670	370,000
Lighting	£230,706	89,900
Landscape	£64,151	57,356
Series 1900	£30,144	Included above
Sub-Total	**2,778,167**	**2,954,497**
Working Restrictions	£347,271	235,223
Misc Works (10% - BCC only)	£277,817	0
Prelims/TM (33% - BCC only)	£916,795	863,531
Sub-Total	**4,320,049**	**4,053,251**
Contingency (10%)	432,005	405,325
Sub-Total	**4,752,054**	**4,458,576**
Stats Works	3,002,179	3,002,179
Prep Fees	581,568	895,291
Supervision Fees	387,711	Inc above
Land	165,000	165,000
Sub-Total	**8,888,514**	**8,521,047**
Risk at 5% of overall scheme	444,426	426,052
Grand Total	**9,332,939**	**8,947,099**

To aid comparison a risk item, land item and the Stat's works costs have added to the F+G estimate.

F+G have not included a specific allowance for miscellaneous works as it is deemed to be included in the main body of the estimate. However it is considered a reasonable addition by BCC given the method in which the estimate has been produced.

Although there are differences in the individual components of the estimates the overall difference is under 4%. The differences are down to a different view being taken on the extent of the undefined works (i.e. not shown on the drawing) rather than a fundamental difference in the rates and prices used.

5.00 CONCLUSION

5.01 It is considered that the estimate is a robust, reasonable and appropriate for this proposed scheme

6.00 APPENDICES

6.01 APPENDIX A - F+G INDEPENDENT ESTIMATE SUMMARY

Appendix A

F+G Independent Estimate Summary

Elemental Summary for Chester Road

Ref	Element		Amount £	%
01-S	**Preliminaries**		**681,720**	**7.62**
01-S0100	Preliminaries		681,720	7.62
		Total	**681,720**	**7.62**
02-S	**Roadworks General**		**859,700**	**9.61**
02-S0200	Site Clearance		66,686	0.75
02-S0300	Fencing		10,000	0.11
02-S0400	Road Restraint Systems (Vehicle and Pedestrian)		64,900	0.73
02-S0600	Earthworks		718,114	8.03
		Total	**859,700**	**9.62**
03-S	**Main Carriageway**		**1,532,466**	**17.13**
03-S0500	Drainage and Service Ducts		135,000	1.51
03-S0700	Pavements		993,290	11.10
03-S1100	Kerbs, Footways and Paved Areas		404,176	4.52
		Total	**1,532,466**	**17.13**
06-S	**Signs, Motorway Communications and Lighting**		**504,976**	**5.64**
06-S1200	Traffic Signs and Road Markings		415,076	4.64
06-S1300	Road Lighting Columns, Brackets & CCTV Masts		55,000	0.61
06-S1400	Electrical Work for Road Lighting and Traffic Signs		34,900	0.39
		Total	**504,976**	**5.64**
07-S	**Landscape and Ecology**		**57,356**	**0.64**

Elemental Summary for Chester Road

Ref	Element		Amount £	%
07-S3000	Landscape and Ecology		57,356	0.64
		Total	**57,356**	**0.64**
	Sub Total		3,636,217	40.64
	Traffic Management (5%)		**181,811**	**2.03**
	Restricted Working Hours (7.5%)		**235,223**	**2.63**
	Contingency (10%)		**405,325**	**4.53**
	Sub Total		4,458,576	49.83
	Works to Statutory Undertakers Services		**3,002,179**	**33.56**
	Works to and or diversion of Statutory Undertakers Services		3,002,179	33.55
		Total	**3,002,179**	**33.55**
	Land (as BCC figure for comparison)		**165,000**	**1.84**
	Fees - Design and Site Supervision		**895,291**	**10.01**
	Sub Total		8,521,047	95.24
	Risk 5% (as BCC figure for comparison)		**426,052**	**4.76**
		Total	**8,947,099**	**100.00**

Key Qualifications and Assumptions

The following assumptions have been made in the compilation of this estimate

General

- Base date for estimate 2Q 2011
- An allowance has been made for restricted working hours.
- All areas of new carriageway will be full construction. Areas adjacent of carriageway (i.e. existing surface) adjacent to areas of full construction
- will have the surface course planed off and replaced
- Site levels will not alter significantly
- Drainage – the majority of the drainage work will occur on Spitfire Island with other areas limited generally to minor gulley realignments
- Kerbs replaced when full construction/realignment taking place
- No works to structures required

Exclusions

No allowance has been included in this estimate for the following items

General

- VAT
- Unforeseen artificial obstructions or voids
- Disposal of hazardous material
- Demolition of structures/boundary walls on land required for scheme.
- Any costs associated with CPO and land purchase
- Excavation and disposal of rock
- Compensation for adjacent commercial properties or any 3rd party affected by the works.
- Statutory Fees
- Finance Costs
- Local Authority Planning Fees
- Other local Authority Charges and Fees

Approximate Quantities for Chester Road

Description	Quantity	Unit	Rate £	Amount £
Preliminaries				
Preliminaries	78	Wks	8,740.00	681,720.00
Total				681,720.00

Approximate Quantities for Chester Road

Description	Quantity	Unit	Rate £	Amount £
Site Clearance				
Site Clearance - General; including sign, street furniture etc	8.94	Ha	1,500.00	13,410.00
Take tree and remove trunk, disposal to tip; backfilling with Type	10	No	550.00	5,500.00
Take up existing kerbs and dispose	7,616	m	6.00	45,696.00
Take up and dispose of to off site tip traffic signals	1	Item	500.00	500.00
Take up and dispose of to off site tip crash barrier	79	m	20.00	1,580.00
Total				66,686.00
Fencing				
Allowance for miscellaneous fencing works	1	Item	10,000.00	10,000.00
Total				10,000.00
Road Restraint Systems (Vehicle and Pedestrian)				
Pedestrian Guardrail; 1200mm high; replacement of existing	649	m	100.00	64,900.00
Total				64,900.00
Earthworks				
Excavation; acceptable material	2,367	m3	5.00	11,835.00
Excavation; unacceptable material	9,467	m3	5.00	47,335.00
E.O hard dig	1,309	m3	20.00	26,180.00
Disposal; acceptable material; to tip off-site	2,367	m3	20.00	47,340.00
Disposal; unacceptable material; to tip off-site	9,467	m3	40.00	378,680.00
Carried Forward				511,370.00

Approximate Quantities for Chester Road

Description	Quantity	Unit	Rate £	Amount £
Brought Forward				511,370.00
Compaction of formation	15,564	m2	1.00	15,564.00
Topsoil; 100mm thick; imported (Provisional)	3,475	m3	20.00	69,500.00
Capping; 450mm thk	5,384	m3	20.00	107,680.00
Fill; imported acceptable material (Provisional)	500	m3	28.00	14,000.00
Total				718,114.00

Approximate Quantities for Chester Road

Description	Quantity	Unit	Rate £	Amount £
Drainage and Service Ducts				
Allowance for drainage works including raising/lowering existing covers	1	Item	135,000.00	135,000.00
Total				135,000.00
Pavements				
Sub-base; type 1; 150mm thick	1,795	m3	28.00	50,260.00
Full Construction; 200mm base; 60mm binder; 40mm surface course	11,964	m2	46.00	550,344.00
E.O. for green coloured surface course to bus lane	300	m2	20.00	6,000.00
Stepped joint construction	1,000	m	18.00	18,000.00
Plane off existing surface; 40mm depth; to carriageway	26,981	m2	2.50	67,452.50
Tack coat; to carriageway	26,981	m2	0.50	13,490.50
40mm surface course; re-surfacing to carriageway	26,981	m2	8.50	229,338.50
Anti-skid surfacing; to crossings	4,198	m2	12.00	50,376.00
Anti-skid surfacing; highlight bus stops	315	m2	12.00	3,780.00
Anti-skid surfacing; to hatching area on roundabouts	354	m2	12.00	4,248.00
Total				993,289.50
Kerbs, Footways and Paved Areas				
Kerbs; HB2, DR & BN etc	7,526	m	22.00	165,572.00
Trief Kerbs; to bus stops	220	m	100.00	22,000.00
Carried Forward				187,572.00

Approximate Quantities for Chester Road

Description	Quantity	Unit	Rate £	Amount £
Brought Forward				187,572.00
Flush kerb; to parking bays	324	m	15.00	4,860.00
Surfacing; to footpaths and paved areas; 20mm surface; 40mm binder; 150mm sub-base	6,461	m2	22.00	142,142.00
Re-surfacing existing footpath surfaces; comprising 20mm surface course, tack coat and planing existing	6,204	m2	10.50	65,142.00
E.O for tactile paving at crossing points	223	m2	20.00	4,460.00
Total				404,176.00

Approximate Quantities for Chester Road

Description	Quantity	Unit	Rate £	Amount £
Traffic Signs and Road Markings				
Road Marking; Intermittent white line	5,068	m	0.75	3,801.00
Road Marking; zigzag	2,260	m	1.00	2,260.00
Road Marking; letters/numbers/symbols/arrows	307	No	50.00	15,350.00
Road Markings; continuous white line	124	m	1.00	124.00
Road Marking; yellow box junction	738	m2	1.60	1,180.80
Traffic Signs; general; assume 8 per roundabout	32	No	250.00	8,000.00
Bollard; internally lit (Provisional)	2	No	300.00	600.00
Traffic Signals; pedestrian crossing; per pole	51	No	5,000.00	255,000.00
Traffic Signals; to Spitfire Island	13	No	5,000.00	65,000.00
Traffic Signals; to Jn 5 roundabout on inner radius	9	No	5,000.00	45,000.00
Allowance for connecting new traffic signals into system; at Junction 5	1	Item	5,000.00	5,000.00
Road studs to crossing	876	No	10.00	8,760.00
Bus Gate	1	No	5,000.00	5,000.00
Total				415,075.80
Road Lighting Columns, Brackets & CCTV Masts				
Lighting Column	35	No	1,250.00	43,750.00
Replace luminaire and bracket arm; to existing lighting colum (Provisional)	25	No	450.00	11,250.00
Carried Forward				55,000.00

Approximate Quantities for Chester Road

Description	Quantity	Unit	Rate £	Amount £
Brought Forward				55,000.00
Total				55,000.00
Electrical Work for Road Lighting and Traffic Signs				
Cabling	1,000	m	7.50	7,500.00
Duct; 100mm dia plastic	1,000	m	25.00	25,000.00
E.O above duct for concrete surround	80	m	30.00	2,400.00
Total				34,900.00

Approximate Quantities for Chester Road

Description	Quantity	Unit	Rate £	Amount £
Landscape and Ecology				
Grass Seeding	23,356	m2	1.00	23,356.00
Trees; to replace trees during works	20	No	450.00	9,000.00
Allowance for general planting	1	Item	25,000.00	25,000.00
Total				57,356.00

Approximate Quantities for Chester Road

Description	Quantity	Unit	Rate £	Amount £
Works to and or diversion of Statutory Undertakers Services				
Virgin	1	Item	338,379.42	338,379.42
National Grid	1	Item	434,000.00	434,000.00
Central Networks	1	Item	1,000,000.00	1,000,000.00
LineSearch - Geo Fishergerman	1	Item	120,000.00	120,000.00
Easynet - BSkyB	1	Item	150,000.00	150,000.00
BT - TBA	1	Item	500,000.00	500,000.00
Cable & Wireless - TBA	1	Item	388,500.00	388,500.00
STW - TBA	1	Item	71,300.00	71,300.00
Total				3,002,179.42

AUTHORISATION
Approved for issue …… Job manager Date……

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CONSTRUCTIVE EXPERTISE

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