The Business Case for Integrated Collaborative Working:

benefits for both clients and contractors

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Introduction

Two highly influential government reports on the construction industry prepared in the 1990s - the Latham Report[1] and the Egan Report[2] both identified that adversarial attitudes and confrontational relationships were detrimental to the industry's efficiency and effectiveness, and were having a harmful impact on value for money for the industry's customers. The Latham Report in particular identified that, although they may not realize it, clients' attempts to drive down costs in the traditional competitive tendering method of procurement had unintended consequences:

> "Many clients still do not understand that fiercely competitive tenders and accepting the lowest bid do not provide value for money in construction. Lowest priced tenders may well contain no margin of profit for the contractor, whose commercial response is then to try to claw back the margin through variations, claims and Dutch auctioning of sub-contractors and suppliers. Experience has shown that acceptance of the lowest priced bid does not provide value for money in either the final cost for construction or through whole life and operational costs."[1]

Among their recommendations, both reports (in their own way) called for what has become generally known as Integrated Collaborative Working or Partnering in its earlier forms. These terms cover a variety of new commercial relationships in which old adversarial and confrontational approaches are replaced by collaboration between an integrated supply team and the client organisation, and the development of a shared vision of the clients' operational needs.

The principles of integrated collaborative working include:

- involving key members of the project team early on so that options and ideas from those who are expert in providing built environment solutions, are made available to clients in defining their business needs and possible solutions
- selecting team members on the basis of value and not on lowest price
- working together as a team to agree mutual objectives and devise ways to resolve any disputes
- adopting common processes such as shared IT
- agreeing to measure performance and to seek continuous improvement
- using participants who have long-term supply chain relationships, and
- dealing with risks and rewards equitably by using modern commercial arrangements such as collaborative contracts, target cost, open book and project insurance, with all parties being incentivised by sharing in efficiency gains.

This report describes the benefits of integrated collaborative working that have been identified by a variety of organisations who have taken up these methods, and is intended to convince those who have not yet adopted them of their benefits.

These organisations have been benchmarked against the appropriate years' KPI data.

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CONSTRUCTING EXCELLENCE in the built environment

The Benefits for clients: measurable improvements in performance among those who have adopted new ways of working

In an evaluation by Be[3] of a DTI survey covering hundreds of public and private sector projects both new build and refurbishment between 1998 and 2002, 59% of all projects failed to meet the predicted cost, 52% failed to meet the predicted time and 35 - 41% of clients reported dissatisfaction with the process, and/or the product and/or the level of defects. But it doesn't have to be like this. The adoption of new relationships based on Latham/Egan principles has led to significant improvements directly benefiting the industry's clients.

Assessments made using Key Performance Indicators (KPIs) illustrate the improvements in client satisfaction arising from innovative procurement methods and partnership working. Figure 1 compares Key Performance Indicator results for 2001 and 2004 and demonstrates increased satisfaction levels.[4]

Figure 1 Changes in Key Performance Indicator results between 2001 and 2004

Main KPI	2001	2004
Client satisfaction - products	72%	80%
Client satisfaction - service	63%	74%
Defects	53%	68%

Demonstration Projects overseen by Constructing Excellence that utilise the recommendations of Latham and Egan for fully integrated working show even better results for clients. The 2004 findings include 90% client satisfaction with the product, 94% client satisfaction with the service, and 75% reduction in defects over the same period.[4]

In its annual report for 2004/2005, the Strategic Forum reported on progress within the industry towards meeting its target of 20% of construction projects to be undertaken by integrated teams by 2004 rising to 50% by 2007.[5] It found that more than half of major and repeat clients had reported projects were being undertaken in an integrated way, of whom three-quarters said it had led to time and cost savings.

Subsequently, in 2005, a good deal of evidence was brought together by the National Audit Office (NAO). The NAO analysed 142 recent central government construction projects and compared them with its 1999 baseline.[6]

• **The Report found that 55% were delivered to budget compared with 25% of projects in 1999.** If the level of cost overruns reported in 1999 had continued (6.5 per cent on average), this would have led to an estimated overspend of £77 million on the 142 central government construction projects completed between April 2003 and December 2004 (total budget of just under £1.2 billion). The actual overspend on the 89 projects in this time period was, however, only 4.1 per cent. If this improvement in the average overspend is scaled over the £33.5 billion spent on public sector construction in 2003, then we estimate that the post-contract cost overruns which have been avoided when compared to the price expected at the time the contract was let would be in the order of £800 million.

• **It also found that 63% were delivered to time compared with 34% in 1999.** The more that departments can deliver projects on time, the greater the confidence of those making funding decisions will be in providing funding for longer-term programmes. In turn this should enable better planning, streamlined procurement and suppliers' investment in capacity.[6]

The NAO reviewed improvements in value for money through partnering and collaborative working for four central government organisations that it had previously studied for its 2001 report *Modernising Construction*.[7] It found the following reported benefits in the organisations:

- Defence Estates: improved programme delivery
- Environment Agency: improved programme delivery, cost reductions, better quality and fewer contractors' claims
- Highways Agency: cost reductions and improved quality through collaborative working, value for money improvements, and contractors' claims being fewer, smaller in value and more quickly resolved
- NHS Estates: streamlined procurement (through ProCure 21), reduced construction periods through integrated supply chains and other factors, reduced costs associated with dealing with contractors' claims and no litigation.

The NAO report also includes 20 case study examples across both public and private sectors to illustrate the beneficial impacts of the new ways of working, ranging from BAA to Kingsmead Primary School, and Stanhope to Cambridge University.

In the case of Cambridge University, the Estate Management and Building Service (EMBS) under Director David Adamson adopted a capital procurement strategy which echoes the Latham/Egan recommendations:[8]

- Clearly defined client and user responsibilities underpinned by effective governance process
- Realistic but challenging project budgets set by clients, with contingencies based on a proper assessment of the risk, but not over-conservative
- Procurement strategy based on achieving desired quality with certainty of cost:
  - Contractor and specialist supplier involvement at earliest stage of projects
  - Designers and contractors appointed predominantly on quality rather than price (typical ratio 70:30)
  - Non-adversarial forms of contract
  - Contractual relationships appropriate to project/stage e.g. novation of designers at production details stage
  - Sound risk management.

Figure 2 Cost predictability – Cambridge University versus national KPI results

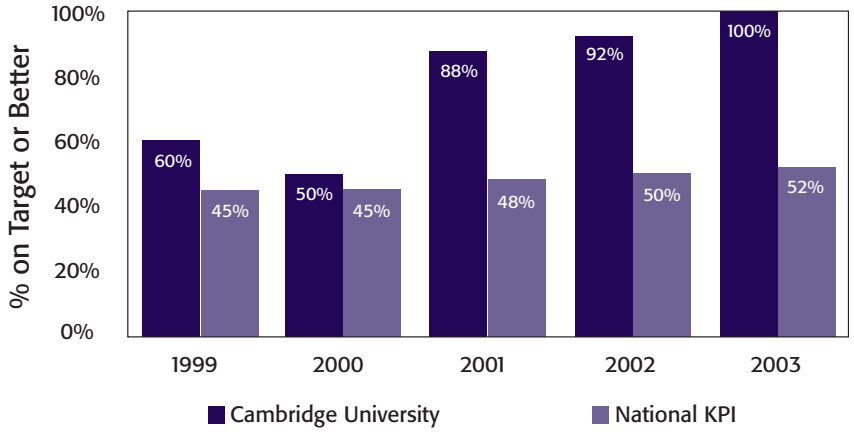


Figure 2 compares Cambridge's results on cost predictability against Constructing Excellence's annual KPI results. It illustrates that, while there has been a general improvement nationally since 1999 from 45% to 52%, Cambridge University's results far outstripped national improvements with 100% of projects achieving cost targets by 2003.

Cambridge University is convinced that this approach to a very large capital programme has resulted in significant reductions in building unit cost over the period during which the Latham/Egan principles were being developed and progressively implemented.

Figure 3 Cambridge University Projects 1995-2005 showing unit cost trends

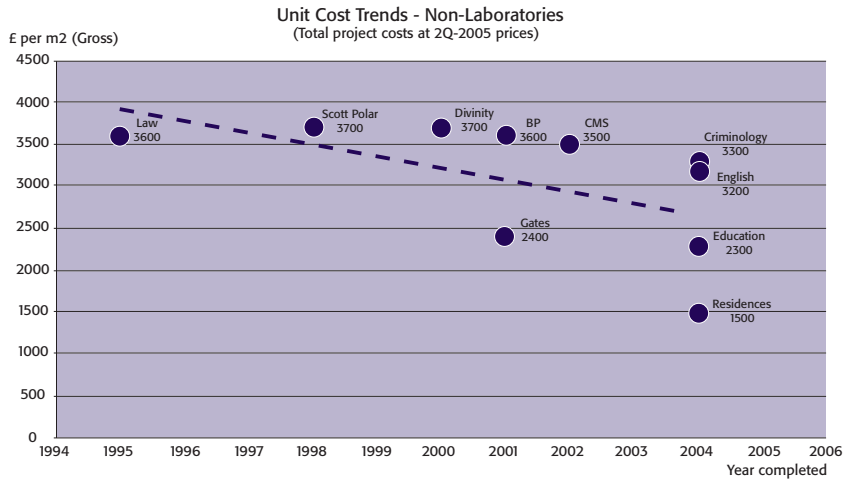


Figure 3 shows unit cost trends for Cambridge University non-laboratory projects between 1995 and 2005, with costs normalised to the second quarter of 2005. Unit costs per square metre for similar buildings decreased over the period, despite increased government and other regulatory measures that would normally have added to capital costs. Over the same period, unit costs of new laboratory buildings for Cambridge have been held level despite the cost implications of new legislation and Home Office requirements. EMBS believe that the dominant influence in achieving these results has been improved procurement procedures. And the results illustrate the paradox that whereas seeking to drive down tender prices has repeatedly been shown to lead to increased out-turn costs, embracing the new working practices actually reduces them.

The benefits for contractors: measurable improvements in performance among those who have adopted the new ways of working

The examples on the previous page illustrate the benefits to clients from integrated collaborative working practices, but what about the perspective of the supply side? Again there is substantial evidence of the benefits, which can be found in a number of sources.

The proportion of major projects being undertaken in accordance with Latham/Egan principles is clearly rising. For example, the RICS *Contracts in Use Survey 2001*[9] found partnering arrangements in 2001 accounted for only 0.6% of contracts by number and 1.7% by value. By 2004, however, the Strategic Forum's annual report[5] said 13% of the industry's projects were being undertaken in an integrated way.

Also in 2004, Saul Humphrey undertook a comprehensive study at Loughborough University[10] examining UK construction procurement from the early 1990s up to 2004, with the aim of discovering whether contractors' profitability was related to the type of procurement route adopted. Humphrey surveyed 58 industry professionals who had been responsible for 1500 construction contracts worth over £1bn in total. Humphrey found the adoption of innovative procurement routes, including formal partnering, occurred only in a very small minority of contacts, although the trend towards formal partnering was reported to be increasing. Humphrey records that:

- 96.5% of contractors agreed that procurement influences profit
- *Cost-plus* and *Design & Build* are most profitable from the contractors' point of view
- *Management Contracting* and *Traditional* forms of contracting were the least profitable
- 87% found negotiated contracts more profitable
- 65% found partnering more profitable.

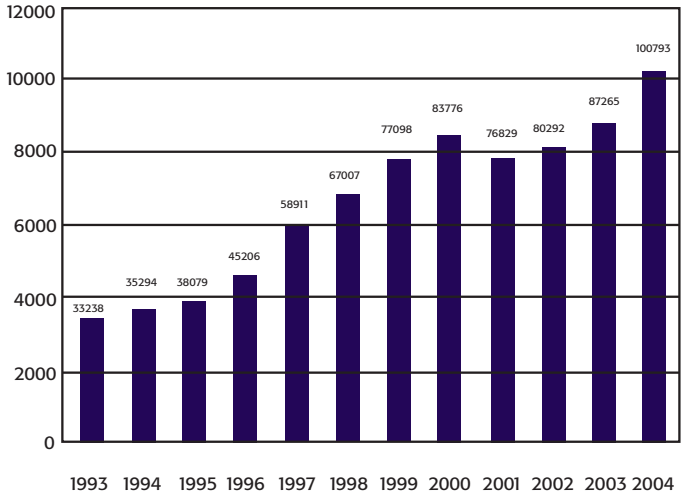
Humphrey's comparison of the margins achieved on partnered versus non-partnered contracts showed the average margin on partnered work was 16.9% against 10.8% for non-partnered. If all other factors were genuinely equal, this would represent a gain of 6.1% through partnering.

In his own company (the contractor R G Carter) Humphrey reports that new working methods led to a reduction in risk and an increase in average profit. Taken as a whole, profitability of his company's projects increased by some 0.25% over the period being studied Although this is a relatively small increase, more importantly, the range of profit or loss on individual projects undertaken using new working methods was significantly narrowed. This permitted the company to plan its financial commitments with greater confidence and release resources for other potential profit-making programmes.

Further evidence of the benefits to the supply side of improved performance resulting from adopting the new ways of working comes from three major contractors - Willmott Dixon, AMEC, and Laing O'Rourke. All support integrated collaborative working and all have achieved more satisfied clients, higher productivity, better reliability, lower costs, safer construction and greater employee satisfaction. All report they have improved their profitability and their ability to retain and obtain business.

Willmott Dixon[11] claims a threefold increase in site productivity, measured by value of output per operative, over the period 1993 – 2004 (figure 4). The company attributes the improvements in performance to the adoption of Latham/Egan principles.

Figure 4 Site productivity improvements at Willmott Dixon



1993-2004

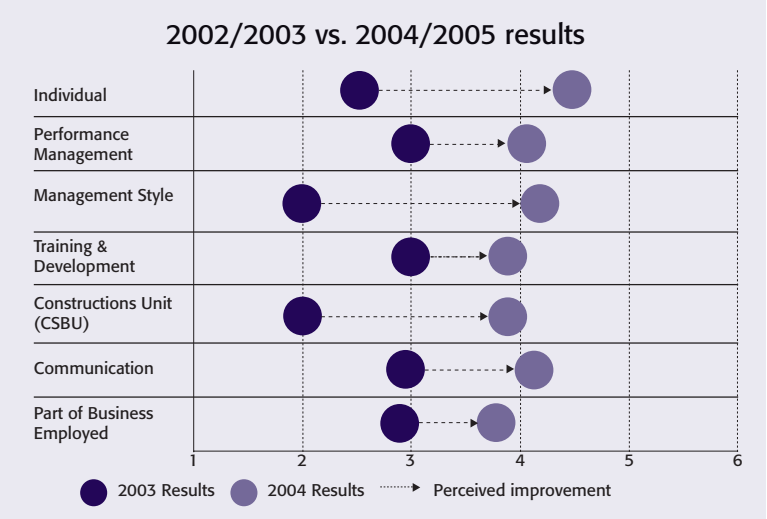
Amec[11] claim the following improvements:

- Better reliability: 85% compared to industry mean of 55%
- Faster cycle times: 50% faster than industry average
- Higher productivity: 97% in factories against industry average of < 60%
- Lower costs: 10% less per annum on repetitive process
- Safer: 0.42 AFR against industry average of 1.4
- Shorter lead times: 50% lower than industry average.

AMEC monitor programmes of continuous improvement for their staff and, on the basis of records pertaining to approximately 50% of employees, have recorded the performance improvements for different departments of the firm as shown in **Figure 5**.

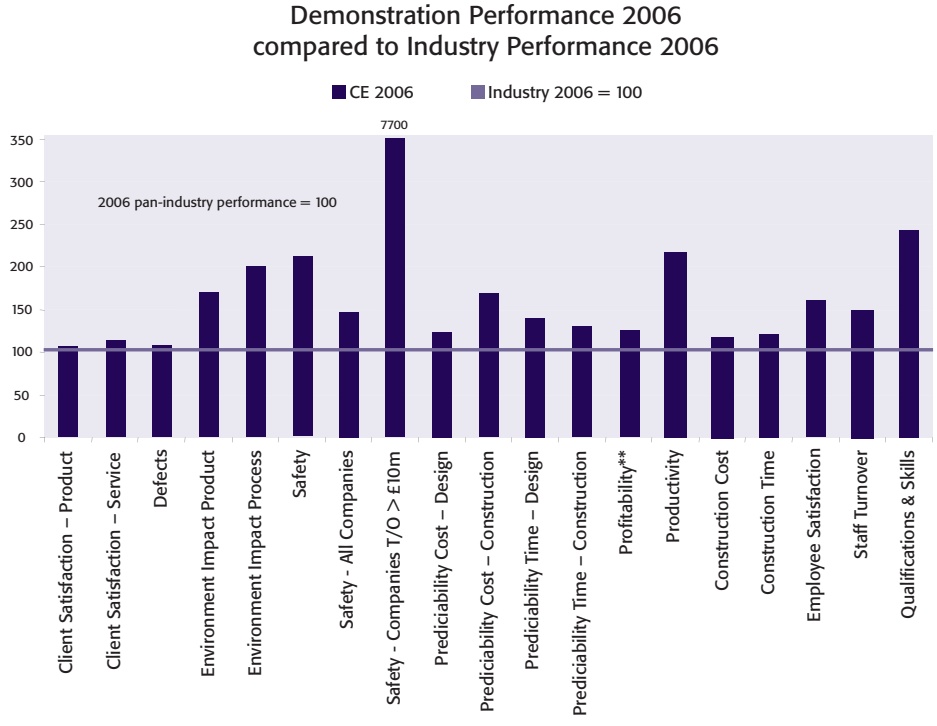
Figure 5 Performance improvements at Amec 2002-2004

Laing O'Rourke have not formally quantified the improvements in productivity and profitability resulting from adoption of the new procedures, as they attribute some of the improvement to internal changes in organisation and methods of working which they would have implemented anyway.[11] However, they have benefited from increased employee satisfaction, which they believe results from the improvements engendered by integrating the team. Laing O'Rourke have an annual staff turnover of just over 10% compared to a construction industry average of 21%.



Overall Performance Improvement in the Public and Private Sector

Rethinking Construction[2] called for the industry to bring forward projects demonstrating the implementation of improved procedures and their benefits to lead the movement for radical change in the construction industry. The resulting programme of demonstration projects is run by Constructing Excellence which, in 2005, published a summary of the conclusions drawn from 414 projects representing a total construction value of some £8bn across the whole of the UK (a further 151 projects were still active and on-going.)[12] The full results are available from Constructing Excellence but **Figure 6** below shows how demonstration projects compare with the industry as a whole for the latest year where data is available ie 2006 (based on 2005 results). The Demonstration Projects programme illustrates that in almost every aspect of performance measurable under the KPIs, the demonstration projects achieve better performance than the industry norm. The graph shows quite clearly the wide ranging benefits to be gained by both clients and the supply side from the adoption of the principles laid down by the Latham and Egan reports.



(Based on projects completed in 2005)

Figure 6 2006 KPI results: comparing demonstration projects to industry results as a whole

To find out more about how to implement integrated collaborative working principles go to **www.constructingexcellence.org.uk**

The Strategic Forum has published a construction integration toolkit available at **www.strategicforum.org.uk**

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