



Managing Construction and Operational Risks – A worldwide technical perspective

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Date: May, 2014

Contents

- Currie & Brown
 - Worldwide strength
 - Teams
 - Clients
 - Services

- Managing Technical Risk pre-Financial Close
- Managing Technical Risk in Construction
- Managing Technical Risk in Operation
- PFI/PPP policy advice



Currie & Brown

- A world class international construction and infrastructure Consultancy
- A team of over 600 professionals
- One of the world's most experienced concession/PPP technical and financial consultants
- One of the UK's top-ranking PFI/PPP concessions technical advisors
- Over 15 years' PPP experience in 200 operational projects worldwide
- Local knowledge with international expertise

Worldwide Strength

Operating from five key strategic hubs ...
Local knowledge with international experience,



Worldwide centres of excellence



Multidisciplinary teams

Electrical engineers

Civil engineers

Mechanical engineers

Cost engineers

Facility managers

Financial economists

Mathematicians

Lawyers

Architects

Insurance advisors

Building surveyors

Sector specialists

PFI/PPP Clients

Typically instructed by:

Funders

Local Authorities

Pension Funds

SPV's

National

Government

Bond Assurers

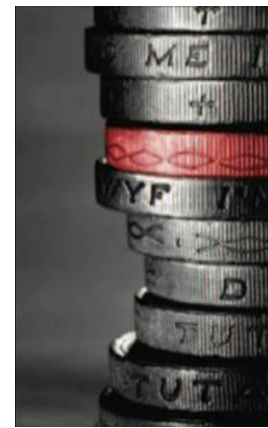
Financial

Advisors

Lawyers

Contractors

Insurers



We advise on

PPP strategy

PPP programme

Legal framework

Financial modelling

Technical specifications

Procurement process

Independent Certification

Construction management

Operational monitoring

Benchmarking

Payment mechanisms

Termination clauses

Risk analysis

Tender management

Construction monitoring

Cost management

Commissioning
certification

Dispute resolution

Variations/Change control

Managing Technical Risk pre Financial Close

Pre Contract Due Diligence

- A substantial risk review and appraisal of all aspects of the contract
 - principal legal agreements
 - construction and operations contracts
 - statutory, technical, financial and insurance risks
- The example is a \$1bn Major Active Hospital
- The purpose of the due diligence process is to reduce or transfer risks as appropriate
- The purpose of the report is to identify any remaining risks at Financial Close

Technical Due Diligence

In respect of

**Pinderfields & Pontefract
Hospitals PFI Project**

Prepared for

**Financial Guaranty Insurance
Company "FGIC";
European Investment Bank "EIB"
and
Deutsche Trustee Company
Limited "Trustee"**

June 2007



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Technical Due Diligence Report – Pre Financial Close
Pinderfields & Pontefract Hospitals PFI Project

Contents

Executive Summary.....	5
List of Abbreviations	19
1.0 Introduction.....	22
2.0 Interested Parties	23
2.1 Introduction	24
2.2 Special Purpose Company (“SPC”).....	26
2.3 Contractor	27
2.4 FM Service Provider - Haden Building Management Limited	30
2.5 Core Design Team	32
2.6 Caps and Liabilities	35
2.7 General Construction Commentary	43
2.8 Conclusion	46
3.0 Project Description	48
3.1 Project Details	48
4.0 Planning Permission and Related Issues.....	53
4.1 Introduction	54
4.2 Planning Strategy.....	56
4.3 Outline Planning Approval	58
4.4 Planning Conditions	60
4.5 Planning Status	65
4.6 Planning Risks	66
4.7 Listed Building Consent	67
4.8 Section Agreements.....	68
4.9 Statutory Approvals.....	71

5.0	Surveys and Investigations	76
5.1	Introduction	77
5.2	Asbestos Surveys	79
5.3	Archaeological Surveys.....	81
5.4	Building Condition Surveys	84
5.5	Site Investigations	85
5.6	Environmental Statements.....	88
5.7	Flood Risk Assessment.....	90
5.8	Reptile Survey	93
5.9	Bat Survey	95
5.10	Tree Surveys.....	98
5.11	Acoustic Survey	101
5.12	Traffic Assessments.....	102
5.13	Unexploded Ordnance Clearance.....	108
5.14	Conclusion	110
6.0	Design Matters	111

6.1	Design Philosophy	112
6.2	Mechanical and Electrical Services	122
6.3	Quality Assurance	126
7.0	Construction Cost.....	131
7.1	Introduction	132
7.2	Contract Sum Analysis.....	133
7.3	Elemental Analysis.....	135
7.4	Cashflow	140
7.5	Conclusion	142
8.0	Programme.....	143
8.1	Introduction	144
8.2	Programme Detail	144
8.3	Durations	145
8.4	Phasing & Sequence.....	147
8.5	Design and Procurement	148
8.6	Commissioning.....	148
8.7	Major Risks	149
8.8	Conclusion	150

9.0	Facilities Management	151
9.1	Introduction	152
9.2	Contractual requirements.....	154
9.3	FM Services Provider (Hard FM and Soft FM).....	155
9.4	Services Mobilisation	156
9.5	Transitional Services.....	157
9.6	Management Structure.....	161
9.7	Service Requirements.....	162
9.8	Facilities Management Services Costs	190
9.9	Benchmarking and Market Testing	192
9.10	Personnel	196
9.11	Conclusion	198

10.0	Payment Mechanism	199
10.1	Introduction	200
10.2	Calculation of the Service Payments	202
10.3	Service Failures	203
10.4	Quality Failures	204
10.5	Failure Events	205
10.6	Review of Weightings – Part C	209
10.7	Service Failure Points	210
10.8	Volume Adjustment.....	211
10.9	Termination	212
10.10	Energy	216
10.11	Greenhouse Gas Emissions	219
10.12	Conclusion	221

In Conclusion

- Pre-construction technical due diligence is an essential risk identification and management process within PPP transactions
- Establish and run projects with lender due diligence in mind, robust processes, strong governance and active risk management
- If you plan for lender due diligence and embrace it you can create a smoother and better transaction process

Managing Technical Risk During Construction

- Programme review
- Design review
- Value engineering
- Cost/drawdown/certification
- Health & Safety
- QA Compliance/certification
- Statutory requirements/licences
- Commissioning integration
- FM integration
- Operations integration
- Completion Certification
- Phased handovers
- Defects/snagging management
- Lender reporting
- Risk management

Managing Technical Risk in Construction

No construction project is risk free

Construction risk cannot be ignored.....but it can be managed, minimised, shared, transferred or accepted.

High technology construction projects have more risk than low technology construction, and need greater management skill.

With good pre construction due diligence and good construction management the construction risks can be managed

Managing Technical Risk in Operational PPP's

Compliance with the Operating Contract

- Reporting requirements of the project documentation
- Termination/default thresholds
- Health & Safety
- Insurance events
- Statutory requirements
- Performance Measures and Performance Deductions
- Performance audits
- Benchmarking and Market Testing
- Erosion of Caps on Liability
- Planned Preventative Maintenance (PPM)
- Lifecycle Maintenance Plans and budget
- Lifecycle Reserve accounts
- Change/variation technical risk reviews

- Review of insurance events and insurance amounts assist lenders on technical interface with legal, financial, insurance advisors
- Review Planned Preventative Maintenance
- Monitor and audit lifecycle maintenance against lifecycle financial model
- Review and report on material variations for change in risk
- Review and report on any contractual disputes authority/spv/operator/subconsultant

M25 DBFO – London (2007-2008)

C & B was appointed as Technical Advisor for Connect Plus JV (Skanska, Balfour Beatty, Atkins, Egis), one of three short-listed Joint Ventures to bid for the concession to revamp, widen and maintain the M25 London orbital over a 30-year period contract. This is a £5,000 million DBFO deal.

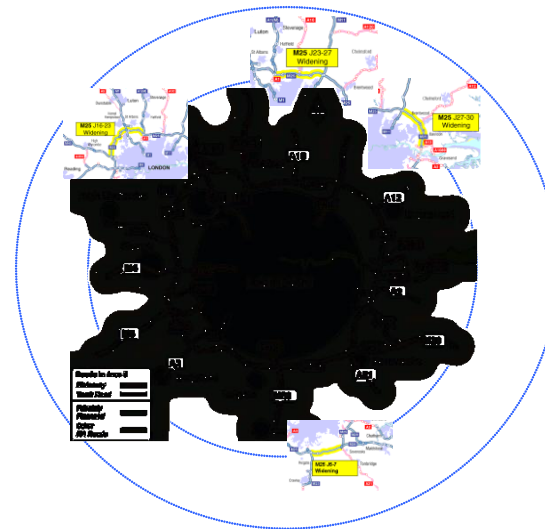
Currie & Brown delivered the Technical Due Diligence Report with the purpose of obtaining support to the proposal from a Rating Agency, as requested by the contracting authority (Highways Agency) for the tender stage.

The winning consortium will be training over the currently denominated Area 5 of the infrastructure, which maintenance is undertaken at the moment by the actual HA. The SPV of the project will be responsible for:

- Operation and Maintenance (O&M) of the Project Road; and
- A programme of capital works, including widening of up to approximately 102 km of the existing M25, generally to dual 4 lane standard.

Key risks:

- Statutory Planning
- Environmental
- Lack of records
- Vehicle Overloading
- Climate change
- Materials Benchmarking
- Resource availability
- Legislation
- Traffic forecasting
- Technology
- Lifecycle costing



A1M1 and M40 Due Diligence – England (2006)



Currie & Brown was appointed by SMIF as Technical Advisor to carry out the due diligence on two road projects of the secondary market. Services included the assessment of:

- Contractual structure
- Capability of the contractors
- Contractual requirements
- Payment mechanism
- Traffic forecasts
- Consortia performance tracking to date
- Review of operation and life cycle investments plans



KEY DATA	
Length of Project Road	122km
Est. Construction Cost	£88 Mn
Contract Award	8 Oct 1996
Commencement	6 Jan 1997
First Opened to Traffic	22 Dec 1998
End of Contract Period	5 Jan 2027
DBFO Company	UK Highways M40 Ltd
Type of Road	Motorway
Shareholders	Laing Roads and SMIF
Contractors	John Laing, Hyder, Tarmac Caisse des Depots et Consignations, Transroute International SA

A1-M1

- Initial CAPEX £234m
- 18km new motorway construction
- 12km widening of existing road
- 2 motorway interchanges and 5 junctions
- 2 tunnels and 1 viaduct

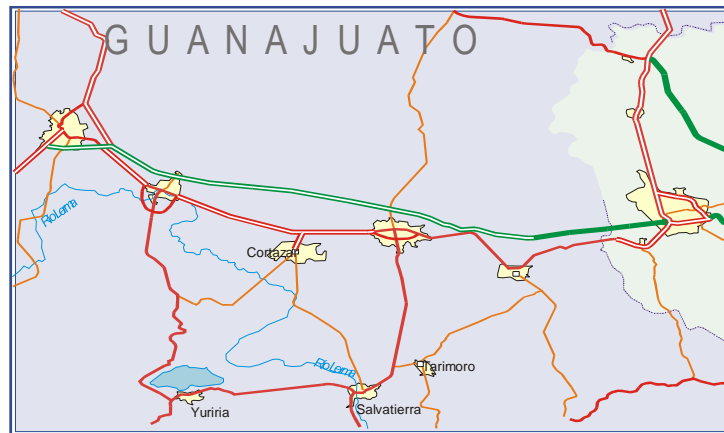
M40

- Initial CAPEX £65m
- Contract included the widening of the existing infrastructure between junctions A1 and A3 and the maintenance of the whole motorway (total length of 123 km).
- One of the first roads procured under a PPP scheme in the UK

Queretaro – Irapuato highway PPP project – Mexico (2005) - Mexico

Currie and Brown was Appointed in 2005 as the Mexican Government's Technical Advisor for the drawing up of the output specifications of the Querétaro – Irapuato highway PPP project.

- The works includes the refurbishment of the 92.979 km long road.
- The works also involved the construction of 8 pedestrian bridges and 19 traffic bridges.
- The payment mechanism is based terms of availability and traffic use.



Madrid Calle 30 (1/11) - Spain



Currie & Brown was appointed as Technical Advisor by joint project funders Dexia Sabadell, Société Générale and Caja Madrid for a major road project in the Spanish capital. The three banks acted as Mandated Lead Arrangers.

Commissioned by the Madrid City Council, the term of the contract is 35 years and involves the major refurbishment and upgrade of Madrid's inner orbital, the M30.

This partnership is owned by Madrid City Council (80%) and ACS/Ferrovial (20%), selected by competitive bidding.



The aim of the works undertaken

- Refurbish the road
- Reroute major sections of it through tunnels under certain city areas.
- Redeveloped the abovementioned areas into green park areas, footpaths & cycle paths.

Construction Key Risks:

- Technical Construction
- Environmental
- Geology
- Resource availability
- Traffic forecasting

The Pinderfields and Pontefract Hospitals – £312 million



This PFI was one of five schemes selected by the Prince's Foundation and NHS Estates to pilot high-quality healthcare design. It included a DBFO of Pinderfields General Hospital as a major acute centre, with integral ambulatory care and diagnostic centre, plus redevelopment Pontefract General Infirmary as an ambulatory care and diagnostic centre, with facilities for accident and emergency and maternity.

We validated the original construction cost, reviewed business case objectives, reported on procurement strategies/contract documentation, assessed value engineering and derogations, and developed service level agreements and payment mechanisms. At Pinderfields, we advised the SPV and lender about a major change to introduce a charity-funded spinal rehabilitation unit into the site. By acting proactively (and “pro bono”) we supported the SPV and lenders through a contractually-challenged major variation.

Construction Key Risks:

- Preserved building
- Spatial constraints
- Phased completions
- Environmental conditions
- Energy Targets

Prisons - First wave of French Prison Procurement Programme

Currie & Brown has acted as Lender's Technical Adviser on the first wave of the French prison procurement programme.

Construction Key Risks:

- Bespoke construction process
- Onerous design requirements
- Very short commissioning programme
- Operations staff training
- High staff turnover
- Political interference
- Union pressures
- Very sensitive payment mechanism
- Fraud allegation



The AMOTMJ (Agence de maîtrise d'ouvrage des travaux du ministère de la Justice) acted as the procuring authority for this project which represents the first wave of France's first prison PPP-like scheme known as AOT/LOA - a programme of 18 prisons for up to 8,900 inmates valued at €900m (US\$1.05bn) (IJ News, 9 March 2004).

“Arigato gozaimas”

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