Department of
Building and Housing
Te Tari Kaupapa Whare

Developing an improved approach to the procurement of construction projects

Scoping paper

Building and Construction Sector Productivity Task Force
11 November 2008, Wellington

Context

1. On 1 August 2008 the Minister for Building and Construction hosted a forum for leaders and decision makers in the building sector. One of the focus areas discussed at the forum was sector productivity. Productivity is influenced and affected by a range of factors, one of which is the method used to procure goods and services in the sector.

2. The building and housing sector employed 174,800 people as at March 2008 and contributed approximately 5% to New Zealand's GDP. The value of all building consents in the year to May 2008 was $11.9 billion. Research has shown that a 10% increase in efficiency in building and construction processes can lift GDP by 1% - an improvement of over $1 billion per annum.

3. Evidence suggests that productivity levels in the construction sector in 2006 have not improved much in the last 15 years. Even the most optimistic estimates of construction sector labour and multifactor productivity suggest the construction sector under-performed many other sectors in the economy between 1995 and 2004. The most pessimistic estimates suggest that the industry has never recovered from the damage done to productivity in the early 1990s.

4. This document summarises the comments made at the forum about procurement and briefly describes the various procurement methods. Overseas experiences from the United Kingdom and Australia are also referred to. A range of questions and issues are then posed to provide scope and focus for potential areas of further work.

Comment from the building sector forum

5. A number of issues with the prevailing business/procurement model were noted. It was proposed that the fragmented and cost based model does not always deliver the best result and can lead to perverse outcomes:

- user needs being neglected
- loss of innovation
- additional cost, due to changes midway through the project.

6. In order to improve productivity, an integrated business model was discussed. Particular characteristics of this model included:

- recognition of the close linkages between design and construction
- more attention to design at the initial tendering of the development
- more attention to the overall capability of the team and more collaboration between different team members – developer, designer, builder – from commencement of the project.

7. The key points being that a simplistic transaction focussed, cost driven model was inadequate in dealing with the complexities of substantial developments, and delivered less optimal results compared to a more collaborative model where more time and effort was invested upfront and in relationships to get it right.

Current/common procurement models or methods

8. The two traditional procurement methods are the linear and design and build models. These models are currently the dominant forms of procurement for construction activity in New Zealand.

9. The linear model in particular is the long standing method of procuring goods and services, with the design and build model being a variation of it. Both of these models are characterised by most of the risk being managed by the contractor and certainty about cost. The design and build model can result in shorter project time frames than the linear model. The key difference is the point in time at which a tendering process is carried out. In the linear model it is after the project design has been completed, in the design and build model it is before the design is done.

10. A third model – the management model – has been more recently used for large, complex, individually designed projects (usually involving innovation). This model is characterised by most of the risks being with the principal and limited certainty about cost. The model requires active management of contractors by the principal who is also therefore more involved in the running of the project before and after tendering. There can also be multiple tendering processes for different aspects of the work.

11. All three models use tendering processes to choose contractors, with the main driver usually being cost. Occasionally principals will attempt to use other criteria to decide tendering results, but in most cases the lowest bid will be the successful bid. The criticisms of these models are generally centred around:

- inflexibility of the process to take account of changes during construction
- unbalanced allocation of project risks (mainly on the contractor)
- driving more segmentation of the sector through increasing numbers of sub-contractors

Emerging/new procurement models or methods

12. Alliancing, partnering or joint venture models are new approaches to procurement that are being adopted by construction industries around the world, including to a small degree in New Zealand.

13. The key difference from the traditional procurement models is that contracts in the newer forms of procurement are negotiated rather than competitively tendered for. These new models are characterised by collaborative and co-operative approaches that are more flexible in the allocation of risk to all of the parties involved. All the parties will often agree in advance not to make claims against each other and use an “open book” approach to disclosure of project cost information. Contractors are able to eliminate certain risks from their pricing because the risks are shared with the principals.

14. However, the models are not being used regularly because they need good pre-existing relations (trust) and excellent project management to be successful and effective. Neither of these qualities are seen as being particularly strong in the building sector.

Table One. Summary of procurement models

Linear model	Design and build	Management model	Alliancing/joint venture models
Longer timeframes due to linear steps	Can reduce timeframes as not sequential	Can reduce timeframes as not sequential	Flexible process to suit different projects
Tender completed after project design	Tender covers design and build	Can be multiple tendering processes for various aspects of the work	Contracts negotiated rather than tendered
Greater control over design stage	Less control over detailed design as this can take place during construction	Good control over design phase as well as some ability to overlap design and construction	All parties can influence design and construction process
Contract sum largely determined before full construction starts	Contract sum more definitely determined before full construction starts	No certainty over costs at outset, and risk in terms of time	Cost reductions can be achieved by principals accepting greater share of risks, "open book" approach to cost disclosure

Government interest in building and construction sector

15. The government's interest in the building and construction sector is twofold:

- the sector's contribution to the economy as a whole, including its share of economic activity and its long-term social and environmental effects arising from the quality of the buildings and construction;
- as purchaser of services from the sector, including the construction of schools, hospitals, roads, houses, prisons amongst others.

16. As noted in the introduction, the building and construction sector contributes more than 5% to New Zealand's GDP. Improving productivity within the sector can therefore have flow-on benefits for the economy as a whole.

17. Statistics New Zealand's Quarterly Building Activity Survey shows that central government is a significant but relatively small contributor to activity in New Zealand's building and construction industry. Excluding infrastructure works such as roads, in the year to June 2008 central government contributed $987 million of a total $13.5 billion of work (7.3%), with the health and education sector being the

largest parts of this spend (69% or $681 million). Infrastructure spending is even higher, with Transit alone spending over $1 billion a year. The New Zealand Treasury has stated that the government's total annual spend on capital assets is approximately $3 billion.

18. The contribution in 2008 was fairly representative of the annual spend over the past five years. Although it is a small part of the total annual building / construction spend it is nevertheless still a sum significant enough to warrant ensuring efficiency and value of spend is protected.

Table Two. Information from Quarterly Building Activity Survey

<table>
<tr><th>Residential/Non-residential</th><th>Building type code</th><th>The WPIP (work put in place) (NZ$)</th></tr>
<tr><td rowspan="7">Non-Residential</td><td>Accommodation</td><td>53,866,528</td></tr>
<tr><td>Hospitals</td><td>218,811,725</td></tr>
<tr><td>Factories and Industrial</td><td>24,526,752</td></tr>
<tr><td>Commercial</td><td>19,358,526</td></tr>
<tr><td>Education</td><td>466,151,803</td></tr>
<tr><td>Miscellaneous</td><td>131,663,446</td></tr>
<tr><td>Total</td><td>914,378,781</td></tr>
<tr><td rowspan="4">Residential</td><td>Building type code</td><td rowspan="2">45,454,581</td></tr>
<tr><td>New Dwellings</td></tr>
<tr><td>Alterations and Additions</td><td>26,765,560</td></tr>
<tr><td>Total</td><td>72,220,141</td></tr>
<tr><td colspan="2">Total</td><td>986,598,922</td></tr>
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19. The government's interest in achieving value for money from the construction activity funded by taxpayer money is primarily expressed through standards and guidelines applying to procurement by government agencies. The three key documents for government are:

- The MED *Policy Guide Government Procurement in New Zealand* (August 2007)
- The *Mandatory Rules for Procurement by Departments* endorsed by Cabinet (April 2006); and
- The Auditor General's *Procurement Guidance for Public Entities* (June 2008).

20. A fourth document, the New Zealand Construction Industry Council's *Principles of Best Practice – Construction Procurement in New Zealand* has been endorsed by the Auditor General as is also recommended guidance for government agencies.

21. The government is also bound by a number of international agreements on government procurement such as the Australia New Zealand Government Procurement Agreement (ANZGPA), the Trans-Pacific Strategic Economic Partnership Agreement (TPSEPA), and the WTO Agreement on Government Procurement (AGP). The focus of the international agreements is on providing fairness and equality of opportunity across participating countries for tenders for government procurement.

22. Most of the government procurement guidance documents are generic in nature and do not directly address building and construction projects (though do apply to them). Their focus is primarily on issues such as transparency of decision-making ensuring fairness in tender processes. They do not preclude the use of non-traditional forms of procurement as a way of achieving value for money, but they do lack a detailed analysis of the procurement models and the advantages and disadvantages of each model. This is left to individual agencies to pursuer and is potentially one reason why the 'default' remains the traditional procurement methods.

23. There is anecdotal evidence that there is wide variability in the quality of government construction procurement, with some instances being "very smart" and others "very poor". The reasons for this variability are not known, although a contributing factor may the generic nature of procurement guidance and that government agencies are left to develop their own specific policies within this guidelines. For quality to be improved overall, there may need to be more support and guidance to government agencies (particularly those who engage in larger scale projects) in the areas such as:

- "Value for Money for Whole of Life" definition and understanding of the costing and cost management of projects under this principle.
- The procurement models that are available, their strengths and weaknesses, and the critical project management issues of each.
- Understanding and managing the project risk, risk sharing and trade-off of risk for other project benefits.
- The key indicators for measuring success in terms of the policy objective of "best value for money over whole of life".

24. The New Zealand Treasury has recently been undertaken a Capital Asset Management programme that is aimed at improving the value the government achieves from its current asset base and through future acquisitions. This project found that a large number of government projects in the last decade have experienced cost overruns and produced lower than expected benefits.

25. The changes being proposed as part of the Capital Asset Management programme are primarily focussed on 'capital intensive' agencies (such as District Health Boards, Housing New Zealand Corporation, Department of Corrections). One of the goals is to improve 'quality at entry' through obtaining more realistic measurements of costs, risks and benefits. The aim is to move away from a focus on initial investment toward whole of life costs and benefits. Government agencies will be expected to demonstrate that their core asset management practices (including procurement) are based on authoritative published industry guidelines.

Overseas experience

26. The debate over procurement models is not only occurring in New Zealand. Other jurisdictions have asked (or are asking) similar questions about industry procurement processes. The United Kingdom and Australian experiences are summarised here.

27. In 1998 the United Kingdom's Construction Taskforce report *Rethinking Construction* criticised the 'debilitating cycle of competitive tender, conflict, low margins and dissatisfied clients' that traditional procurement models had led to. One of the greatest barriers to improvement was seen to be a culture where clients were equating price with cost and selecting designers and constructors almost exclusively on the basis of tendered price.

28. The Taskforce saw a need to educate and help clients to differentiate between best value and lowest price. Equally, a call was made to reduce the reliance on tendering and to favour long-term relationships over the traditionally short-term focussed contracts. Stronger performance measurement and targets were seen as being the quid-pro-quo for a reduction in competitive tendering.

29. High levels of dissatisfaction with the industry drove clients to undertake the changes suggest by the Taskforce. Clients took on extra risk in order to create cooperative and collaborative long-term relationships that deliver higher value overall.

30. The Taskforce also set bold targets for industry improvement at a national level. Major clients of the construction industry (including the Government) were expected to take the lead by replacing competitive tendering with "long term relationships based on clear measurement of performance and sustained improvements in quality and efficiency."

31. The benefits from making changes to procurement processes (in conjunction with other industry improvements) were substantial: increased client satisfaction, reduced accident rates, and fewer defects on handover as well as reduced costs.

32. In September 2006 BRANZ reported on potential lessons for New Zealand from the UK experience:

- direct comparisons are difficult given the different size of markets
- New Zealand's construction culture is not as bad as that in the United Kingdom at the time
- examples of collaborative models already exist in New Zealand
- procurement processes still need to move away from decisions based on lowest initial price
- Key Performance Indicators should be used more to measure the performance of the project.

33. Australia has carried out a number of reviews into the performance of the construction industry since 1990 (including two Royal Commissions). While the starting base for the reviews was different from the UK – a reaction to increasing disputes and litigation in the 1980s, as opposed to client dissatisfaction – the findings of the reviews were broadly similar:

- separation of design from the realities of construction leading to a lack of practical design solutions and lack of shared vision amongst parties;
- relationships in the industry characterised by conflict, with contracts based on adversarial relationships and not on cooperation or sharing of joint objectives;
- competition was often on cost alone rather than quality, leading to low profit margins and unrealistically low bid tendering.

34. The Australian construction industry subsequently increased the use of procurement methods based on relationship contracting and performance measurement. These methods allow clients to better manage their risks through cooperative approaches where risk is embraced rather than transferred. Significant benefits in project outcomes have been reported, including cost and time savings.

35. Key points from United Kingdom and Australian experiences are:

- client dissatisfaction is often a key driver for change - their behaviours have to change as much as the industry's
- changes to procurement are closely linked in with other industry concerns such as fragmentation and low profitability
- major projects that demonstrate new approaches are a good way to generate change in industry culture
- partnership and relationship based forms of procurement can lead to loss of some degree of competition, but the trade-off is increased use of performance measurement.

New Zealand industry efforts on procurement

36. The New Zealand Construction Industry Council in conjunction with the Centre for Advanced Engineering has been undertaking a project on improving procurement practices. A number of leading construction firms are participating in terms of funding the project as well as through a programme of benchmarked demonstration projects. The aim of the project is "to quantify the scope for improvement, establish performance measures that might be adopted by New Zealand firms, and identify strategies for innovation in the procurement and delivery process."

37. NZCIC's work has revealed a number of key issues facing the New Zealand construction sector in terms of procurement practice:

- a focus on the short term and not whole of life costs
- a focus on costs over value
- lowest bid approach compromises quality aspects such as health and safety, skills, and innovation
- lowest bid approach encourages unsustainable markets
- inappropriate risk allocation is occurring
- accountability needs to be improved.

38. The Council has noted that legislation is driving towards value for money, in particular the new Land Transport Management Act. The work to date as also pointed to a number of advances in procurement practices having already been made, for example with the Grafton Gully and ALPURT B2 projects using non-traditional procurement methods.

Discussion

39. The Ministerial Building and Construction Sector Forum noted that a simplistic transaction focussed, cost driven model was inadequate in dealing with the complexities of substantial developments, and delivered less optimal results compared to a more collaborative model where more time and effort was invested upfront and in relationships to get it right.

40. Improvement in procurement processes in New Zealand's building and construction sector has been recognised by the industry and work has been undertaken to achieve this. In particular, sector groups such as the New Zealand Construction Industry Council have been undertaking programmes with sector players. Some construction projects in New Zealand utilise non-traditional procurement practices in an effort to capture greater value for money.

41. Government has a two-fold interest in productivity through improved procurement processes in the building and construction sector – in terms of the sector's wider impact on the economy and as a procurer of building and construction services itself. Procurement guidelines for government agencies recognise the potential for non-traditional procurement methods to achieve greater value for money, but procurement practice across agencies is variable.

42. In terms of achieving further improvements, it is clear that we are not building from a zero-base. However, it is also clear from the Forum that the industry culture has not changed significantly enough to suggest no further improvement in procurement is necessary or possible.

43. Improving procurement practices is therefore likely to focus mostly on how to implement change. This may follow a quick update on what is happening in the sector and on most recent development. Key questions for achieving further improvement are likely to be:

- is it a case of **using traditional methods better** or adopting new procurement models? Traditional procurement practices still have their place, and it may be a case of people using these better rather than adopting new models. The size and scale of many of New Zealand's construction projects may mean alliancing and partnering are only going to be used sporadically rather than become the norm.

- what are the **necessary drivers** for change? Overseas experience has shown that client demand can be very important for achieving change as it is the client that often has to accept a new way of working and a different proportion of risk. Is this the case in New Zealand or are other drivers for change dominant (in which case the mechanisms for achieving change may be different)?

- what are the **existing barriers** to shifting the focus away from lowest cost? The industry has been making efforts to achieve this shift but for whatever reason the culture has not changed significantly. Can these previous efforts be built on?

- what is the **role of government** in making this shift? Achieving value for money will always be a key goal for government agencies as part of their procurement. Strong performance targets have been used by other jurisdictions to ensure that public money is being used wisely once competitive tendering has been less relied on.