



Trial project: Archbishop Beck	New delivery model / procurement route: Two Stage Open Book
Cost savings achieved: 20%	
Other key benefits identified / achieved: Improved quality and cost control, additional employment and skills commitments, streamlined preconstruction phase processes, innovation through tier 2 early engagement and increased use of local businesses.	

Trial report sequence:	Kick off meeting	Brief / Team Engagement	Decision to Build	Build and Occupy
Cost saving basis:	Outline saving aspiration	Challenging cost target	Award Cost	Outturn Cost

Trial project details	
Project title	Archbishop Beck Catholic Sports College
Client department	Liverpool City Council, BSF and Capital Development
Project value	£15.9m (pre-saving)
Form of project	New Build School with associated sports facilities and infrastructure.
Main contractor	Willmott Dixon Construction
Lead designer	Sheppard Robson
Key suppliers	Mouchel (Structural, Mechanical & Electrical, cost) D Morgan (Groundworks) A&B (M&E Specialist Works) Cara & Metsec (Steel Frame)



Trial project summary:

Scape has appointed Willmott Dixon to a national framework established for delivery of projects on a Two Stage Open Book basis. Liverpool City Council previously used Willmott Dixon through the Scape Framework for construction of their Notre Dame School Project. Lessons learned on this project have been taken forward on Archbishop Beck.

Liverpool City Council has set a brief for achievement of 20% savings against comparable prices in 2009/10. LCC worked to a strict programme with additional emphasis on the engagement of local businesses, and the development of local employment and training opportunities.

In this connection, Willmott Dixon has worked collaboratively with Kier and Morgan Sindall who are engaged on other Liverpool education projects. Innovations have been achieved through preconstruction phase design, value engineering and risk management activities undertaken by Willmott Dixon, with Tier 2 supply chain members such as Mouchel, A&B, D Morgan, Cara & Metsec. These have generated savings and innovations that are currently being evaluated. Liverpool, Scape and Willmott Dixon run a system of reviewable design data and subcontractor procurement that will enable forensic analysis of the timing and inter-connections of each parties' contributions to the overall project.



Project summary

Overview

The Archbishop Beck project comprises the construction of a new build school, comprising a three-storey school building, a link building and sports hall for the Archbishop Beck Catholic Sports College including associated external works, car park and sub-station with an approximate gross internal floor area of 12,163 square metres.

The client, Liverpool City Council, has appointed Willmott Dixon Capital Works Limited as Tier 1 Contractor under the terms of a national framework operated by Scape, and this has enabled the team to adopt lessons learned on the recently completed Notre Dame School project.

Project time line

- Liverpool City Council internal business case – February 2012
- Selection of Scape/Willmott Dixon – February 2013
- Brief and team engagement – March 2013
- Commencement of preconstruction phase activities – March 2013
- Agreement of price and programme for construction phase following development of designs and supply chain and risk profile – September 2013
- Commencement of construction phase – September 2013

Key Features

- Substantial cost savings
- Innovative designs
- Flexible use of space
- Tight construction programme with improved programme certainty
- Collaborative working by integrated team, across Client and Contractor teams, as well as other programme contractors
- Commitment to local economy
- Improved employment and skills outputs

Client objectives and vision

Overview

Liverpool City Council set a brief for achievement of 20% savings against comparable projects in 2009/2010 so that it could maximise the use of available funding. The project benefited from an innovative funding package put together by the City to ensure delivery of projects that had originally been planned as part of the BSF programme. Liverpool City Council selected Willmott Dixon through the Scape Framework, having previously appointed the same team on design and construction of its Notre Dame School project.

Liverpool City Council set a strict programme for completion of the Archbishop Beck project, improving on timescales achieved in relation to the Notre Dame School project, and placed particular emphasis on engagement of local businesses and the development of local employment and training opportunities.

New procurement techniques and processes

Scape provided Liverpool City Council with access to their national framework under which Willmott Dixon is the sole Tier 1 Contractor for projects of this size. The Scape Framework incorporates a bespoke system for ordering preconstruction phase works and services, including pro-forma Project Request Form and Project Order Form. These forms were used to set out the works and services required from Willmott Dixon and their Tier 2/3 Subcontractors and Suppliers in order to build up the design, supply chain, risk profile and construction programme ahead of commencement of start on site. They included specific gateways linked to RIBA Stages.

The construction phase contract was NEC3 Option C.

Early Contractor Involvement commenced when Willmott Dixon worked with its appointed sub-consultants, Sheppard Robson and Mouchel, on developing design solutions and also with specialist subcontractors who had previously been engaged on the Notre Dame School project so as to work up preferred solutions.

The collaboration continued as Tier 2/3 Subcontractors and Suppliers were successfully appointed under mini-competitions run by Willmott Dixon and supported by Scape. Willmott Dixon obtained proposals for improved design, cost savings, employment and skills



contributions and other added value from prospective Tier 2/3 Subcontractors and Suppliers as part of their selection process and, following selection, during the remainder of the preconstruction phase.

Cost targets and savings

Liverpool City Council set a target of 20% cost savings to be established in advance of commencement on site by reference to comparable projects in 2009/2010. Taking into account value indicators for similar projects, cost savings achieved results of 26% from a rate of £1,950 per square metre anticipated for a comparable project, to a rate of £1,438 per square metre achieved in relation to Archbishop Beck by the time of establishing an agreed price.

The means by which these savings have been achieved include:

- Lessons learned from the Notre Dame School project.
- Joint working by Willmott Dixon with Tier 2/3 Subcontractors and Suppliers in developing innovative proposals at the point of selecting Tier 2/3 Subcontractors and Suppliers.
- Further joint working by Willmott Dixon with its Tier 2/3 Subcontractors and Suppliers and with Liverpool City Council throughout the contractual preconstruction phase.

Percentage saving: 26%

Baseline benchmark: £1,950 per square metre for a comparable project in 2009

Target benchmark: £1,450 per square metre

Actual benchmark: £1,438 per square metre

Specific savings:

- De-bundling certain elements of precast to avoid additional layers of profit and overheads, wastage and more efficient co-ordination – savings of approximately £45,000
- Extensive rounds of value engineering in respect of mechanical and electrical designs, with the preferred specialist subcontractor A&B Engineering Ltd and M&E consultant Mouchel contributing to a contract saving of £258,688.
- Removal of suspended ceilings and adding additional acoustic treatments produced a saving of approximately £21,068.
- Recycling of waste materials for re-use

on site, combined with re-design of external landscaping resulted in a saving of £55,164.

- Installation of under-floor heating in the ground floor slab to allow earlier installation and rationalisation of the heating system produced a saving of £31,234.
- Acquisition and re-use of surplus bleacher seating from another school produced a contract saving of approximately £18,564.

Additional benefits

The project primarily benefitted from lessons learned on the previous Notre Dame School project. It also contributed to the City-wide initiative led by Liverpool City Council for the engagement of local Tier 2/3 Subcontractors and Suppliers and improvement of local employment and skills commitments.

In addition, the preconstruction phase work led by Willmott Dixon with sub-consultants Sheppard Robson and Mouchel enabled Tier 2/3 Subcontractors and Suppliers to offer innovative solutions that improved design as well as saving time and money.

Examples of additional benefits achieved through Two Stage Open Book include:

- Appointment of D Morgan Plc from the city region to provide groundwork and offer innovations through reduced drainage runs and size of attenuation units, also saving cost and time by installing precast ground beams sourced separately by Willmott Dixon. D Morgan Plc has subsequently opened a Liverpool office.
- Assumption of a glulam approach enabled time savings in the Sheppard Robson design process, and early work with B&K Ltd as preferred subcontractor enabled the team to design out elements of work that had previously caused issues on site on the Notre Dame School project, improving both the sequencing and health and safety through lessons learned
- Refinement of glulam, steel and cross-beam solution by engaging B&K Ltd to undertake design, fabrication and erection with consequent, with consequent time savings on progressive erection of the superstructure
- Parallel discussions run by Willmott



Dixon with the steel-frame fabricators and suppliers (Metsec and Cara Brickwork Ltd), also facilitating direct discussions between them, so as to ensure the optimum solution ahead of formal appointments. Cara Brickwork Ltd have subsequently opened a Liverpool office.

- New design solutions offered by Mouchel including a flat soffit to the slabs so that services could travel along the underside of the slabs without obstruction
- Early engagement with a Liverpool-based distributor of bricks so as to ensure compliance with the agreed specification without the risk of increased costs
- Close liaison with finishing contractors and suppliers such as Combined Catering Kitchens, Crown Stage Lighting and Sangwins FFE so as to facilitate end user engagement and achieve greater design certainty and avoidance of escalating costs.
- Achievement of 60% local spend with Liverpool businesses by Willmott Dixon (compared to 50% target on Notre Dame). This was assisted through participation (with other contractors) in "meet the buyer" events facilitated by Liverpool City Council.
- Direct liaison, through the City-wide Liverpool City Council scheme, with local supply chain members so as to establish clear commitments in relation to apprentices.

Overall assessment

Liverpool City Council have created a strong and effective team through the Two Stage Open Book appointment of Willmott Dixon and its sub-consultant designers and Tier 2/3 Subcontractors and Suppliers on the Archbishop Beck project, benefitting from the systems established the Scape Framework and from the lessons learned on the Notre Dame School project.

Willmott Dixon have responded to the cost and time constraints established by Liverpool City Council, and have also worked with Liverpool's other education contractors under a City-wide initiative to maximise appointment of local businesses.

The build-up of the Willmott Dixon supply chain has enabled design, risk management and

programming contributions from prospective Tier 2/3 Subcontractors and Suppliers at an early stage.

The assessment of the Trial Project Support Group at this interim stage is that there is clear evidence that the agreed collaborative engagement by all parties involved in this project has achieved significant cost savings, a partnering and collaborative approach and efficiencies in Health & Safety and productivity.

Key lessons

As this is an interim case study, it is too early to draw conclusions as to lessons learned:

- The project team benefited from previous experience gained on the Notre Dame School Project and from the consistent preconstruction phase systems put in place by Scape for the benefit of their clients and project teams.
- The team also used the strategic initiative put in place by Liverpool City Council to secure benefits for the local economy.
- The project demonstrates how innovative school design can be reconciled with cost savings and a tight project programme, if an integrated team can be put in place at an early stage and supported by clear two stage open book processes.

Miscellaneous

Authors:

- This case study has been produced by Professor David Mosey of Trowers & Hamlins LLP/King's College London Centre of Construction Law as Project Mentor, working in conjunction with Professor Peter McDermott of the University of Salford as Academic Partner

Key contributors include:

- Liverpool City Council, Willmott Dixon Construction, Sheppard Robson, Mouchel, D Morgan Plc and A&B Engineering Ltd.

Background: Trial Projects programme

The Government Construction Strategy aims to change the relationship between clients and the entire supply chain within the industry. The trial



projects perform a central role in delivering the Strategy's sustainable 15-20% reduction in costs and are currently testing 3 new procurement models (Cost Led Procurement; Integrated Project Insurance; Two Stage Open Book) that were proposed by industry and developed by a joint task group. Case study reports are therefore an output of monitoring the progress and outcomes of the trial projects. They are produced at four stages: Kick-off Meeting; Brief / Team Engagement; Decision to Build; Build and Occupy. Other case study reports can be found at: <https://www.gov.uk/government/publications/government-construction-strategy-trial-projects>.

Project contacts

For further information, please contact:
simon.mclnery@liverpool.gov.uk



How the reported savings were achieved				
Strategic context		Client driven	Collaboratively driven	Supply chain driven
Aggregation of demand	Yes	Through national framework		
Significant committed spend				
Standardised procurement / streamlined approval processes	Yes		Development of designs used on comparable prior project	
Lean programming	Yes		Time savings against comparable prior project	
Client cost data base	Yes	Use of 2009/10 prices		
Performance management	Yes	Framework KPIs		
Common new delivery model characteristics deployed		Client driven	Collaboratively driven	Supply chain driven
Challenging cost target / open book	Yes	Use of 2009/10 prices		
Affordable standardised output / outcome requirement				
Early contractor involvement	Yes	Preconstruction Agreement		
Lower tier engagement: fully integrated supply chain	Yes		Early informal appointments	
Lower tier engagement: innovation encouraged / achieved	Yes		Evidence of added value	
Standard form of contract with minimum amendments	Yes	NEC3 with bespoke Preconstruction Agreement		
Effectively led change in team behaviours and practices	Yes		Led by Client, Scape and Tier 1 Contractor	
Two Stage Open Book characteristics deployed		Client driven	Collaboratively driven	Supply chain driven
First stage selection of integrated team on open book basis and ability to deliver savings / project objectives	Yes	Early appointment of Tier 1 Contractor		
Joint work of integrated team (incl. Tier 1 and lower tier contractors) on design, risk management, reduced costs under early appointments	Yes		Joint design development and risk management	
Approval to construct on basis of demonstrable ability of team to achieved targeted costs and progress against project objectives	Yes	Award of NEC3 Contract		



Other cross cutting initiatives deployed		Client driven	Collaboratively driven	Supply chain driven
Building Information Modelling				
Procurement Routemap				
Government Soft Landings				
Project Bank Accounts				