



**CONSTRUCTING  
EXCELLENCE**  
IN NEW ZEALAND

# DBH Building & Construction Taskforce

## Procurement Working Group

**Material for Meeting  
No. 1**

**January 2009**

## Record of Amendments

Number	Date	Written By	Peer Reviewed By	Details
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Issue01	22 Jan	Amanda D Warren	Clive Tilby Tim Munro (GHD) Don Ward (Constructing Excellence UK) Tyson Schmidt (DBH)	Issue incorporating comments from Peer Reviewers

Note – the views expressed in this report are those of the Authors and not necessarily those of DBH or the Procurement Working Group.

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## 1 Introduction

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This document comprises discussion material designed to inform the first working group meeting of the Procurement Working Group.

Each section acts as input to a facilitated session during the meeting and is designed to be read in conjunction with the Agenda for the meeting scheduled for January 27<sup>th</sup>, at Appendix A.

The material has been developed by a process of desk research of current available material relevant to the topic and the author's experience. A full list of sources can be found in Section 6, References.

Valuable comments and additions have been added by:

- Tim Munro, Managing Consultant, GHD
- Clive Tilby, an independent specialist
- Don Ward, CEO, Constructing Excellence in the Built Environment, UK

## 2 Background

### How can improvement in procurement practices lead to improved productivity?

This Section aims to describe how improvements to procurement can result in improvements to productivity.

The material draws upon experience from New Zealand and overseas. Of particular interest has been the UK experience where large parts of the industry have undergone a major transformation since Government-led improvement initiatives in 1994 and 1998.

It is important in examining how improvements to procurement can lead to improvements in productivity, to firstly understand productivity and performance in the New Zealand construction industry, its current status, how it is measured and the levers and the drivers which impact upon it. Secondly, to understand the industry in its macroeconomic context, in particular its internal and external performance levers and thence how procurement as a lever sits within this model.

This section examines these areas and goes on to summarise issues linked to procurement which impact productivity within the sector.

Several reports have been significant in providing input and are listed in Section 6, References.

#### 2.1 Productivity & performance of the sector

The New Zealand Council for Infrastructure Development (NZCID)<sup>1</sup> estimate that new Zealanders are 30% less productive than Australians. The Organisation for Economic Co-operation and Development (OECD)<sup>2</sup> measure of labour productivity (GDP per hour worked) shows New Zealand productivity for period 2001 to 2006 to be 4<sup>th</sup> from bottom of comparable nations, supporting the NZCID estimate, as illustrated in Fig 1.

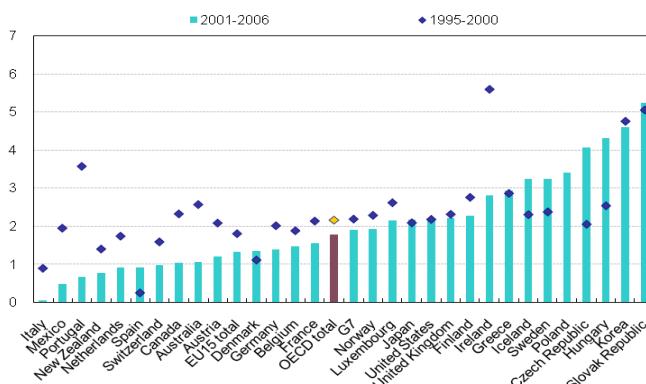


Figure 1: Growth in GDP per hour worked  
(Source: OECD<sup>2</sup>)

The Martin Jenkins report<sup>3</sup> commissioned by DBH, (Productivity in the construction sector) concludes that industry productivity has been low since the 1980's and has been negative in growth since 1997, falling "short of aggregate labour productivity growth by 26 points". Also pointing out that the availability of performance data is sporadic.

These reports lead us to conclude that productivity performance across NZ is generally low compared to global players and that of the construction sector, even lower. A further difficulty is the poor level of data available. Best practice shows that in order to be managed, productivity and its levers need to be measured.

The UK construction industry has consistently measured productivity along with a further suite of industry KPIs, (See Appendix C) since 1998. The measure is primarily a company measure, i.e. *Value added per employee per year*.

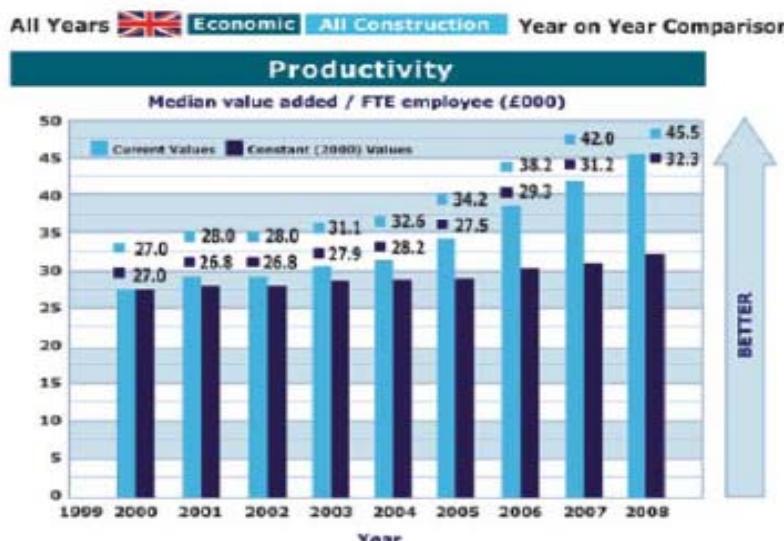


Figure 2: UK Construction Productivity trends.

Figure 2 shows that the performance has achieved a consistent year on year increase since measurement began in 2000. This is not coincidence, but the results of a focused industry wide campaign for improvement initiated by the UK Government and embraced by Industry and its clients. Productivity is just one measure of many that have showed significant improvements in the industry in the past five years. In particular, the 'Respect for People' suite of measures shows 30% plus improvements in areas such as Qualifications and skills, Training, Employee Satisfaction, Staff Turnover and Absenteeism. Safety has seen a 60% plus improvement, (Appendix C).

In 2004, Building Research commissioned CAENZ to introduce a series of performance indicators to the NZ construction industry. A steering group, comprising key industry players, chose to align these measures with the UK suite to enable cross country benchmarking. The results (Figure 3) show a high degree of variability and measurement of performance has not been made for a sufficient number of years to identify any trends. The results do show, however a significant performance issues in terms of health and safety, quality and predictability in delivery of projects on time and to budget.

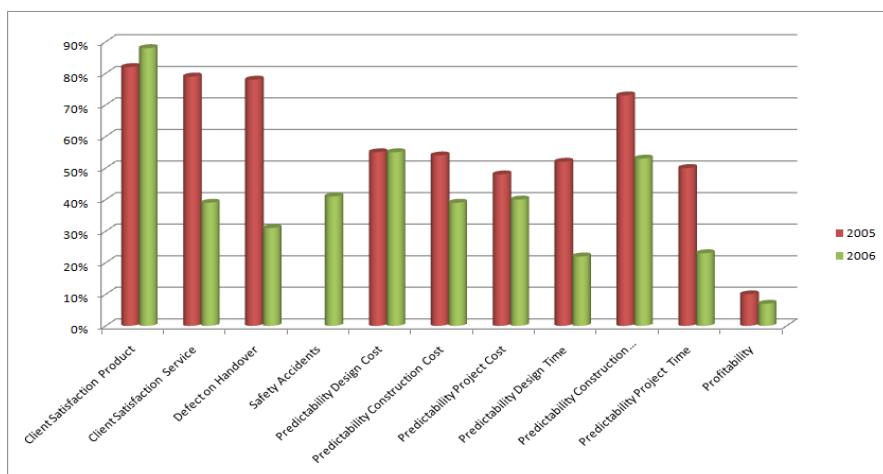


Figure 3: NZ Construction KPI Trends.

The data broadly indicates that the New Zealand industry initial scores are similar to the initial UK scores prior to the UK industry wide drive towards best practice. The UK scores have since increased significantly, the NZ results have declined in the main. Appendix D comprises further details on these measures.

## 2.2 Macroeconomic performance levers

A recent study<sup>4</sup> commissioned by BRANZ examined the cyclical performance of the industry in order to better understand why ‘boom and bust’ cycles exist.

Using Systems Thinking as a methodology, the report concluded:

- The construction industry is an important bellwether and stimulus for the New Zealand Economy.
- Much of the boom/bust effect is caused by internal system structure rather than external shocks i.e. the way in which the industry, (including clients) is set up to operate as a whole.
- Population (and retention) is ‘crucial’ to the construction industry.
- Boom bust cycles create waste and loss of productivity in the industry.
- “Things will need to be done differently if the industry wishes to ensure its long-term profitability and sustainability.”
- There is a tipping point which can send the industry into decline arising from very high spending rates in Government suggesting a potential ‘optimum range’.
- The industry is made up of poorly understood complex supply chain relationships.
- Skilled worker retention is critical. The industry has suffered 20% average churn in the last 20 years, compared to other engineering sectors such as manufacturing and electronics, 8% and 4% respectively. The industry needs to become more attractive.

The report recommends several changes to mitigate the cycles. Those specifically related to procurement are:

- “A policy of not selecting the lowest price for public construction projects can help the industry smooth fluctuations”.
- A delay in the procurement process in public projects is a cause of fluctuation. These should be minimised.
- Adopt more modular flexibility i.e. smaller interrelated projects and an approach to standardisation
- More accurate forward visibility on customer orders.
- More transparency of industry capacity and its ability to flex with demand
- “The simple fixed price competitive tender model does not fit with maintaining a holistic view of the industry and should be replaced with a value-added contractual approach.”
- Adopt “a way forward that embraces shared learning and greater collaborative working”.

Studies by Constructing Excellence in the Built Environment, UK add to and support the findings of the Branz report. These have found:

- The UK is now seeing some very intelligent ‘demand side management’ by the public sector. Based on good intelligence about forward pipelines of work (private and public sector). They have built a model to help assess the potential inflationary effect (and impact on skills shortages) of mega-projects (e.g. Olympics or Crossrail). Also to phase work to either delay or advance it to smooth workloads and avoid to some extent procuring projects at times of high tender prices.

- A good built environment, (and hence the facilities management, construction and design processes that produce and maintain this) gears better performance in the rest of the economy. For example, better offices or shops that deliver improved productivity levels or better sales, or in the public sector better hospitals, schools or roads that deliver improved healthcare, education or transport outcomes respectively.

Figure 4 below describes the outcome of studies into the cost of the capital investment in a new construction projects versus the whole of life maintenance of that product and the cost of the asset housed and made functional by the product.

It is interesting to see that the cost of construction and even more so, cost of design is significantly smaller than the other business costs involved in the life of the product. Yet, the construction procurement process focuses heavily on these early phases in the life of the product.

Intelligent clients are recognising the value of integrated design in working to achieve better outcomes in the cost of maintenance and productivity of the workforce housed by the product.

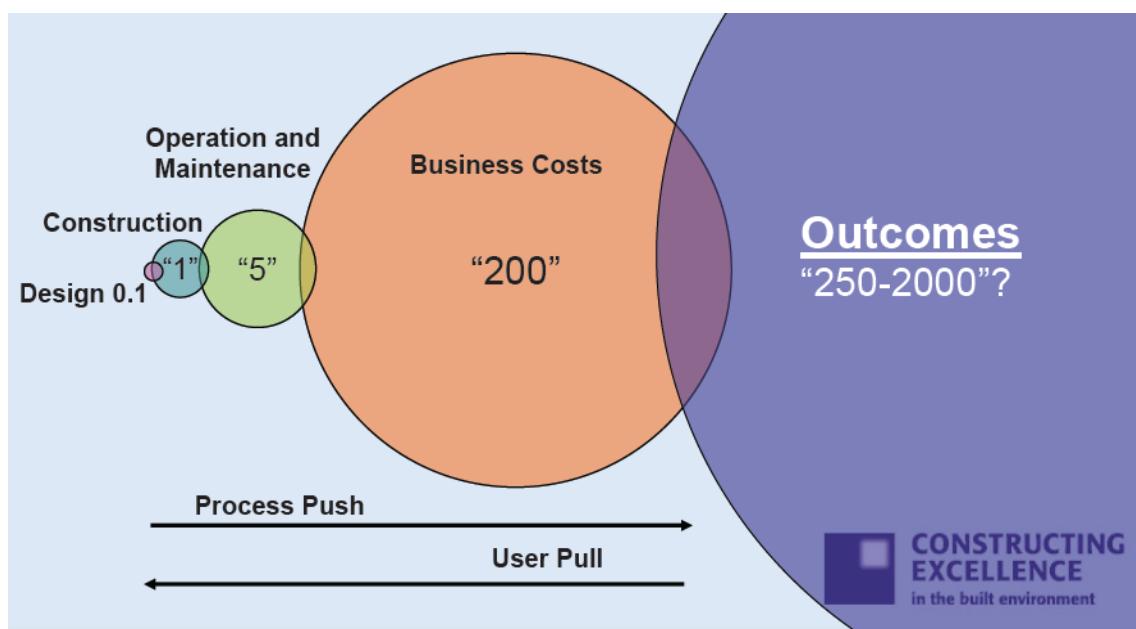


Figure 4: Cost ratios of a facilities lifecycle.

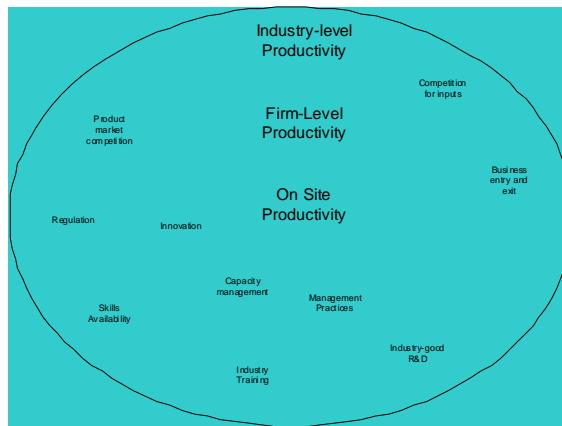
- There is an argument that commodity purchasing is never appropriate for construction. Procurement theory, says that if a purchase is low risk-low value for a client then they can procure as a commodity (i.e. price driven), but high value high risk projects should use strategic collaboration. It can be questioned whether any purchase in construction is ever low risk/low value, even housing.

## 2.3 Productivity and Procurement

The Martin Jenkins<sup>3</sup> report illustrates a productivity driver model (figure 5). The model shows three levels, Industry, 'Firm' or Business level and 'On site' or Project level.

We can use this to further examine the link between productivity and the most common procurement method in New Zealand currently – Traditional (Linear), lowest price conforming, competitive tendering referred to below as LPC.

*Figure 5. Construction Sector Productivity Framework. Source: MartinJenkins*



### 2.3.1 Project level

LPC has long been criticised locally and internationally as an inappropriate tool for procuring complex products such as buildings, however, clients are surprisingly reluctant to move away from this model, citing 'cost certainty' or 'best market price' as the main reason. Many members of the NZCCG (Construction Clients Group) complain that they are forced into this method by uninformed boards who have little or no knowledge of the construction industry, yet who are convinced that LPC will provide them with the best value outcomes.

In theory, this would be accurate if a) all service providers were equal, b) all employees of all service providers had equal skills, b) the design was fully thought through, optimised for value management and free from errors at the time of tender to the contractor, and d) clients did not change their minds throughout the process. This is very rarely if ever the case on single one off projects.

Even if it were, for clients who have a portfolio of projects, they are building in tremendous waste into the system by choosing LPC, for example:

- The tendering process adds non-value adding time and cost to both suppliers and the client (up to 20% of the annual spend in one UK study).
- The team of designers, contractors and subcontractors is coming together on the project nearly always for the first time, every time introducing steep learning curves leading to a lack of shared processes or procedures
- Delays post tender can mean inconsistent teams and unreliable resourcing. A teams at tender turn to B teams on site.
- Lack of shared learning to pass onto to future projects. The IP of the clients product must remain totally with the client as the supply chain is disintegrated before the next project.
- Each organisation has their individual goals, mostly with no shared reward or incentive to work together collaboratively.

- The levels of innovation possible are stymied through the linear approach. Contractors will often complain on receiving design information that there is a more efficient method of achieving the same outcome, if only they had been asked. It is more expensive to make changes further into the development process.
- Contractors complain that under these circumstances, they are forced to go out to the market to find the lowest priced subcontractors in order to stand a chance at winning the tender. This exposes them to risk through under performance of unknown companies. The same risk in fact that the client runs through the same process. It is common for contractors to add a risk factor to their pricing if they think the tender will bear it for LCP projects. The famous quote by John Ruskin sums it up:

*"It is unwise to pay too much, but it is worse to pay too little. When you pay too much you lose a little money, that is all. When you pay too little, you sometimes lose everything, because the thing you bought was incapable of doing what it was bought to do.*

*The common law of business balance prohibits paying a little and getting a lot. It can't be done. If you deal with the lowest bidder, it is well to add something for the risk you run. And if you do that you will have enough money to pay for something better.*

*John Ruskin 1819-1990*

The quote above is borne out by the cost KPIs in both NZ and UK which show that the lowest price is rarely the final out-turn cost, ( See Appendices C & D).

Clients believe that they can achieve cost certainty through choosing the lowest price tender, however, studies in the UK have shown that it is much more likely that this is the one price a client can be certain they will not pay.

In studies two years ago, RICS (Royal Institute of Chartered Surveyors, UK) revealed that their figures told them that on average negotiated prices were 9% higher than tendered ones. In comparison, the average cost overrun for tendered jobs from the UK KPIs shows an average 10% cost overrun for lowest priced tendered projects. A key difference is that the 9% in negotiated projects forms part of the budget as it is a known quantity at start of construction, the 10% overrun on the lowest price is not.

### 2.3.2 Business level

The implications of years of predominant LPC in the industry have created a downward spiral initiated by poor margins. This 'cycle of waste' can be illustrated as in figure 6 which shows just one analysis loop looking at the causes of the high level of rework on a construction site.

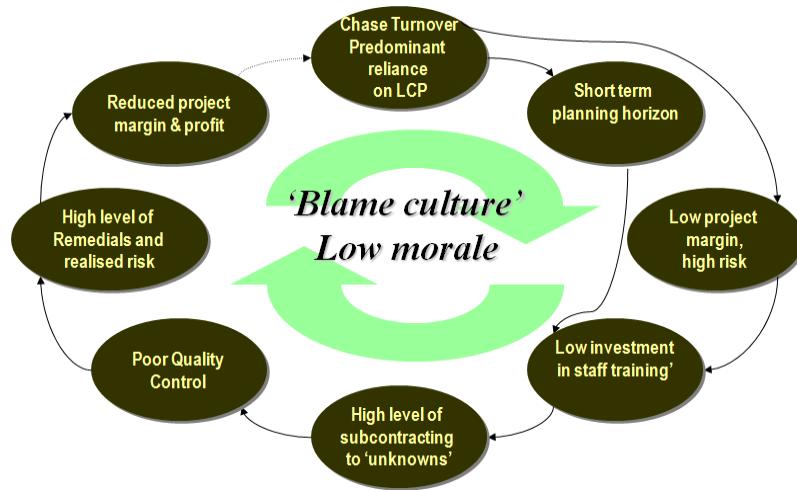


Figure 6 Source Constructing Excellence NZ Limited.

A downstream effect is that main contractors often survive on cash flow and profit margins are poor in comparison to other industries (a year on year loss in larger companies is not uncommon). This has the further effect of poor investment in staff training, quality control and supply chain management.

Add to this, the high level of subcontracting which has arisen in the industry partly due to the boom bust cycles has resulted in a largely fragmented industry of very small players. Using statistics of \$13.5Bn spend<sup>5</sup> and 43000 total enterprises<sup>3</sup>, the average turnover of a business in the building construction industry is \$277k, the equivalent of one medium to large size house per company per year. The ability of a company with this level of turnover to have best practice business skills and processes is severely limited.

During the transformation in the UK, the Dept of Trade & Industry introduced a tool called the Benchmark Index which is an international, pan industry benchmarking tool. Improvement organisations such as The Construction Best Practice Programme (the Government funded industry improvement programme) and others used this tool to successfully educate construction leaders in business management tools helping them to compare their business performance indicators in areas of finance, productivity, staff customers and suppliers to other similar businesses and create actions for improvement. Clients such as BAA used the tool as part of an annual 'WOF' to assess long term suppliers for fitness of business to deliver. (A sample report is at Appendix F).

In NZ this tool along with others have been evaluated by MED and the NZ Business Excellence Foundation. To date, there are no tools such as this to assist manager of small building construction companies.

### 2.3.3 Industry level

The effects of LCP at project and business level have direct effects at industry level and can be tracked into overall industry productivity.

The industry as a whole lacks performance measurement, training in best practice and only the larger companies have professional quality control procedures. There is a high turnover of staff and businesses, a very low level of customer service culture, fragmentation of design and construction and comparably poor business and project management skills. In addition, client skills are generally low.

Overall, R&D is low and has focussed more on building products than on management processes.

There are 'pockets' of excellence, particularly within some of the larger contractors, for example, Naylor Love has been benchmarking now for some four years and has an internal Best Practice team. The company carries out regular customer surveys at the end of all projects and publishes information on its performance in delivery to time, budget, quality and health and safety.

The construction Industry KPIs published by CAENZ exist but have had very little traction, the 2007 data was not published due to the low level of returns.

Each year in New Zealand, the Baldridge Business Excellence awards are held, there has never been an entrant from the construction industry.

In September 2006, Building Research sponsored a study tour to the UK. The participants were exposed to a wide range of clients, and supply chain members and came away with the impression the British industry has improved significantly in recent years. This is borne out by tangible evidence presented to the Roading NZ annual conference in 2007 by CEO of Constructing Excellence UK, Don Ward, who showed statistics of annual year on year improvements across a wide range of KPIs including client satisfaction, delivery to time and budget and Health and safety.

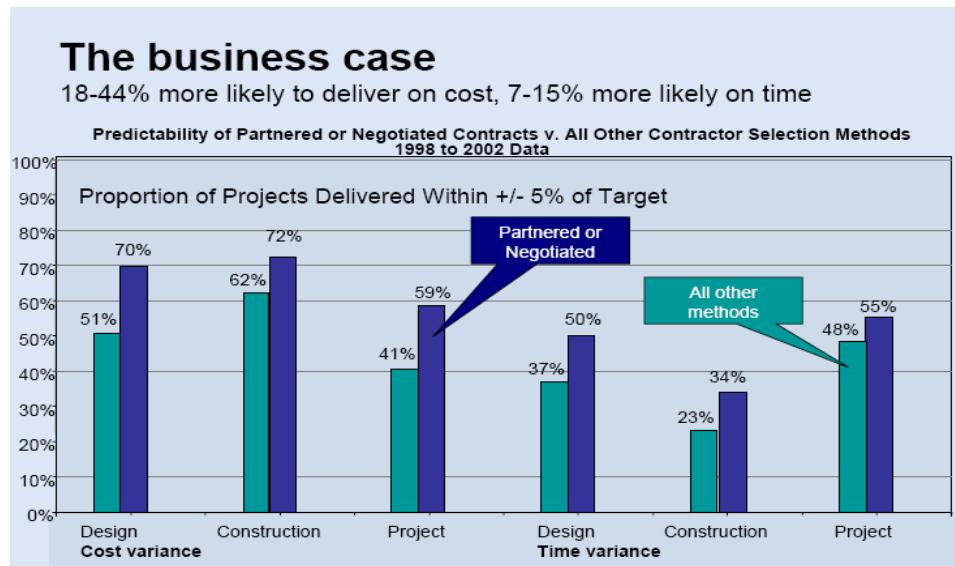


Figure 7: Cost ratios of a facilities lifecycle.

A key message from Don's talk was that the adoption by clients and the supply chain of collaborative type working arrangements was fundamental to the changes. Fig 7 shows the comparison of measured projects adopting LCP type arrangements versus more Collaborative models.

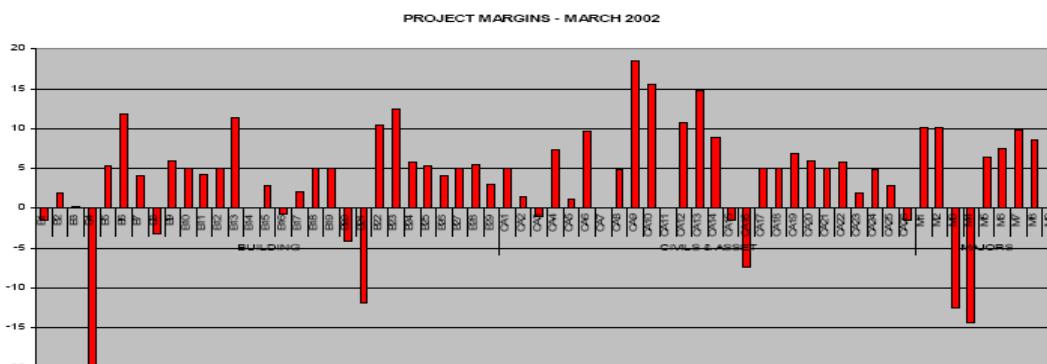
It is important to realise that this data comes from hundreds of anonymously self-reported projects from across the full spectrum of UK projects, and is dependent on the respondents' definition of "partnered" or "negotiated". In the former case, many firms are not rigorous in their understanding of partnering, and hence some very ordinary practices will be included in this category. The size of the performance gap (e.g. 59% of projects delivered on cost compared with 41%) is therefore even more remarkable.

The standard of business management and quality control was very high. Four examples are worth mentioning:

- 1) Costain Group PLC – Improving Profitability through Performance Measurement & Compliance

At the time of the tour, Costain were one the UK's largest main contractors with a turnover of £1.9 billion. The Presentation described how they implemented a robust best practice programme which was internally audited on all their projects. The results were a business turnaround from certain business failure to profitability. The presenter demonstrated how the company's compliance with Best Practice dramatically improved not only their profitability, but their ability to deliver predictable profit levels across all projects. Figure 8 shows

### *Project Margins – Mar 2002*



### *Project Margins – Dec 2004*

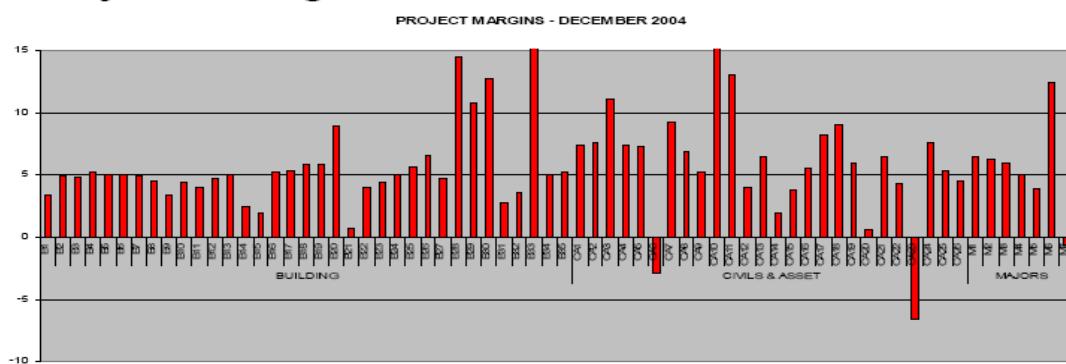


Figure 8: Costain Project Margins pre and post implementing Best Practice

- 2) Taylor Woodrow – Supply Chain Partnerships

At the time of tour, Taylor Woodrow was a leading housing development group developing sustainable communities of high quality homes in the UK and overseas. 2004 turnover increased by 26% to £3.3 billion. The company in a bid to improve performance and beat the competition, introduced 'Strategic Alliance Partnering (SAP)' across the supply chain.

The presenter explained. "The SAP is, for us, a reliable approach to improving the service to our clients without resorting to the adversarial tactics for which the industry is rightly criticised. We are creating sustainable profits from the improved performance generated by working with our partners. This is a far more sustainable and rewarding approach than relying on contract traps, non-performance and claims to create a profit margin." In 2003 the initiative won 'Innovator the Year' and in 2004 won the Building Services Journal award for 'Engineers taking the lead'.

### 3) Mansell – Customer Service

At the time of tour, Mansell was a leading contractor in the UK with a £500 Turnover of which 60% is under framework partnerships. Mansell is part of Balfour Beatty, total turnover, 4.9Bn

The presenter talked about the Mansell experience in measuring and benchmarking customer satisfaction. Measuring customer satisfaction is at the heart of the Mansell performance management system, fine tuned to the extent that they can interrogate the data to find the root causes of any problems. Despite having asked their clients to evaluate them many times the response rate to questionnaires is an impressive 80%. The company employs a full time Head of Business Improvement and Risk whose role is to ensure the response rate remains high. This has been achieved and the next challenge was to tighten the criteria as the company was achieving a consistent average 90%+ average score giving little room to improve. Figure 9 shows that trend and high scores.



### 4) Hertfordshire County Council - Performance Improvements with Framework Contracts

At the time of the tour, Hertford County Council was responsible for providing community services for the county of Hertfordshire, with a population of 1 million people & an annual budget for schools programmes of £20M.

In 2003, Hertford County Council embarked upon a series of Framework agreements. In April 2006 Keith Jennings visited NZ & presented to the NZCCG. He explained, "The effects of the frameworks and how it is all working out are quite stunning. Not only are we exceeding industry performance, but we are outstripping CE demonstration projects too, (See Appendix C). We have some new initiatives on the way - working down into the supply chain and sharing benefits plus we are seeing some really positive benefits."

Procured to deliver five years worth of school projects, the team of five contractors of varying sizes described how the frameworks were established and the methodology they used to work within the then strict UK public sector procurement rules. This programme was instrumental in the changes towards best value that the UK local Government have undergone\* LGTF toolkit

The full case study can be found at Appendix B.

## 2.4 Conclusion

Whilst the benefits described in the previous sections and section 4.2 are, in theory available to any procurement route with good client stewardship, evidence over the past ten years or so has begun to prove that the traditional, linear method of procurement does not in fact deliver that which it is considered by so many to do.

It is believed by many to be a method capable of delivering ‘best value’ or more accurately ‘best market price’ and in fact in most cases of construction projects does not deliver this at all.

The attractiveness of this method of procurement is that the client retains full control of the design process and in theory, the design outputs are provided as full and complete information to the market who then price accordingly.

The theory supposes that the design is in fact full and complete and error free, the client will not make any changes to the completed design and that all tenderers are equal in potential performance and only their price can differentiate between them.

The theory also does not fully understand the volume and quality of the sub-contracting that has increasingly become necessary for the main contractor to manage his business through the boom-bust nature of the industry, creating further fragmentation and ‘risk transfer’.

Finally, it has been demonstrated that just 33% to 40% (See Appendix D) of projects delivered during 2003 to 2006 achieved the original budget or less here in NZ, which goes some way towards disproving the assumption that this procurement method gives ‘cost certainty’.

More and more clients around the world are beginning to recognise that this form of procurement, whilst possibly entirely appropriate for commodity goods is not appropriate for complex products such as buildings. In the UK, the OGC (Office of Government Commerce) produced a guide called ‘Achieving Excellence’. The Scottish Government has also produced a new procurement policy handbook, see [www.Scotland.gov.uk/Topics/Government/Procurement](http://www.Scotland.gov.uk/Topics/Government/Procurement).

In New Zealand, the ‘horizontal’ public sector has also recognised the need for change and NZTA has produced a new Procurement Manual. The ‘vertical sector’ has yet to follow suit. The private sector is varied, however, there are many examples where the property division in a private client organisation is held under obligation to follow the traditional procurement method. This has been central to many discussions at the NZ Construction Clients’ group, ([www.clientsuccess.org.nz](http://www.clientsuccess.org.nz)) where members share experiences of having to find work arounds to this rule in order to follow their professional judgement and provide their organisations with best value solutions.

The case for the traditional procurement route in the light of so much evidence against it begins to seem thin. Sir John Egan in his ground breaking 1998 report<sup>6</sup> cites “**The industry must replace competitive tendering with long term relationships based on clear measurements of performance and sustained improvements in quality and efficiency”.**

### The future

Newer, more modern approaches to construction procurement designed around achieving significant improvements in performance are now in operation around the world and in New Zealand. The body of evidence grows and many have been able to demonstrate through tangible performance measurement that they are capable of improving the performance of the project, the businesses that engages with them and indeed the industry.

The Branz funded CCG Pathfinder Programme, designed specifically to share such knowledge has produced six such case studies to date, with a further 12 already waiting to be written up during 2009. (See Appendix B)

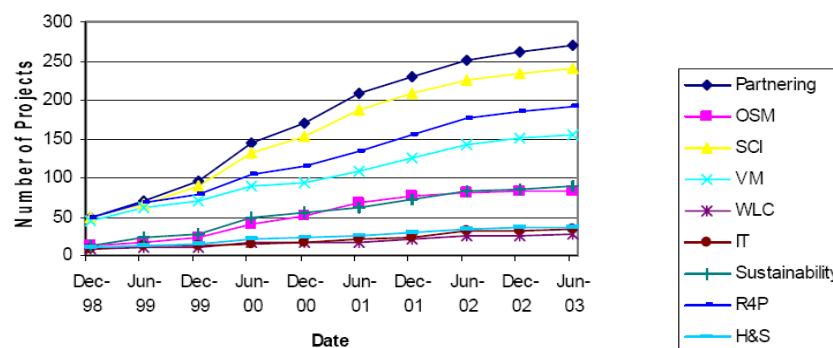
There are a wide variety of modern approaches to construction procurement. Section 3.1 attempts to categorise them, however, the innovative client is continually pushing boundaries in order to drive more value out of their portfolio, therefore the list continues to grow. What is evident and central to all of these procurement routes is that the client encourages and incentivises commercially, a collaborative approach with its supply team. This is dealt with more thoroughly in section 4.2.2, however, key themes which surface regularly on these types of project are:

- Excellent Health & Safety
- Quality based selection of team members
- Actively managed culture of collaboration
- Alignment of project goals
- A Performance Culture
- Collaborative planning & use of BIM technology
- Informed and ‘intelligent’ clients
- Whole of Life approach
- Early contractor involvement
- Open Book accounting.
- Strong time management
- Excellent Quality Control/Zero defect targets
- Active Risk Management
- Development of long-term relationships, formal or informal
- Joint training, workshops and team building events
- Site based waste management
- Commitment to sustainability
- Knowledge Sharing

Figure 10 below shows the simultaneous take up of ‘partnering’ or collaborative forms of procurement in the UK. As the take-up of collaboration has grown, so too has the adoption of other best practices such as off-site manufacturing, supply chain management, value management, respect for people etc.

Collaboration, and it’s enabling of early involvement, is the fundamental building block which facilitates a focus on client value, innovation, alternative solutions including for example, off-site options, and a culture of continuous improvement.

*Figure 10: Cumulative Uptake of Demonstration Innovations - May 2003*



### 3 Meeting Session 1

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The purpose of Session 1 is the following:

**Session One: Getting everyone onto the same field (set the scene)**

*Purpose:* To set the context for the focus on procurement, including background and links to productivity. Make sure everyone understands:

- the range of models that exist and what they are being used for (match case study examples to models);
- the reasons why a particular approach should be used, and the opportunities and risks associated with them (and what is required to make them work well); and
- the models currently used by capital-intensive government agencies, where they have worked well, and where they haven't (and why).

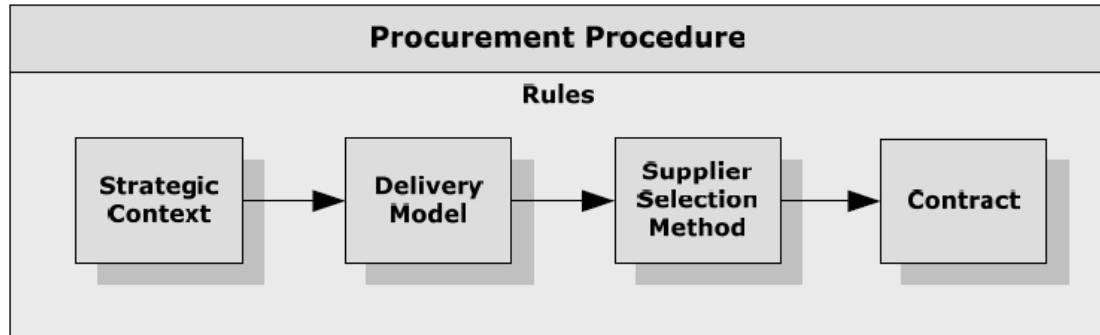
The following sections 3.1 to 3.4 comprise support material for Session 1.

### 3.1 Current procurement Models in use in New Zealand

This section of the document is designed to describe the range of procurement models available within New Zealand.

The range is actually infinite as various ‘ tweaks’ are possible and many clients adapt known models to their particular circumstances. In addition, clients, in discussing procurement models often confuse the Delivery Model, the Supplier Selection Method and the form of Contract. The new NZTA procurement manual<sup>7</sup> describes the procurement process as in figure 11 below:

Figure 11: NZTA Procurement Procedure Model.

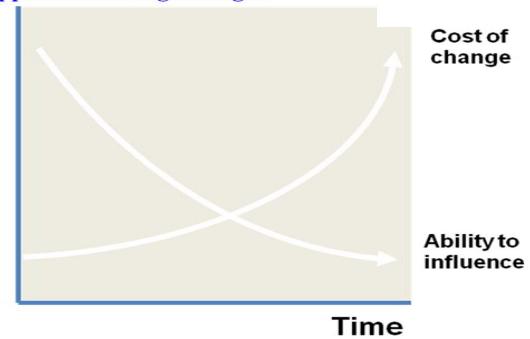


**Strategic Context** Importantly, the model includes ‘Strategic Context’. The quality of this activity by the client at the outset of the procurement process greatly influences the outcomes, perhaps more so than is often realised.

Evidence from the more advanced best practice examples of procurement in the UK have found that having optimised the process downstream of design to the maximum level possible, the improvement process points back up stream towards the client’s strategic activities and their business case for investment in the project. At this stage, the client, working with the supply chain, often rethinks the way in which they plan their property activities. Figure 12 describes the cost of change during the progress of the project.

Early involvement  
Opportunities to get it right

Figure 12:



**Delivery Model** describes the nature of the relationships between suppliers, the purchaser, the allocation of risk and how price is determined. (the way the relationships are defined)

**Supplier Selection Method** describes the method by which the supplier is selected)

**Contract** describes the legal agreement which establishes the framework for the delivery of the project

There are a range of options available by combining as appropriate to the strategic context, the Delivery model, the Supplier Selection and the form of contract.

The diagram below sets out the more common delivery models and supplier selection methods and suggests which work more appropriately together under general circumstances. The delivery models range from top to bottom in rough order of their move towards collaboration and integration in the supply chain. The selection methods range from left to right in order of price to quality.

It should be noted that this list is not exhaustive and evidence shows that the best clients are innovating constantly in order to bring about best value. A further note is that the names are not always consistent across sectors, and can differ in particular from the horizontal sector to the vertical. Where alternative names are known to be used, these are in brackets.

**Table 1. Combinations of Delivery Model and Supplier Selection Method.**

Supplier Selection Method	Lowest Price Conforming	Price Quality	Target Price	Quality Based
Delivery Model				
Traditional (Linear, Segmented)	✓*1	✓	☒	✓
Fast Track (Accelerated)	☒	✓	☒	✓
Two Stage (ECI)	✓*2	✓	✓	✓
Negotiated Tender (Preferred List)	✓*3	✓	✓	✓
Design & Build	☒	☒	✓	☒
Management Contracting/Construction Management	☒	✓	✓	☒
Frameworks (Supplier Panels)	☒	☒	☒*4	✓*5
Collaborative Working Arrangement (Integrated Supply Teams, Partnerships)	☒	☒	✓	☒
Alliance	☒	☒	✓	☒

Key: ☒ = Recommended ✓ = Can be used, ✗ = Not recommended

\*1 Only use for the simplest most repeatable projects such as housing. The design should be quality checked, complete and there should be little reason for changes during construction.

\*2 Stage 1 should use Quality based.

\*3 Tenderers are known to the client, prequalified and proven to be equally capable of delivering the project. Some clients maintain a database of **Prequalified** suppliers, such that main quality information is not required again at each tender, just the price, NZTA have one they call a 'register'.

\*4 When procuring Framework suppliers, there are no specific projects to price, however, once the suppliers are appointed, target price can be used for individual projects.

\*5 Can be used; however, it is recommended that some form of pricing mechanism is involved in procuring framework suppliers in order to have a cost model to price future projects from. This can take the form of a model project which calls for rates to be priced. Hence the Price Quality method is the recommended option for Frameworks.

The following pages describe the most common procurement models used and the situations they are often applied to. A short case study is included where possible with each model to illustrate its use.

### 3.1.1 Traditional (Linear)/ Lowest Price Conforming

**Description:** The design is completed using in-house or via contract with design consultants. The design is then put out to tender to the market. The tenders are assessed and the winner is the lowest price. The price is usually a lump sum and the client does not have any control over the choice of subcontractor, except where they are client nominated. This can add complexities of risk which the main contractor may price or abdicate.

**Most Common Supplier Selection Method:** Lowest Price Conforming, but price quality is also used

**Common uses:** Currently widely used but not always appropriately. Should only be used for simple, repeatable projects which can be fully pre-designed with few or no client changes. Generally not recommended.

**Advantages:** Relatively little spend in designing projects which may not proceed to full construction.

**Disadvantages:** Many – high risk of cost time and quality blow-outs due to unforeseen design errors, client changes, contractor quality. Limits innovation opportunities. Can be adversarial

#### Case Study

*The following case study has been chosen as a real example of where a more modern approach would improve productivity and performance. Actual names are not provided.*

*This client has a large portfolio of property which requires periodic rebranding. The client's core policy is lowest price tendering for all its needs from paper clips to construction. The design team is in house due to other close relationship required with the marketing department. Speed to market is the key driver once a project has been agreed.*

*The client procures each project by running a tender competition with the market. With few exceptions, a limited number of contractors historically have won the tenders. The outcome over a year is that each of four main contractors receive approximately similar volumes of work. This is mainly due to the fact that once a contractor has reached capacity, they price their tender accordingly which means that it is not no longer the lowest price. On the rare occasion that a new entrant wins the tender, they are generally not asked to tender again as the steep learning curve for them resulted in non-performance.*

*This client is missing a number of opportunities and creating waste in the supply chain. The waste comes from the cost of the tender process to themselves and the contractors through the administration of the process. The contractors still price when they cannot physically do the work as they are worried they will not be asked to price again if they don't. This is very common and also happens at the subcontractor level too.*

*The client is missing a range of opportunities. If they formalised a framework agreement with the suppliers, they could negotiate each project with the team such that each contractor delivers the projects most appropriate to their location and resource levels. The tender administration costs saved are reinvested into innovation. Targets for performance are set and the contractors are asked to work together to improve the process, and the products. Productivity increases.*

*In the UK, Nationwide Building Society ran a similar team called 'the famous five'. They became so mature as a team that they shared staff. The performance improvements gained including reducing time to deliver by one third, real reductions in cost whilst improving the profitability for the contractor on each project enabling them to reinvest into their businesses, to the ultimate advantage of the client.*

### 3.1.2 Fast Track (Accelerated)

**Description:** A procurement method which has grown out of the need for clients to deliver projects quickly when the design is not fully complete. The client invites the contractor into the team at an early stage based on pricing a P&G and Margin. The subcontracts are let as the design information becomes available. This method requires the client to be very involved with the project and usually is given the option of approving the subcontractors, but this is often based on lowest price, but not always.

**Most Common Supplier Selection Method:** Lowest Price Conforming based on P&G and Margin, but Price Quality or Target Price is also used. Target Price recommended.

**Common uses:** Education projects which have a narrow window of completion due to term times, retail projects aiming for specific shopping dates such as Christmas etc.

**Advantage:** Enables flexibility in the design process. Allows client involvement with choosing the subcontractors enabling the client to be involved with cost control and quality should the client choose to direct the main contractor to procurement on this basis. Most commonly though, cost is main driver.

**Disadvantages:** Large risk with the performance of the design team, which are usually separate organisations for the architecture, engineering and M&E. Quite stressful to the team especially as the NZ market does not have a lot of experience and lead times can be missed using this method. Requires very close planning and management.

#### Case Study

*There is a main case study at Appendix B, **Hopkirk Research Institute**, which demonstrates how a client whose main policy is lowest price confirming still managed to achieve good results with this method by implementing some of the best practices in section 4.2.*

*Another example has been an education project completed in 2008 which used this method and ran into trouble with the M&E designer. The designer was non-local and had resource issues which meant that the construction team, in particular the M&E contractor could not proceed without the necessary information. Fortunately, the client has chosen a best practice contractor who implemented Last Planner along with a number of other initiatives and the project was achieved on time. This project is a Pathfinder Project and a case study will be published in 2009.*

### 3.1.3 Two Stage (ECI)

**Description:** A procurement method which has grown out of clients' recognition that the contractor's involvement at design stage can be invaluable. The contractor and designer are appointed together at design stage with the intention that the contractor provides input into the design process. The project is then taken to the market for delivery. The initial contractor has an opportunity to bid for the second stage along with others.

**Most Common Supplier Selection Method:** Price Quality or Quality Based for the first stage, followed by LCP often for stage 2.

**Common uses:** Large, complex projects

**Advantages:** Enables contractor involvement with the design, focussing on buildability, value management and risk identification.

**Disadvantages:** Additional cost involved at design stage. A team learning curve if a new contractor is appointed at stage 2.

### 3.1.4 Negotiated Tender (Preferred List)

**Description:** Similar to Traditional Linear, however, the client has either a prequalified list of tenderers or a group of preferred contractors such that the tender is closed within the group. The client will have satisfied themselves that the contractors are all capable of delivering the project(s). They may not know the precise capacity at the time of tender though and the contractor

**Most Common Supplier Selection Method:** Lowest price but having prequalified the contractors beforehand

**Common uses:** Private clients such as developers who have specific needs and require contractors who are familiar with them.

**Advantages:** The contractors and the client have knowledge of each other and this lessens the learning curve. Reduced admin for the client and the supply chain in the tender process. A range of supplier selection methods can be used depending on the complexity of the project. This method is similar to the Framework method but without the added advantages of a formal arrangement to improve the product and the process.

**Disadvantages:** This method means that there is still a disconnect with the design and construction process as the client does not know who will be delivering the work until it is designed. This can be mitigated by awarding the project on P&G and margin and involving the contractor early. Little client influence over subcontractors who are often procured on lowest price to enable the contractor to price low to win the work.

Case Study:

*Nationwide Building Society (UK) mentioned under 3.1.1 began their supply chain journey with this method. They soon realised that the weakness was with the downstream supply chain where the main contractors were procuring subcontractors on lowest price often introducing new and inexperienced (with the client's product) organisations.*

*Investigation and the use of supply chain management techniques took them toward forming a formal framework with a partnering charter. Eventually the team of contractors 'Famous Five' were allowed to allocate projects themselves without client involvement according to capacity and capability at the time that the project was required. This required the client to preplan well in advance of the projects being required.*

*Many developers use this method and do not realise that they are but a short step away from really empowering their suppliers to innovate for them and deliver real value add.*

### 3.1.5 Design & Build

**Description:** The client lets the contract shortly after concept design and either specifies that the contractor brings on board a designer or the client nominates and novates the designer. The idea is to pass the design error risk to the supply team of designer and contractor.

Variations on the theme can involve the client adding in an Operate clause or an Own and Operate clause. This means that the client passes on the responsibility to the contractor for operating and maintaining the facility, or fully funding the project based on guaranteed lease revenue.

**Most Common Supplier Selection Method:** Target Price or Quality based. Can be lump sum priced or guaranteed maximum price.

**Common uses:** A wide variety, usually one off projects where the design risk may be high e.g. technical building such as manufacturing facilities that may involve plant which can be specified on a performance basis. Other uses may be relatively simple buildings which do not require much architectural input e.g. multi-storey car parks. Standard products such as standardised housing.

**Advantages:** Perceived transfer of risk

**Disadvantages:** The risk of the facility underperforming in design due to insufficient specification. Loss of control of the design.

### Case Study:

*Auckland International car park was successfully delivered using this method by employing a specialist organisation whose core product was delivering car parks. This is a most appropriate use of this method, where the supplier has differentiated themselves on the basis of product experience.*

### 3.1.6 Management Contracting/Construction Management

**Description:** Not very common in New Zealand. The method involves employing a management contractor based on P&G and Margin and working with the design team to set a target prices. The management contractor then places the subcontracts as the design is developed. The management Contracting form is very similar to Fast track, the Construction Management version differs in that the client holds a direct contract with the subcontractors. The contractor takes no risk and works effectively as a consultant.

The advantages and disadvantages re similar to fast track. The success of the project relies heavily on the quality of the management contractor employed.

### 3.1.7 Frameworks (Supplier Panels)

**Description:** The client lets a series of 'packages' of work which may not be specified in any way during the initial procurement process. The package may be for a volume of work (not recommended as situations change) or more commonly a period of time during which the client will allocate projects to the contractor that are required according to the contractors capability and capacity at the time.

The client is required to pre-plan their portfolio of work in advance in order to know how many contractors are required. A 'rule of thumb' is used in that contractors are not given more than 20% to 25% of their annual turnover in any one year. This avoids mutual dependency.

Exit clauses are built into the agreement along with performance targets required.

Performance measurement is key as this is the tool which demonstrates probity and value.

The leading edge clients work with the main contractors to bring on board the key subcontractors to maximise the advantages.

**Most Common Supplier Selection Method:** Price quality with price being based on model projects and rates agreed including P & G and Margin.

**Common uses:** Any client who has an ongoing portfolio of project.

**Advantages:** This form of procurement has the most advantages for clients with programmes of projects. The method enables full integration, minimises procurement administrations and allows fast start-up with new projects

**Disadvantages:** Uncertain annual budgets or volatile clients may struggle with this one as the innovation effort is given as goodwill based on an expected volume of work. The upfront procurement of the framework suppliers can be extensive; however, once it the panel is in place, there are no further procurement activities with the main contractors. This in turn can lead to stakeholder concerns that price being paid is not contestable. Often clients using this method retain a proportion of their portfolio to take to the market to test prices.

Case Study: *Main case study at Appendix B – Hertfordshire County Council Frameworks*

### 3.1.8 Collaborative Working Arrangement (CWA)

**Description:** A formal arrangement which integrates the supply team into a Target Outturn Cost with a pain share gain share mechanism.

**Most Common Supplier Selection Method:** Quality Based or Price Quality based on P&G and Margins

**Common uses:** Large complex projects with issues such as difficulty in attracting labour to the project or procuring in a volatile market

**Advantages:** Very high standards of cost, time and quality certainty if done well. Very attractive to companies and individuals as an enjoyable method of working. Excellent opportunity and incentives to innovate.

**Disadvantages:** Large investment in training the team and bringing everyone up to speed. Interestingly, this method of working does spoil people for going back into traditional work as once they have experience the team work, ability to innovate and sense of achievement involved in this delivery model, they do not generally want to go back into the old way of working

#### Case Study: Spring Hill Prison

*The prison was procured and delivered during a boom in the industry with rapidly rising prices and a shortage of labour. The project was remote. The project was delivered within the target out turn cost, to the desired quality and on time. The health and safety was excellent.*

*Most people will be aware that the project suffered bad press for perceived cost overruns. The main reason for this was that the original estimate made at an early stage was not updated once the target out turn cost was fixed within the market at the time.*

*Most people involved with the project agreed that it was a huge success and that it would not have been able to have been delivered within the market conditions at the time without this delivery model being in place. For a presentation on the project go to*

*[http://www.constructing.co.nz/index.php?option=com\\_content&task=view&id=107&Itemid=69](http://www.constructing.co.nz/index.php?option=com_content&task=view&id=107&Itemid=69)*

*Successes of the project have been recorded as:*

- *Every project delivery milestone achieved.*
- *\$7 million of VM delivered during TOC development*
- *A project upside of some 2.7% has been generated*
- *Significant Department management savings*
- *Up to a \$1 million of work per day achieved.*
- *Workforce peaked at 970*
- *All KPI targets achieved or bettered.*
- *Self-certification process has produced outstanding Built and documented Quality*
- *Employment initiative with Work and Income/TEC*
- *Trade Apprenticeships established*
- *Schools gateway programme*
- *No Community or Neighbour complaints*

### 3.1.9 Alliance

**Description:** The most integrated form of procurement available (along with CWA). An Alliance is where the owner, contractor and consultant work as an integrated team and their commercial interests are aligned with actual project outcomes. It is underpinned by a collaborative agreement which is outcome not claims focused.

The client strategically influences and controls quality through participation rather than external direction & monitoring.

This method is considered by NZTA to be the premium mechanism for rewarding mature contractors that are performing well.

**Most Common Supplier Selection Method:** Quality based

**Common uses:** Large complex projects

**Advantages:** Most alliances report many benefits listed in section 4.2.1. This delivery model transforms individuals' experiences of the industry and is a highly motivating experience which helps to attract people into the industry. Advantages include:

- Encourages optimal behaviour
- Collective risk sharing
- Aligned objectives (Outcome focused)
- Potential fast track selection and engagement process
- Not onerous on sector estimating and design resources
- Provides flexibility to react to unforeseen conditions quickly
- Incentive to consider non-cost measures e.g. Stakeholders Communications, Environmental, Whole of Life, Customer Service
- Strong potential for innovation through design and constructability optimisation
- Provides incentives for value engineered solutions
- Strong ability to attract resources
- Opportunity to place client personnel into key positions within the Alliance Management Team enables:
  - upskilling of NZTA staff;
  - client gains valuable knowledge of the design and construction of the works,
  - critical to understanding future operation and maintenance aspects
- ability to participate in key decision making where activities may have an impact on the wider client issues.

**Disadvantages:** Upfront investment in upskilling people to work in a new way. Similar comments as for CWA, i.e. people do not want to go back to traditional projects having working on an alliance project.

NOTE: There is a trend towards a 'Competitive Alliance' which gives the client the advantage of having two bids to choose from, however in market such a new Zealand, this method ties up a vast amount of resource in the process and leads to considerable waste. The client usually pays the losing team for its efforts, however this is paying for non-value added service – i.e. waste. Extreme caution should be given to this method of supplier selection.

Figure 13 is a model developed by NZTA to explain the key differences between an Alliance and a competitive Alliance.

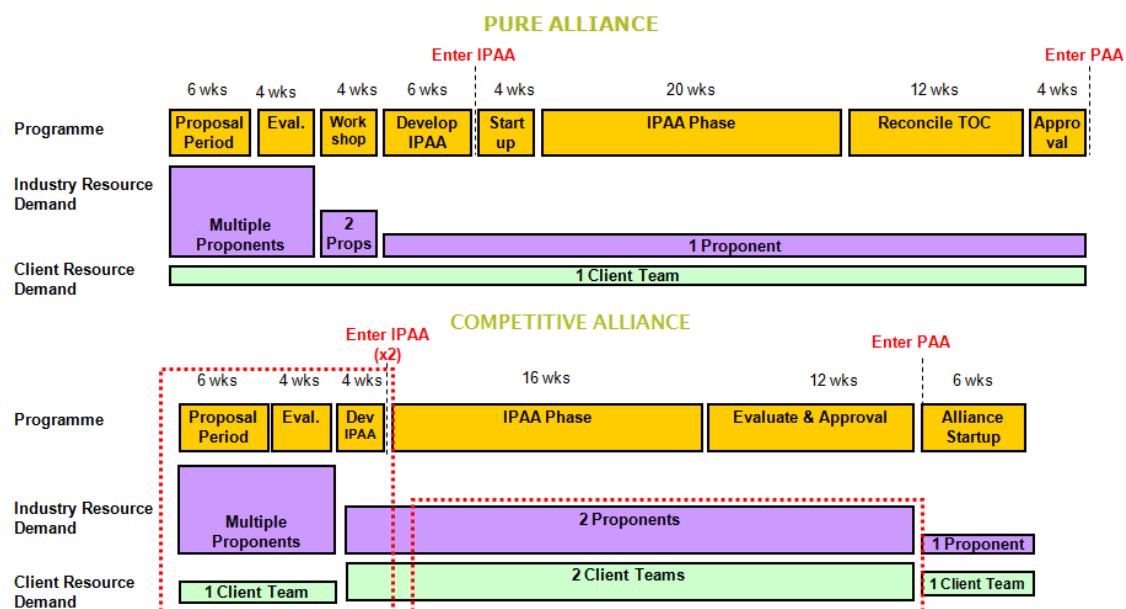


Figure 13: NZTA Alliance Vs Competitive Alliance Procurement Process.

### Case Study:

#### **Freeflow Alliance – Grafton Gully Project (GGP), Auckland, NZ**

This was the first time that Transit has trialled the Alliance model, and a robust Value for Money (VfM) analysis concluded that the model was highly successful and returned a higher level of VfM than either a Design & Construct or Traditional Measure & Value model<sup>2</sup>.

The \$65.7 million Grafton Gully Project (GGP) was designed to improve the efficiency and safety of Auckland's central city motorway.

The project itself was a huge undertaking with the construction of three bridges, one underpass, 6,000m<sup>2</sup> of retaining walls, and 80,000m<sup>2</sup> of new pavement. One of the bridges constructed carries the Newmarket branch rail line.

The Alliance was formed in late 2001, &, following the initial project, CMJ1 went on to deliver a further \$60m+ of related projects. The alliance comprised:

Freeflow's work also involved cooperation with ten utility companies to relocate and put in place service lines for the new traffic layout, which was carried out simultaneously during the construction period.

#### **Benefits**

The project has won numerous awards and has been recognized throughout NZ as a highly successful undertaking. Key Benefits include:

- 7% below target out-turn cost
- Project completed 6 weeks ahead of schedule
- Unprecedented amount of positive feedback from the community on quality, aesthetics, lack of disruption & site tidiness
- No serious accidents & a very strong safety culture

Further Full Case study – **Alpurt B2 at Appendix B**

**NOTE:** A note of caution is required as the adoption of any of these models without also following themes of best practice can mean that the best results are not obtained. In other words, the adoption of a “model” alone does not guarantee best value or high productivity.

### 3.2 Observations on how Government and Industry could improve performance using current models.

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In order to obtain world best practice results, clients need to move towards collaborative design and construction plus integrated supply chain planning. However, there may be some easy interim steps for those having difficulty persuading the policy makers.

In the UK in 1994, some 14 years ago, clients began this journey by following the recommendations of a report by Sir Michael Latham. These in short were:

#### Clients

- Use short tender lists
- Adopt a single 'approved list'
- Select on quality and price
- Join a forum to share best practice

#### Legislation

- Adopt fair contracts

#### Industry

- Aim for 30% real cost reduction
- Create a joint Code of Practice for selecting subcontractors
- Adopt partnering
- Develop training, education, public image, equal opportunities

#### Contracts

- Adopt the 12 'fair' principles\*
- Create interlocking 'suites'

The UK has achieved many of these and has moved on, however, for those on the starting blocks of moving away from lowest price tendering, they are good first moves.

Further thoughts involve working with the list of Best Practice themes in section 4.2.2. Evidence is showing that these are fundamental to achieving best value. Workshop with the internal team to see what can be implemented within current boundaries.

Finally, the LGTF toolkit for implementing Rethinking Construction at Appendix G is another good place to start. This was written in 2000 and much thinking at the leading edge has happened since then, however, the premise of the toolkit is sound and easy to follow.

## 4 Meeting Session 2

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The purpose of Session 2 is the following:

### **Session Two: Where we need to go (identify problem)**

*Purpose:* To identify the problem and in which direction the sector needs to head. In particular, to:

- identify some of the examples of best practice procurement that are occurring in New Zealand (and abroad if necessary), drawing out the themes and benefits from these;
- map where New Zealand practices in general are against the ‘best practice’; and
- identify where the problem lies - is better consistency needed across the board, and/or a lift across the board?

## 4.1 Best Practice Case Studies

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This section aims to further examine four projects in detail in order to highlight the benefits and themes. The full case studies are taken from the existing Pathfinder Programme and can be found at Appendix C.

The Pathfinder Programme, is operated by the NZ Construction Clients' Group and is funded by Branz ([Click here](#) for web site). The programme is designed to capture and share Kiwi innovation in construction.

The case studies chosen to illustrate the various procurement models are:

- **The Hopkirk Institute** – Fast track - Lowest price (P&G & margin) / informal collaboration
- **ANZ Green Branch** – Traditional lowest price/informal collaboration
- **Alpurt B2** - Formal Alliance – Quality based
- **Hertfordshire County Council** – Frameworks (Supplier Panels) – Price Quality
- **The Plaza, Palmerston North** -

## 4.2 Themes and benefits from the best practice examples

The following report aims to highlight the emerging themes and their benefits from case studies examined in NZ and overseas.

### 4.2.1 The opportunity for potential benefits

The New Zealand and International Best Practice examples in previous sections demonstrate considerable benefits which can be, and have been tangibly measured. Such benefits include:

#### **Improved product**

- Outcomes which better meet the original and evolving needs
- Fewer defects in delivery and future operation
- Earlier delivery and improved transition to operation
- Enhanced customer satisfaction
- Quicker concept to completion cycles through improved engagement with supplier
- Improved defect remediation
- More effective decision making facilitated through openly sharing issues, ideas and information.

#### **Added value**

- More appropriate selection in quality and specification to meet the anticipated life span.
- Better balance of capital and revenue investment deployment
- Lower lifecycle cost of ownership
- Appropriate flexibility and adaptability to suite anticipated futures
- Reduced cost of transactions
- Opportunities to benefit from economies of scale and recovery of unnecessary tender costs
- More realistic risk profiles
- Reduced project insurance costs and simpler recovery processes and guarantees

#### **Greater predictability**

- Seamless planning and implementation
- Clarity of programme progress
- Minimised risks of misunderstandings
- Avoidance of delays and overspends
- Improved component and material delivery through better scheduling and inventory management
- An open and honest environment capable of eliminating unpleasant surprises
- More certainty in cash flows and less credit needs

#### **Fulfilling environment**

- Safer, more respectful and supportive climate
- Opportunity to be consulted and involved in decisions
- Clarity on levels of empowerment and authority to act
- Culture of mutual enjoyment and success
- Minimised focus on litigation freeing individuals and companies to focus on performance
- Continuity of employment and the opportunity to build long term relationship based on mutual trust

#### **Learning culture**

- Encouraging questioning and challenging to improved understanding
- Opportunity to offer alternatives and to innovate
- Freedom for personal growth and accountability
- Continuously improving processes, methods and outcomes
- Design solutions which are easier to manufacture and construct
- More focused and efficient research and development with reducing development timescales
- Opportunity to learn from own and others mistakes

In theory it should be possible with good client leadership and excellent management practices practised by all the supply chain including the client to achieve the benefits above, however, experience is showing that the way in which the team is put together and the point at which each player comes into the project has a large impact on the whole teams ability to deliver these benefits.

What is also becoming clear is that it is more important to ensure that certain emerging Best Practice themes are in place in order to achieve these benefits, the procurement model is merely a method of facilitating these best practice themes. Some of the models are designed to encourage these best practices and hence make it easier for the team to carry them out, whilst some models present hurdles to the team which make it more difficult to practice the themes.

It is also important to note that there is an underlying – and often dangerous – assumption that clients and their supply chain partners are capable of working in a more integrated and collaborative fashion. Throughout any process to decide on a procurement method clients and suppliers should objectively examine their capability to support the desired model. The test is relatively simple – are we demonstrating the behaviours and thinking across our own organisation?

This in part reinforces that fact that, even with the least integrated procurement model, i.e. LPC, it is still possible with good client stewardship to achieve an excellent outcome. Two of the New Zealand case studies at Appendix B demonstrate this. However, what becomes clear in talking to the clients is that they found the procurement model to be a hindrance and it created extra work to achieve good results. Another important factor was that in both case studies, the main contractors had previously won through tender other projects and neither therefore was unknown to the client.

#### 4.2.2 Emerging Best Practice themes

**Best practice definition: A technique, method, process, activity, incentive or reward that will deliver a particular outcome more efficiently and effectively than any alternative technique, method, process, activity, incentive or reward activity available at the time.** (Source NZTA Procurement manual)

Section 4.2.1 talked about the opportunity for benefits. It is becoming increasingly obvious that these best practice themes below are more important to achieving these benefits than the actual procurement model. A number of clients report that they have found ‘workarounds’ to include all or some of these best practices despite their organisations policy of ‘lowest price procurement’.

UK experience concurs. The Local Government Task Force, (LGT) toolkit does not specify a procurement model, rather lists a series of best practices that should be in place (Appendix G). It asks that the authority follow the best practice guidelines and innovate on the most appropriate procurement model which should always involve early involvement and the intention to develop long term benefits. Probity and accountability are paramount and the decision process well documented. Beyond this, the tool kit is not more prescriptive.

**NOTE:** Performance Measurement is fundamental to this approach in order to demonstrate Best Value. Without it, probity and accountability cannot be satisfied.

## Best Practice Themes

The following best practice themes have emerged from the desk research, the authors experience and input from Charissa Snidjer in her work with the NZ CCG's Pathfinder Case Study Programme.

### Health and Safety

Establishing excellent health and safety procedures has many positive side-effects, apart from the obvious one of protecting the people working on the site. What has been demonstrated is that it promotes cleaner and tidier sites and forward planning. This in turn creates greater productivity as fewer mistakes are made on site both in safety and in rework. It also has the added advantage of the Contractor being known in the industry for caring about those who work for them, which attracts people to work for them, establishing a positive virtuous cycle.

### Selection of team members

Team selection is based on companies and more specifically, people's experience, skills, ability to work together and proven quality of work rather than on price alone.

### Collaborative approach

To help establish a collaborative approach it is ideal that the formal structure, i.e. the delivery model, selection method and form of contract matches the way of working. Otherwise the next best step is to create an informal charter that overrides the contract on a day-to-day basis.

The LGTF toolkit (Appendix G) recommends this approach. The incentive for suppliers to maintain the informal charter as it is generally not contractual is that of repeat work. This incentive should never be underestimated by the client.

With either method the following principles and procedures are established to help support and sustain a healthy collaborative environment. These are, having transparent and open communication, where team members respect each others' knowledge and are willing to listen and learn from each other. People are expected to contribute beyond demarcated disciplines. This is helped by establishing a flat hierarchy, where facilitative leadership is encouraged. A 'no blame culture' is part of the principles behind sustaining a cooperative environment, where people are expected to admit mistakes and work together to find a solution.

Continuous reporting helps communicate the status of the project, as well as pre-start workshops, induction workshops, toolbox meetings and other forms of helping inform people of the project's goals, objectives and programme as well as giving a forum for being able to contribute to finding innovative solutions.

### Early involvement of Contractor

The growing complexity of building demands collaboration as no one discipline has sufficient skills or knowledge to understand the consequences of the whole process. In particular today with the driver of environmental sustainability, where innovation has never been so important.

Integrating the design and construction has been found to help improve efficiency, shorten construction periods and reduce waste. The Contractor is able to provide construction expertise during development of design documentation, particularly around buildability issues. Often the contractor is paid a fee at the appropriate stage in the design for advice. Procurement methods still allow for a tender process to then select the contractor to build the project should that be deemed necessary, although best practice would be to retain the original team. This is sometimes called two-stage tendering.

## Alignment of project goals

By bringing the Project Team together at the start of the project to collectively agree to key objectives and performance measures helps create a shared purpose and ensures that everyone works towards the same goal. It has the additional advantage of clarifying what the expected outcome is and makes decision making easier as everyone can base their decisions on the agreed objectives.

This in turn empowers people and flattens the hierarchy as a wider tier of people can validate decision-making. This helps brings a sense of commitment to those working on the project, as people know that their efforts are contributing to the outcome. It also supports continuous improvement, as by measuring the performance you able to identify ways of improving practice and procedure.

It has been found to be particularly helpful to have the client speak personally to as wide a group of individuals as possible about their personal goals and drivers. People respond to this and feel very much a part of the team. Too little has been made of the requirement for individuals to feel 'heart and soul' in their work in the past. Formality of business has precluded the idea that feelings might drive behaviours. Best practice now recognises people's personal drivers which most often place sense of achievement above salary.

## Performance Culture

Part of the alignment process is establishing key performance measures that will be measured throughout project and demonstrate whether the project or programme is keeping to its goals.. Performance measures are the key indicators of what is valued by the Project Team. These are ideally created by the team with the client in a workshop. Basic indicators are performance in time, cost quality, satisfaction of client and team and health and safety. The Alput case study demonstrates how the inclusion of an environment set of measures drove innovation in that area.

It cannot be underestimated how important Performance Measures are in a collaborative procurement model. They form the tool which demonstrates whether the project is achieving best value and allay people's fears about moving away from lowest price. Used properly, the measures are both lead and lag and results direct decisions on a daily basis to steer the project on course.

For example, the Hertford City Council case study demonstrates how the client used the measures to set targets which the suppliers needed to meet each year to remain framework suppliers. QLDC is using the same approach but it is too early in their process for a case study as yet.

## Collaborative Planning (use of technology BIM)

At both design and construction stage forward planning is strongly recommended. It involves the Project Team considering aspects such as material selection, lifecycle analysis, waste management, health and safety issues, work plans and commissioning targets. Coordination issues are identified ahead of construction on site, which significantly minimizes delays and the cost of rework.

**BIM:** Of particular assistance to this is the use of BIM or Building Information Modelling. BIM could be the single biggest innovation in our time which transforms the building process. It essentially allows for the building to be constructed twice – once virtually and once on site.

This means that the biggest complaint of the industry – the fact building is a prototype as it is the first one of its type to be built (with some obvious exceptions), examples have shown dramatic reduction in construction time through rigorous testing of options which the whole team can contribute.

One such example at a conference in Australia was the replacement of a 3+3 lane bridge in Seattle. The bridge replacement would normally have closed the road for a month or more. Using BIM, the total closure time was 72 hours, each minute planned meticulously.

As part of forward planning, ongoing regular review processes such as assessing costs, programme, risk register and health and safety are established with the aim of keeping one step ahead of the work and also finding ways towards continuously improving practices and procedures. BIM models can also be used to manage time and cost and project team can run simulations and show where the project should be at any calendar date and how much should have been spent. This is known as 5 D modelling.

The **Lean Construction tool, Last Planner** is gaining increased use throughout New Zealand which is proving a fertile ground to the tool. Its take-up has been relatively rapid since being introduced in 2005 compared to the UK, proving that New Zealand can quickly move ahead of the game when it comes to innovation.

The case study The Plaza demonstrates the use of both these tools and although it is early days in the life of the project, the findings are positive so far.

### Informed 'Intelligent' clients

Informed or 'Intelligent' clients are key to a successful outcome as they are able to clearly articulate their requirements and key drivers. The word 'intelligent client' is a term which describes a client organisation which has employed industry professionals on its in-house team to manage the whole procurement and delivery process.

These clients are active throughout the whole project delivery and in all key decisions. They are project focused and conscious of time and how it affects the process and therefore the importance of making decisions in a timely manner.

Intelligent clients are aware of the advantages of being transparent and proactive in creating open dialogue with stakeholders. They also foster a commitment to sustainability and demonstrate leadership. Often client organisations complain that they are not able to maintain these individuals permanently as their portfolio goes through cycles. For public sector clients, one idea maybe to create a central pool of highly trained intelligent client individuals.

### Whole of Life

As part of the agreed objectives, a commitment to sustainability means that costs are based on **Whole Life Cycle** approach rather than on initial costs of construction. It has been demonstrated that for every \$1 spent on capital construction, \$5 are spent on maintain the building through its life and \$200 are spent on the resource housed by the facility. Interestingly, \$0.1 is spent on the design process. Best practice shifts this equation so that more is spent on the design phase and construction phase to receive a bigger pay-off during the life of the building.

Leading thinkers have also recognised the importance of the design of the building in the productivity of the work force. Studies have shown that two single factors impact productivity in the workplace – natural light and air quality. Therefore, spending more in the design and construction stages to focus the facility in delivering productive workplaces is again a further example of how the leading clients are thinking when it comes to their requirements and realising them.

This begins to be a long way from the concern purely of the lowest priced contractor, these clients are seeking innovative companies who can bring intelligence and creativity to the party. The pay-offs in \$\$\$ downstream are far great than the relatively small potential \$ saving by going to the cheapest price, which often does not end up being the cheapest anyway as described in section 2.3.1.

BIM models are now capable of maximising whole of life development and can model scenarios in advance of designing permanent features.

## Cost Management

To help sustain a collaborative approach, it is important that the Project team manages and communicates costs with each other in a transparent and honest manner. It is particularly helpful to have established as part of the policies '**Open Book Policy**', as this ensures clear accountability. Costs are managed collaboratively, rather than separately.

The implementation of **gain share/pain share** or other such incentive mechanism with the whole team acts as an economic commercial driver to help align people together. It creates an incentive to help each other and be constantly vigilant towards improving the whole process.

Of equal importance is a good change management tool which helps the team predict outfall effects of change. The use of BIM with a good cost model is useful for this.

## Time Management

Best practice projects demonstrate time KPIs on walls and around the site office. The teams use collaborative planning and often Last Planner meetings to ensure the project is kept on track. The best projects are managed in this way in a calm predictable manner, the atmosphere is entirely different to traditional project where the atmosphere and attitude of the team can be one of fire fighting and stress.

## Quality Management

A key performance measure in realizing best practice is the Project Team achieving an excellent quality of finish. Often, as part of this, the team work towards a zero defect target at Practical Completion. The Architect and Contractor pre inspect the building together on a regular basis to minimize the defects list at Practical Completion.

Key to the success of the project and retaining positive relationships with the client is the team resolving defects quickly and efficiently. Naylor Love has taken a proactive approach to this and has developed a suite of internal tools to help eliminate defects. They actively measure this area and involve the client and the architect.

Best practice quality management begins with choosing suppliers who themselves, have best practice or quality systems. Gathering the team around the project early helps to establish the projects quality systems.

## Risk Management

Risk management involves understanding and managing risk of all performance measures identified by the team as important, i.e., cost, time, quality, health and safety and environment. It is useful to create one consolidated Risk Register, usually established at a workshop that involves the key Project Team. The whole team collectively works together to identify, avoid, mitigate and/or minimize all foreseeable risk. This Risk Register is monitored and reported on throughout the whole process and therefore stays as a 'live' document.

Collaborative working enables a much better chance to decide which parties are best able to manage the project risks and decide appropriate risk/allocation/risk sharing.

## Development of long-term relationships

Adopting a practice of working towards long-term relationships helps build trust and collaborative practice. To maintain this requires open, honest and fair practice which encourages respect and the willingness to listen to each other. It has been demonstrated that it has the advantage of reducing costs, enhancing quality, reducing risk and providing opportunities to innovate

Long term relationships also MUST have good performance measures as this is the tool which delivers probity. . A team which is reducing costs and increasingly quality year on year can demonstrate delivery of best value for example.

Part of this practice is also recognizing the importance of introducing new members to the team to stimulate and challenge thinking, yet without impacting on the overall stability of the team. The Hertfordshire County Council case study is a good example of this.

There is also an art in establishing the right number of relationships to maintain to ensure the market is stimulated and there is not a reliance on sole supply or a mutual reliance by the supplier on the client should the programme cease for any reason. A rule of thumb generally used is to provide no more than 25% to 30% of the supplier's annual turnover. This is enough to ensure that the client gains sufficient 'off-line' innovation time from the supplier (added value) yet does not create too strong a dependency on either party.

Hertford chose 5 suppliers of differing sizes to deliver differing size projects. This method also encourages the use of local contractors, employing say 4 or 5 to deliver a programme of small projects rather than perhaps employing a national contractor to deliver the whole programme.

In the future in times of peak oil, local resilience will become increasingly important. Some clients in the UK award additional points to local companies when acquiring framework or panel suppliers.

## Training, workshops and team building events

A strong emphasis on implementing training and workshops to upskill inter-personal skills or technical knowledge has been demonstrated to add significant value to project and help in stimulating innovation within the project and construction industry. As part of this, prestart and induction workshops inform and create greater alignment with those involved in the project. It helps inform people why certain procedures and policies are in place and identifies how individual efforts can contribute to the performance measures and therefore a successful outcome.

This is a very important element of building a best practice project team. Long term relationship teams need to allow time to have regular 'off-line' workshops to review progress, measures and come up with ideas for continuous improvement. It has been demonstrated that \$ previously spent in tendering are now being spent on these innovation workshops in long term relationships. This is an excellent example of a wasteful activity being replaced by a value adding activity at no additional cost to any of the team members.

Celebrating with the team key milestones helps build relationships and acknowledges people's commitment to realizing the goal.

Team building and development recognizes that a team needs to constantly learn how to effectively work together and ensure a unified purpose. To sustain the alignment and develop team building, additional workshops and post-evaluation workshops are recommended. Coaching and mentoring also helps change entrenched defensive behaviours.

In the UK, BAA took this so seriously that they employed a full time team to train their supply chain in various project and business skills in preparation for T5. An investment which returned them cost and time certainty across an enormous 7.5Bn GBP project which is highly unusual.

It is important in the new era of construction that clients begin to think of themselves as investors in their supply chains. Other industries such as the car and oil and gas industries, banking in the UK have adopted this approach with industry changing outcomes. It is an entirely different way of working and thinking.

## Sustainability

There is a rapid upsurge in the understanding of our need to tread more lightly on the planet. The built environment has a huge opportunity to assist with this. The ANZ bank case study shows what can be achieved with a supply chain using relatively simple approaches and a team spirit based on collaboration. A future Pathfinder case study, the Meridian HQ in Wellington demonstrates how a building can be completely developed using sustainable principles. This project was New Zealand's first 5 Star Green building.

The principles of sustainability are so important and so wide reaching throughout the supply chain that the author believes they will form the biggest single driver towards collaboration which the industry has yet seen.

The level of innovation required necessitates a team approach with all skills and expertise on board. It is vital that clients and suppliers being to skill up in this area.

## Sharing of knowledge

Hand-in-hand with a collaborative culture is the willingness to share knowledge with other disciplines within the Project Team and ultimately within the industry so that people can gain from their experiences.

The Pathfinder Projects have all agreed to share their findings in an open manner.

One potential barrier to sharing has been that suppliers are worried about their 'IP'. The UK reform movement has completely broken that barrier as companies began very quickly to recognise that for every idea they shared, a hundred fold were gained. In addition that it was very near impossible for competitors to catch up with you if you shared an innovation that you have fully implemented.

The culture for sharing was one of the biggest differences which was described by visitors on the 2006 study tour with BRANZ.

#### 4.2.3 The Clients' Role

In considering improving 'Procurement' as an element of improving productivity, too often, clients focus purely on the procurement model itself. Evidence has shown however, that the role of the client in the pre-planning stages is as important, if not more so in achieving value outcomes.

##### Toolkits

NZTA have recognised this and produced a 'Procurement Manual'\* . A large part of the document is devoted to assisting the client in developing their strategic plan.

In 2000, following the report, Rethinking Construction, the UK's Local Government Task Force produced a Toolkit for local authorities designed to assist them through the whole procurement process which includes pre planning. It advocates the establishment of a joint pre-planning team which creates a rolling ten year plan and invites the industry to attend briefings to an informal "think-tank" to assist in the planning process. It also advocates 'early engagement' and sets out clear step by step guidelines for achieving this.

##### Planning Horizons

One of the biggest problems the industry faces is the recognised short planning window which is some of the shortest in industry wide – around one year or less. Where clients can give some indication of their requirements over a longer time frame, the supply chain can respond through its own business planning which leads to less staff churn and the ability to invest in staff training over time.

In section, 2.2, we described how clients in the UK have developed a model to create simulations based on good intelligence about forward pipelines of work to assess the potential inflationary effect (and impact on skills shortages) of mega-projects and to phase work to either delay or advance it to smooth workloads and avoid to some extent procuring projects at times of high tender prices.

##### Client Collaboration

In New Zealand, clients often act in isolation; this can lead to the boom bust nature of the industry. There are many benefits to be gained by cooperating. In 2003/4, Vector led a client side partnership with other clients to place services underground. Benefits include bulk buying, efficiencies of operation, sharing knowledge, packaging work to provide better incentive to the supply chain, sharing knowledgeable, 'intelligent' staff where budgets preclude full time employment of such.

##### Best Practice Client

During Procurement, evidence has shown that clients play a vital role in the establishment of value and achievement of productivity, (e.g. Hopkirk Research Institute case study, Appendix B).

In 2006, NZ CCG produced a Client Charter working with a group of clients and industry which describes a 'Best Practice Client'. Key to this and unanimously recognised by all is that the client should employ personnel who understand and have experience in the procurement and construction process, (Intelligent Clients).

##### Whole of Life

Section 2.2 described the importance of consideration towards whole of life, from the perspective of both maintenance and the performance and productivity of the people the facility houses. The 1:5:200 illustrated the relative cost and value of these stages in the product's lifecycle.

##### Supply Chain Needs

It is critical that clients recognise the needs of their supply chain in order to create win-win relationships. In 2002, some 300 Managing Directors of UK supply chain members were surveyed in order to find out the most important aspects of client relationship for them.

The results were interesting in that 'early involvement' was a clear leader. Perhaps not so surprising when considering the business imperative to be able to plan forward workload. The list of key needs was as follows:

- Early Involvement
- Knowledge of Forward Workload
- Feedback
- Post Project Review
- Consistent Relationship
- Selection on 'Best Value'
- Better coordination of trades
- More negotiated work
- Open communication
- Reduced retentions for mature relationships

#### Cost versus Price

Many clients do not understand the relationship between cost and price. During his visit to NZ, Don Ward described this relationship which is summarised in figure 14 below:

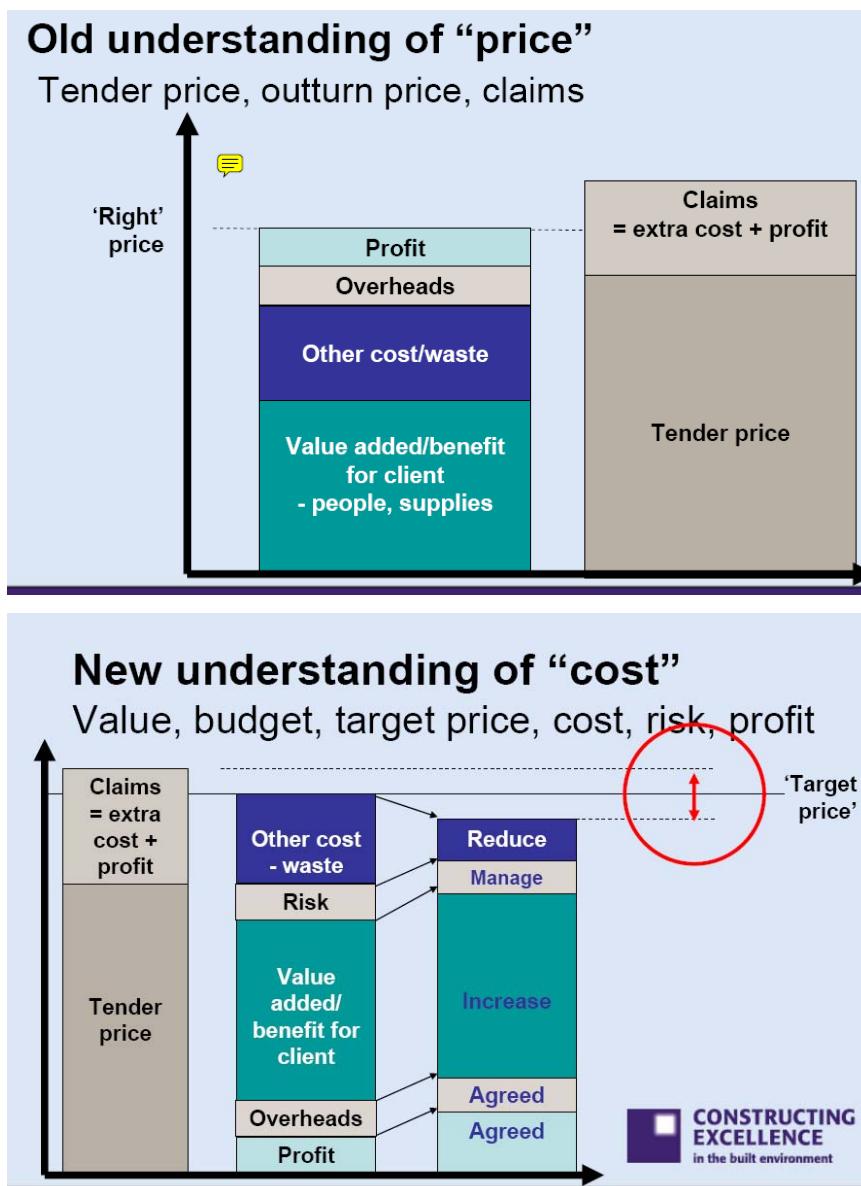


Figure 14: Cost versus Price

#### 4.2.4 Procurement Models and Best Practice Themes

The table below has been used to map the various procurement models available across to the Best Practice themes.

Delivery Model	Traditional Lowest price conforming	Traditional Design/Build	Traditional Negotiated Tender *	Management Contracting	Traditional Informal Collaboration	Framework Agreement	Collaborative Working Arrangement	Alliance
Best Practice Theme								
Health & Safety	2	3	4	2	5	5	5	5
Selection of Team	1	2	4	2	3	5	5	5
Collaborative Approach	1	1	4	2	4	5	5	5
Alignment of Project Goals	1	1	3	3	4	5	5	5
Forward Planning	1	4	3	2	4	5	5	5
Intelligent Clients	1	1	3	3	4	5	5	5
Early Cont. Involvement	1	3	2	4	3	5	5	5
Cost Management	1	4	3	4	4	5	5	5
Time Management	3	4	3	4	4	5	5	5
Quality Management	1	2	4	4	4	5	5	5
Shared Risk Management	1	1	2	2	3	5	5	5
Development of long-term relationships	1	2	5	3	3	5	5	5
Training, workshops & Team bldg	1	1	2	3	4	5	5	5
Waste Management	1	1	3	3	4	5	5	5
Sharing of Knowledge	1	1	4	3	4	5	5	5

**Table 2 - Does the procurement route support, encourage and sustain best practice?**

Scale: 1 = strongly disagree, 2 = Disagree agree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

\*negotiated tender: where typically three preferred contractors are requested to price. The contractors generally have established relationships with the Tenderer, and whose experience, quality of work and willingness to work together is known

### 4.3 Model for mapping current practice

The following model has been developed for use at the Working Group meeting 1. It is designed to allow members to map current practice for discussion:

Move towards integration and collaboration of the supply team

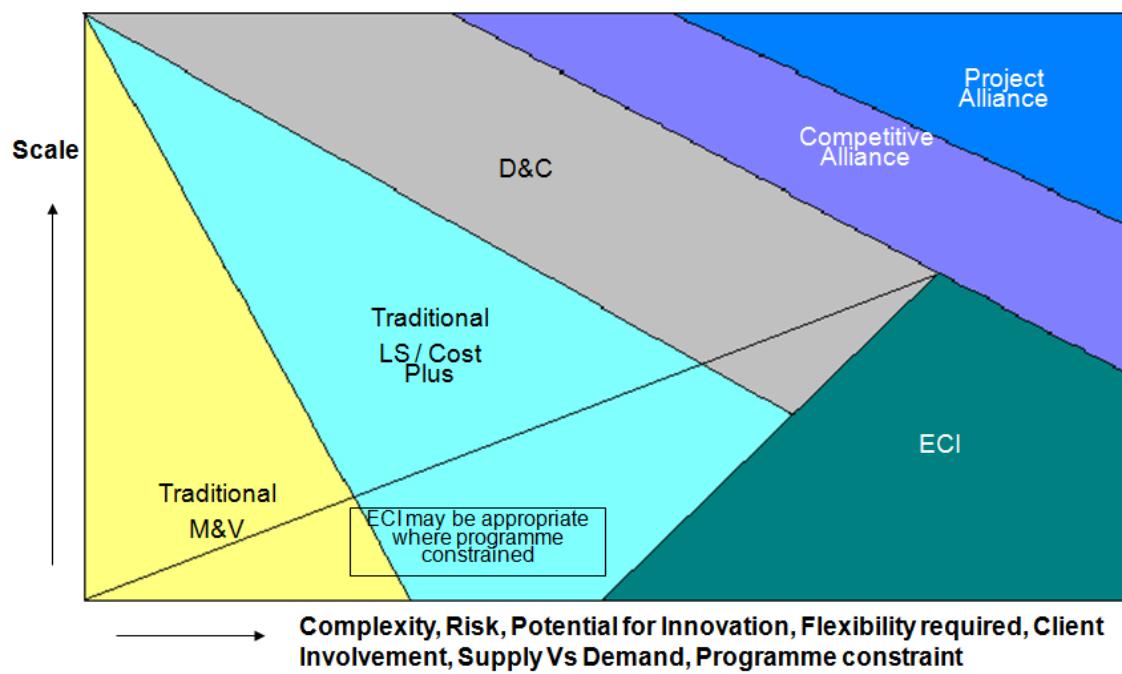
Supplier Selection Method	Lowest Price Conforming	Price Quality	Target Price	Quality Based
Delivery Model				
Traditional (Linear, Segmented)				
Fast Track (Accelerated)				
Two Stage				
Negotiated Tender (Preferred List)				
Design & Build				
Management Contracting/Construction Management				
Frameworks (Supplier Panels)				
Collaborative Working Arrangement (Integrated Supply Teams, Partnerships)				
Alliance				



Move towards Quality selection

Table 3. Current Practice 'Map'

A further model developed by NZTA (ex Transit) for use in their decision making process is described in figure 15 below



Delivery Model Selection Matrix Manukau Harbour Crossing										
	Rating	Weighting	Comment	Model Rating (out of 5)						
				Traditional M&V	Traditional LS	D&C	ECI (L-S)	ECI (Prog)	Competitive Alliance	Project Alliance
1 Scale	Ex \$100M	5%	Expected Project Estimate over \$250M	1	2	1	5	1	5	5
2 Complexity / Scope for innovation	Moderate	5%	Complex interchange and duplication	0.05	0.1	0.05	0.25	0.05	0.05	0.25
3 Programme constraint	Constrained	20%	Tight delivery timeframe - completion required by mid 2011	3	2.5	3	3	3.5	3	3
4 Market conditions	Moderate	15%	Current tight market conditions. Likely to ease over the construction period.	0.15	0.125	0.15	0.15	0.175	0.15	0.15
5 Risk	High	10%	Some significant technical issues.	2	1	2	3	4	5	4
6 Stakeholders	Many	5%	Numerous stakeholder and consenting issues	0.4	0.2	0.4	0.6	0.8	1	0.8
7 Client involvement, control, capability and availability	Moderate	5%	Some resource issues, but desire reasonable level of client involvement and skill development	3	3	4	3	2.5	3	3
8 Focus on non-cost success	High	10%	Highly visible infrastructure. Marine environment. Diverse group of end users.	0.45	0.45	0.6	0.45	0.45	0.45	0.45
9 Tangible demonstration of value for money	High	15%	Significant political pressures on the demonstration of value for money.	1	3	3	4	4	5	5
10 Flexibility to deal with change	High	10%	Incomplete statutory processes likely to necessitate scheme redeveloping	0.1	0.1	0.1	0.1	0.2	0.25	0.25
<b>OVERALL RATING (%)</b>				3	3	3	3	2.5	3	3
<b>OVERALL RANK</b>				0.3	1.1	0.5	0.1	0.5	0.1	0.5
				2.50	2.40	2.75	3.25	3.33	3.60	4.05
				7	8	6	5	3	1	2

Figure 15. NZTA Procurement Model

## 5 Meeting Session 3

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The purpose of Session 3 is the following:

**Session Three: How to get there (potential solutions)**

*Purpose:* To consider potential solutions to the problem identified in Session Two, in particular to:

- identify what the barriers to achieving better procurement practices are; and
- identify the range of options of how these barriers can be overcome.

## 5.1 Barriers to improved procurement practices

There are a range of barriers to changing procurement practice. There are none that some client somewhere in the world has not overcome. This section describes some of the more common barriers in no particular order. This part of the document is designed to feed into the meeting session 3 and it will be for the meeting to discuss and map the barriers that they believe are most relevant to the audience.

- Size and Scale of New Zealand compared to say the UK

Best practice examples from the UK or Australia are commonly dismissed due to the notion that the scale in New Zealand will not accommodate the level of investment required. Whilst it is true that the scale is different, it is not true that the ideas cannot be translated.

For example, take an investment such as BIM. Local authorities could group together to make this investment creating an economy of scale. The Auckland Regional Contracts group have recently done something similar in creating a Benchmarking club supported by an online tool adopted from the UK Highways agency. The costs are distributed between 8 organisations making them nominal.

Further examples might involve client collaboration in purchasing commodity items, logistics etc. This has become common practice with local clients in a geographical area via Best Practice clubs. There are trading rules around such agreements which need to be in place, but they do not preclude from achieving them.

It is worth noting that Scotland, Wales and Northern Ireland as devolved nations have all separately concluded that this is the right approach for their scale which is much more akin to that to NZ

- Alliancing and other collaborative working arrangements are only suitable for large projects

This is not true. This document has demonstrated that the principles of these arrangements can be adopted on any project of any size and be scaled accordingly. Both the ANZ and Hopkirk case studies demonstrate this. This is borne out by experience in the UK where project values of well under £250,000 have succeeded this way.

Furthermore, the idea of frameworks or supplier panels is little used in New Zealand. For clients with a portfolio of smaller projects, this method gives a great deal of scope for efficiency savings, innovation and continuous improvement. The Hertford case study demonstrates this and QLDC are currently in the process of working with their frameworks which were established in 2008.

- We cannot enter long term arrangements as we may damage the competitiveness of the market

Too much emphasis is placed upon trying to preserve and ‘manage’ a competitive market in New Zealand. The efforts result in a compromise on quality of service. If the ‘rules of thumb’ set out in section 3.1.7 are followed, the natural tendency is for the market to up skill in order to win these valuable contracts.

Frameworks enable packaging of suitable ‘lots’ of work to suit a range of smaller local and larger organisations. Maintaining an element of work which is put out to the market for benchmarking against the framework projects and contracting to a number of suppliers in the framework along with suitable exit clauses for companies who continually fail to meet targets maintains the competitive tension.

In practice, what begins to happen is that the framework companies up skill each other, learn and grow, whilst the ‘rule of thumb’ of no more than 20% to 25% of turnover allocated in any one year means that the supplier and the client do not become too heavily reliant on each other.

There is also confusion caused by different understandings of the role of the sub contractor in the New Zealand market and a perception that unless they are employed directly by the client they are being disadvantaged in some way.

This is exacerbated in New Zealand because of the regional nature of client and market management – even large national contractors are - in practice - a network of regional divisions.

Some examples in the UK show that framework contractors have joint ventured for large pieces of work with their framework client and with other new clients. Other examples show them swapping staff in times of need.

New Zealand is too full of too small companies, frameworks are one way that best practice infrastructure investment can be made on an appropriate scale for the benefit of all.

## 6 References

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- <sup>1</sup> New Zealand Council for Infrastructure. NZCID Comparing Infrastructure in New Zealand and Australia: Key Lessons For New Zealand (2005)  
[http://www.nzcid.org.nz/downloads/NZCID%20&%20GHD%20\(2005\)%20Comparing%20Infrastructure%20in%20Australian%20&%20NZ.pdf](http://www.nzcid.org.nz/downloads/NZCID%20&%20GHD%20(2005)%20Comparing%20Infrastructure%20in%20Australian%20&%20NZ.pdf)
- <sup>2</sup> Organisation for Economic Co-operation and Development (OECD):  
<http://stats.oecd.org/wbos/viewhtml.aspx?queryname=475&querytype=view&lang=en>
- <sup>3</sup> Developing an improved approach to the procurement of construction projects. Building and Construction Sector Productivity Task Force, Scoping Paper, 11 November 2008, Martin Jenkins.
- <sup>4</sup> A Study into the Cyclical Performance of the New Zealand Construction Industry, Neill Allan, BRANZ, November 2008.
- <sup>5</sup> DBH WG Scoping paper Nov 2008.
- <sup>6</sup> Department of Trade and Industry. Rethinking Construction. The Report of the Construction Task Force to the Deputy Prime Minister, John Prescott, on the Scope for Improving the Quality and Efficiency of UK Construction. 1998.
- <sup>7</sup> NZTA Interim Procurement Manual.

### Other sources

- Constructing Excellence UK. Local Government Frame-working Toolkit developed to help Local Government procure on Best Value principles:  
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<http://www.strategicforum.org.uk/sfctoolkit2/home/home.html>
- CRC Construction Innovation: Construction 2020 A Vision for Australia's Property and Construction Industry: [http://www.construction-innovation.info/images/pdfs/2006\\_update - final version.pdf](http://www.construction-innovation.info/images/pdfs/2006_update - final version.pdf)
- NZ Construction Industry Council (CIC) Principles of best Practice Construction Procurement in New Zealand Jan 2006:  
[http://www.nzcic.co.nz/Best\\_Practice\\_Guideline\\_2006.pdf](http://www.nzcic.co.nz/Best_Practice_Guideline_2006.pdf)
- CCG Clients' Charter
- Centre for Advanced Engineering (CAE): The New Zealand Construction Industry National Key Performance Indicators – Handbook and Industry Measures 2006
- Constructing Excellence; [www.constructingexcellence.org.uk/](http://www.constructingexcellence.org.uk/)
- CRC Construction Innovation: Industry Briefing: <http://www.construction-innovation.info/images/pdfs/2020/C2020-Vision-The-future-of-the-Australian-Construction-Industry-Peter-Brandon-Nov03.pdf>

## Appendix A - Agenda

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**Tuesday 27 January 2009**

**Department of Building and Housing  
Level 6, 86 Customhouse Quay  
PO Box 10-729, Wellington  
Phone: +64 4 494 0260**

9:45 Tea and coffee for a 10:00am start

Chair – Tyson Schmidt (DBH)

**Session One: Setting the scene and context**

10:00 – 10:15 Background to Working Group, outline of session, what we intend to achieve

10:15 – 10:30 Procurement taxonomies and why models get used for particular situations (presentation from Amanda Warren)

10:30 – 11:30 Outline of approaches taken in New Zealand (short presentations on procurement approaches from the Government agencies present, some examples from private clients)

Discussion on range of approaches, differences and issues

11:30 – 12:00 Session wrap up discussion: what issues/themes are starting to emerge?

**Lunch 12:00 – 12:30**

**Session Two: Identifying the potential and the problem**

12:30 – 12:45 What benefits can arise from improvements to procurement processes? (using NZ examples and overseas experience)

12:45 – 1:15 Best practice procurement examples (presentation by Amanda Warren followed by group discussion)

1:15 – 2:30 Mapping current practice against best practice (facilitated by Amanda Warren)

**Session Three: Barriers to improvement and potential solutions**

2:30 – 3:15 Barriers to achieving better procurement (group discussion facilitated by Tyson Schmidt) – e.g. is the Govt procuring as best as it could across the board? If not, why not?

**Afternoon Tea 3:00 – 3:15**

3:15 – 3:45 **Session Three (cont'd):** Potential options for overcoming barriers (group discussion facilitated by Tyson Schmidt) – e.g. what improvements could be considered? What could industry do to better support Govt procurement?

**Next Steps:**

3:45 – 4:00 Outline of work till end of March

## Appendix B – Case Studies

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### Case Studies

- **The Hopkirk Institute** – Fast track - Lowest price (P&G & margin) / informal collaboration
- **ANZ Green Branch** – Traditional lowest price/informal collaboration
- **Alpurt B2** - Formal Alliance – Quality based
- **Hertfordshire County Council** – Frameworks (Supplier Panels) – Price Quality
- **The Plaza, Palmerston North** -

## Appendix C - The UK Reform Movement

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## Appendix D – NZ Construction Industry Measures

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## Appendix E – Australia's 2020 Vision

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## Appendix F – Sample Benchmark Index Report (Grail Limited)

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## Appendix G – LGTF Toolkit

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To be handed out at the meeting