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Procurement and Contracts

Welcome to our Third Edition – and to the continuing review and discussion of different approaches to procurement and contracts that is currently spreading through New Zealand. It reached the Sunday Star Times of 18 February, with a criticism by Wayne Brown of some contracts let by Transit NZ. Richard Quinn's article in this issue, written before Wayne's was published, explains part of the Transit approach, and invites further comment.

We also expected David Jewell's article on the New Engineering Contract to provoke debate, and it did: we now publish Martin Barnes' paternal (vis-à-vis the NEC) response and Chris Olsen's views "from the trenches" of Roading New Zealand.

What we are witnessing in the area of procurement and contracting is a further shift from the rigid restraint of a tendering process based on the lowest price put forward by a "qualified" contractor (the inverted commas account for owners who neglect taking account of qualifications and financial strength, tempted by a very attractive price). This system largely relies on a design and specification by a consultant

or owner's staff, which is used as the basis for tendering and contracting out the work. The process may neglect aspects such as constructability and new or different technologies, and sets owner and contractor in separate camps.

The shift is towards a more collaborative work environment fostered by the NEC, a teamwork approach aptly described by Stewart Rix on page 7, and to competitive procurement that brings the contractors into the process of designing complex projects which may call for more than one option, bringing their experience, techniques, availability of specialized equipment and personnel and so on, from inception. If the procurement process includes competition between teams of contractors and consultants, their combined expertise should result in improved results for the owner.

Likewise, collaboration during construction will help to avoid the "stones in the road" which can otherwise result in confrontation or time and cost blow-outs. It has, and should continue to lead, to better value for money.

But let's not kid ourselves: the collaborative



Ernesto Henriod, Editor

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approach makes considerable demands on the owners and their consultants: it requires their knowledgeable and active participation in the process of design, fair and frank discussion with the competing teams of contractors and designers during the tendering process, and close participation with the selected team during

construction. Owners must be fully aware of the work load and responsibilities that collaboration implies.

Read on, McDuff...and do send us your comments!

Ernesto Henriod, Editor

What Can the NEC General Conditions of Contract Offer NZ?

by Chris Olsen

There is an old saying that the best contract for both the client and the contractor is that done on a handshake. Handshake contracts do not rely on referring back to contract documents to work out who's right and who's wrong. They focus on achieving a good outcome for the project and rely on the parties working together to make things happen through trust, good communication and dialogue. Both parties can be attracted to handshake contracts because of their simplicity.

There can, however, be risk with handshake contracts. If both parties are not quite on the same wavelength, the wheels can fall off these types of contracts – and the contractual relationship may go sour.

This is where the NEC (New Engineering form of Contract) can come into play. The NEC provides a framework to ensure both parties are on the same wavelength and have the same approach to the contract.

In essence, the NEC General Conditions of Contract move away from a cookbook approach to one that focuses on simplicity and encourages communication and dialogue.

The NEC Conditions of Contract were developed in the UK starting some twenty years ago and now around 85% of construction contracts in the UK use them.

We are fortunate in New Zealand not to have the same litigious contract environment that existed in the UK prior to the introduction of the NEC Conditions of Contract. I've heard some say that because of that this is no place for the NEC in New Zealand.

I don't entirely agree with that view because there are still benefits to New Zealand from having a more simple and empowering form of General Conditions of Contract that move away from a cookbook approach and encourages communication and dialogue. I believe that while it's true to say that NZS 3910 can be bent (amended) to fit this type of approach it is nowhere near as efficient as the NEC.

Others say that because everyone knows NZS

3910 we shouldn't change things and move to the NEC. I don't know if I agree with this position as well. Let me explain why.

When I studied contract law in the late 1970s, NZS 623 1964 was the New Zealand document for General Conditions of Contract. NZS 623 was subsequently replaced with NZS 3910. NZS 623 was replaced with NZS 3910 because it was radically changed – not simply amended. My understanding is that it made the rights of the parties to the contract more even. I'm sure that previously NZS 623 would have been amended (bent) through special conditions of contract to provide for the newer NZS 3910 approach.

However, this didn't stop those at the time formalising the new approach through the introduction of NZS 3910. It also didn't stop the industry developing NZS 3915 for contracts without an Engineer to the Contract.

I see the adoption of the NEC approach as possibly the next step in the continuous improvement process. Why limit opportunity? Let's review the NEC taking into account New Zealand legislation, convert it into a New Zealand Standard, introduce it to New Zealand and let it stand or fall on its merits. Who knows, people may discover that the world is round after all and not flat.



Chris Olsen is the Chief Executive of Roothing New Zealand. He has had 30 years experience working in the roading and civil sectors. During this time he has held senior management positions in all parts of the sector, including contractors, Transit New Zealand, Transfund New Zealand and Local Authorities. From 1995 to 1998 he was responsible for Transit/Transfund's Competitive Price Procedures (CPP).

He holds a BE Honors degree and is a Fellow of the Institute of Professional Engineers.

I beg to differ...

Martin Barnes comments on the NEC



David Jewell's article in CNZ2 is most interesting and well argued. But, as principal inventor and designer of the New Engineering Contract (NEC), may I indulge myself by taking him up on a few points?

The NEC did not arise from the Latham and Egan reports in the UK. It was published and already in use before the work of producing either of those reports was begun. It arose mainly from my own frustration with using traditional standard contracts as client's project manager.

None of the old contracts took any notice of modern project management approaches and allowed them to be applied once the main contractor had been appointed. Neither were they based on any understanding of how contractors or their subcontractors needed to operate commercially.

David may have missed a point about risk allocation in the NEC. For example, it takes most of the risk of making or losing money on varied work or unexpected problems which are at the client's risk off the contractor. I don't know of any other standard contract which does that. Maybe NZS 3910 does, I am not familiar with it. This is a very important feature of NEC. It is this which allows the client's project manager to decide how to deal with the unexpected as the contractor, and his subcontractors, are indifferent to what he decides. They are going to get paid anyway. This, with a vengeance, is an example of the 'alignment of objectives, including the critical commercial ones' which David advocates. Importantly, the NEC is the only contract I know which is designed to be used at subcontract level so that there are no inconsistencies as to objectives, risk allocation or management process as you go down the supply chain.

Disclaimer

While every care is taken to present articles discussing current trends and techniques in contracting and construction, CAENZ emphasises that the information contained in this Newsletter is not a substitute for experience and expertise, which must be sought by the readers where deemed necessary.

Note also that some articles may propose matters for discussion based on the authors' opinions, drawing on their own experience or theories and, as such, may be subject to further testing, and should therefore not be taken as proven or approved practice.

David Jewell says that NEC must not be seen as a 'replacement for addressing poor relationships' and he says that his experience is that real partnerships are best achieved through 'pure alliances'. The experience of using NEC for more than ten years on hundreds of projects is quite the opposite. NEC redefines the commercial relationships in a realistic and purposeful way. The parties sign up to a reformed and realistic set of commercial relationships which reward and, therefore, stimulate good management by both client and contractor. 'Pure alliances' are an act of faith which will often fall apart totally when the difficulties emerge. Only then is the still traditional contract taken out of the drawer and the lawyers brought in to argue about how to apply them. NEC is a much better way.

Using NEC is now recommended by clients to their contractors and by contractors to their clients. It really does, when properly used, benefit both buyer and seller. The few projects on which the NEC contract has not worked well were those on which one party or the other 'left it in the drawer' and did not carry out the role which the new contract gives them. NEC is not a tool for allocating blame and claiming extra money after the event, it's a tool for managing the work to a completion which is success for all contributors. Predictably, you don't get the benefit if you don't do what it says. Only leave it in the drawer if you know it by heart.

Editor's Note

Dr Barnes has been invited as a principal keynote speaker and panelist for the Industry Summit of 30-31 May 2007, "Procurement 2007: Getting the Best Value in a Hot Market". See the back page of this edition, and contact Scott Caldwell at s.caldwell@cae.canterbury.ac.nz for further details. See also page 6 and the Transit NZ invitation to examine and comment on its long-term Procurement Plan.

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Comments and questions are welcomed!
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Alternative Approaches to Procurement Bring Success

by Richard Quinn

Transit New Zealand can now claim significant success with the delivery of projects through “alternative” delivery models. The industry has grappled well with the challenges laid down by Transit to date and is delivering the goods on our Alliancing and Design and Construct projects.

These new approaches have brought out more cooperative ways of working. Contractors are now major ‘clients’ in their own right, engaging their own teams of design personnel as well as greater number of subcontractors than ever before. Transit, as the client, is now part of delivery team, and its staff members are sitting alongside their peers from consulting and contracting backgrounds, while contractors are now collaborating with their traditional rivals to jointly deliver projects. From Transit’s point of view this seems to be fostering a greater level of understanding between client, consultant and contractor and mutual respect for the important role each party plays. Relationships established through greater collaboration have fostered more cooperative behaviour, which is leading to the achievement of outstanding results.

Recent specific examples where outstanding results have been achieved include:

- On the Central Motorway Junction project geometry and lane configuration changes at the northern extension have improved the functionality of the Motorway and prepared the way for the Victoria Park tunnel, unlocking some project benefits earlier.
- On the Manukau Extension project (connecting State Highway 20 to State Highway 1) the reversal of the grade separation of the State Highway extension with a local road has allowed the removal of a significant embankment over soft material



and improved the overall vertical alignment of the State Highway.

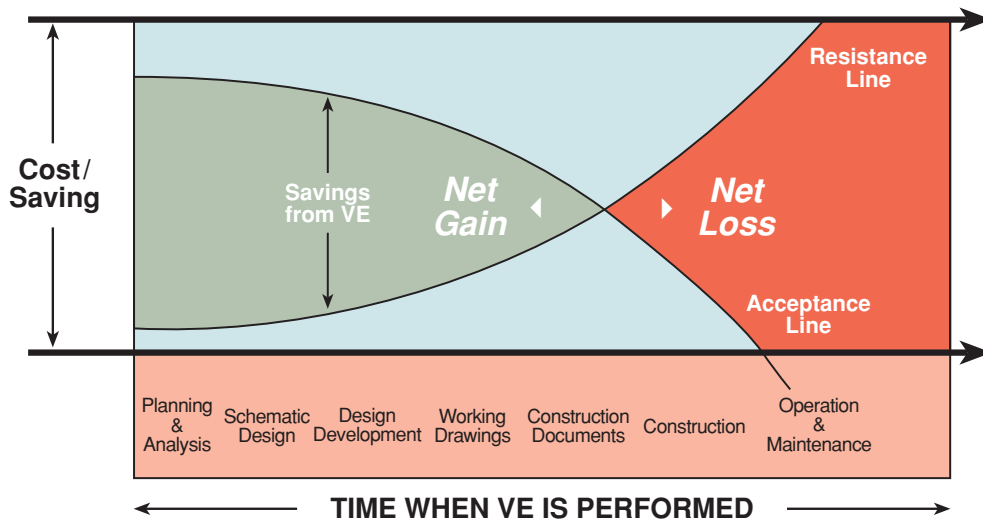
- The numerous progressive design iterations, reviewing and improving the tunnel alignment and geometry on the ALPURT B2 project resulted in significant improvements to the overall level of service that will be provided by the completed structure.

While many of these successes may not be widely known and celebrated outside of Transit, they are certainly acknowledged internally and play a key part in the approach to the procurement of future works.

In each of the examples above the innovation noted has been developed by the Construction industry, in partnership with their skilled designers. Acknowledging the expertise and ability of the Construction industry to drive innovation and add value to the development of projects, the challenge for Transit is how do we encourage and incentivise such inputs. The way in which we handle the procurement of suppliers plays a key part in facilitating the resulting increases in efficiency and innovation. However, the drivers produced through the procurement phase must be aligned with the objectives of the Client for the project, and the Client must be aware that true innovation nearly always comes with some increased risk.

The Design and Construct delivery model is a good example of a contract model that motivates the search for increased efficiency. While significant time and energy is put into the development of designs at tender phase under this model, usually by three competing consortia, the standard of design presented to the Client is more thoroughly tested through this competition than it is under any other approach. The end result is invariably a more effective and efficient solution. This aligns well with Transit’s objective, under the Land Transport Management Act, to ensure best value for money spent.

But this is not the only benefit of running such a process. The increased knowledge of the project’s design permits a better understanding of the project’s inherent complexities and risks earlier in the process, thus enabling more effective strategies to be developed in mitigating risk. It is also noticeable that more ownership and responsibility is taken on issues that occur during construction, with issues often resolved internally by the consortium before the client is aware a problem exists. Another noticeable and equally important feature for any Client is the general increase in certainty around the time to completion and the outturn cost.



Source: Scott Cullen, Value Engineering,
www.wbdg.org/project/value_engineering.php, accessed 28/08/2006

The diagram above shows conceptually the improvement in value that can be obtained, through value engineering (VE), throughout the life of a project. It suggests that around the point in the project's lifecycle where construction documents have been prepared, the cost of undertaking VE exercises will generally outweigh the resultant value added to the project. While the general concept that VE returns will diminish as a project progresses holds true, in Transit's experience the point at which investment in VE exceeds return is further to the right on the project timeline, into the construction phase. This is particularly noticeable with Alliance contracts. With the integrated team that operate under an Alliance structure, the ability to react quickly to changes is preserved, and good drivers exist to hunt out all opportunities for innovation through the shared allocation of project risk, even as construction plant is well into it's work.

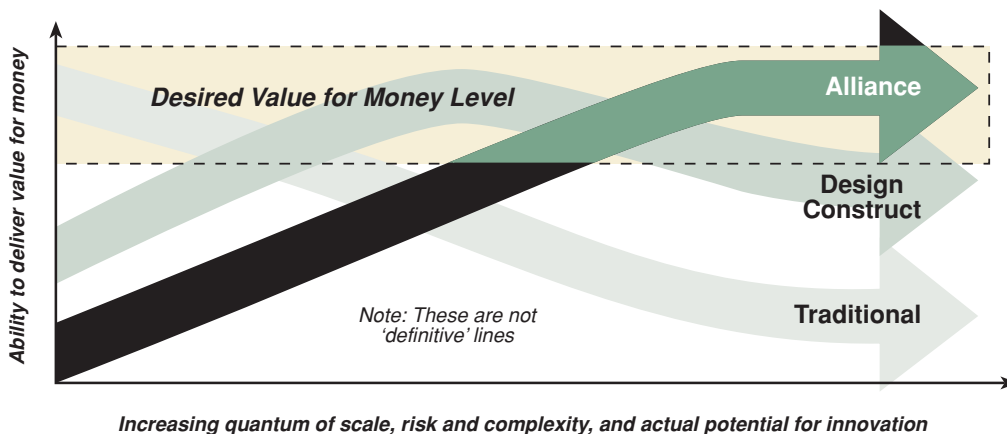
However, traditional approaches have their place, they still comprise the majority of Transit's contracts, and they are likely to do so for some time. The challenge for Transit is in judging which of the variety delivery models to apply. While other roading agencies have clear preferences between delivery models, Transit's approach in selecting a delivery model remains very much one of "horses for courses". The specific objectives of each project are matched to

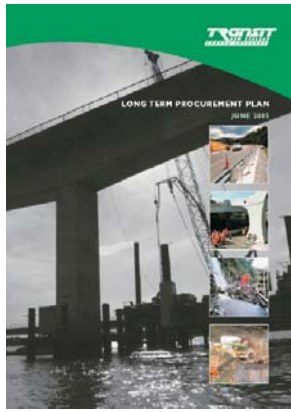
the inherent characteristics of the respective delivery models, and an assessment made as to which model is most likely to facilitate the achievement of best value for money. This is by no means an exact science. Since no two projects are identical, there is a limited basis upon which to benchmark performance.

Transit's Long Term Procurement Plan provides guidance on how to differentiate between the delivery models and includes the following conceptual diagram for assisting in this regard.

So what does the future hold for Transit New Zealand in its approach to procurement? With the degree of comfort and experience Transit now has in all of the current delivery models, more of the same can be expected in the future. However in light of the successes noted above, contract models that encourage a greater input into, or scrutiny of, the design process by the constructors need to be seriously considered. To that end Transit has trialled an Early Contractor Involvement contract model (ECI), has commenced the trial of a dual Target Outturn Cost Alliance (an alternative approach to the procurement of an Alliance contract), and is giving some serious thought to further research of the Public Private Partnership model.

With Transit forecasting the delivery of many more significant infrastructure projects over the next 5





years, and with the investigation and development of new delivery models as mentioned above, an update of the current Long Term Procurement Plan is planned for 2007. This is a key document for Transit in signalling to the industry how Transit intends to

procure to match our State Highway Forecast, and to describe the rationale behind each of the delivery models.

Transit's Long Term Procurement Plan (in it's

current form) can be downloaded from Transit's website, www.transit.govt.nz. We invite comments from the industry and road users: please email Richard.quinn@transit.govt.nz.



Richard Quinn, BE Civil (Hons), is Transit New Zealand's Procurement Team Leader. He is in his fifth year with Transit, focusing on the procurement of Transit's Capital Improvement projects.

Previously he has worked for consulting and contracting organisations in New Zealand and abroad, including England, Denmark and Jamaica, with a focus on the commercial management of construction contracts.

Sustainable Construction: New Buildings using Energy-friendly Materials

Andy Buchanan

Professor of Timber Design, University of Canterbury, New Zealand

Editor's note: Andy will present a paper on "Energy and CO₂ Advantages of Wood for Sustainable Buildings" at the next IPENZ National Convention, 21-23 March 2007. He has agreed to our publishing an abstract of his very important contribution to the 'vision of the future' theme chosen by IPENZ for this year's Convention.

Abstract

This paper will demonstrate the advantages of using wood materials for the design of sustainable buildings in New Zealand, providing national benefits of reducing fossil fuel energy consumption and CO₂ emissions. The relationship between fossil fuel energy consumption and CO₂ emissions will be described, along with the importance of forestry in helping countries like New Zealand to meet their Kyoto Protocol obligations.

Wood-based building materials have much less embodied energy than other materials, but the paper will show that the biggest advantage of using wood is the opportunity for obtaining non-fossil fuel energy from wood waste, a significantly greater benefit than both the stored carbon and the low embodied energy in wood



materials, combined. The wood waste can come from all stages of harvesting and processing of wood, and construction and demolition of timber buildings.

The paper will describe current assessment tools for sustainable buildings. Compared with other materials, wood-based building materials score very highly for most sustainability criteria, but are penalised in the proposed New Zealand sustainability assessment scheme which places too little emphasis on energy consumption and CO₂ emissions in the life cycle assessment of building materials.

The paper will also describe opportunities for much greater use of timber and engineered wood products in large buildings, using innovative

technologies for creating high-quality buildings with large open spaces, excellent living and working environments, and resistance to hazards such as earthquakes, fires and extreme weather events.

For those who will not attend the Convention, the next issue of Constructing NZ will show the web page details for the full text and extensive bibliography of Andy Buchanan's Paper.

Developing Trends in Procurement Policy and Project Delivery

by Stewart Rix

At the outset let me nail my colours to the mast and declare a passion for the further development and acceptance of Collaborative Working as a procurement and project delivery methodology. As has been acknowledged in a number of recent independent reports, there are real opportunities for improving productivity, efficiency and thereby improved value for money for clients- and indeed all stakeholders in the construction industry form the adoption of such processes.

It will come as no surprise therefore that I warmly welcomed the articles penned by Ernesto Henriod, Martin Barnes and David Jewell which appeared in the October issue of *Constructing NZ*. I shall seek to build on those themes in this paper.

People Build Projects

There have been many world class examples of successful project planning and delivery in New Zealand, and I dare say that a very fair share of those successes occurred on projects which employed traditional tendering procurement and “master-servant” forms of contract, as well as those employing more collaborative processes and documentation. This supports the thesis offered by David Jewell that a change of contract documentation of itself, does not improve the chances of a successful project outcome. On the contrary, it is my own experience, as I’m sure it is for most of us, that people build projects, and successful teams build them more productively and efficiently than those that are less well integrated. Even when the most draconian of

contracts are drafted, success can be achieved!

That is not to say that the drafting of documentation to allocate risks from one party to another does not invite an equal and opposite reaction, and I suspect we have all experienced, at one time or another, contracts which sour because “points scoring” becomes as important as constructing the project!

The advent of the NEC form of contract has provided a catalyst for many client organisations, and their professional advisers, in the UK and latterly here in NZ to embrace ‘partnering’ techniques. While I believe it is helpful on occasions to wipe the slate clean and invest in a new form of contract documentation, an aim of which is to put an end to division and confrontation, I believe that simply changing contract documentation is too a blunt instrument for the delicate surgery necessary to modernize our industry. I feel opportunities have been missed in the presentation of new contract forms to take a much more radical, inclusive and holistic approach altogether. Fundamentally it is attitudes and behaviours which need to change! It was Lord Denning, then Master of the Rolls, who suggested that practitioners in the construction industry deserved to be in dispute-such was its collective investment in creating new “rules of engagement”. While I once enjoyed the “jousting” with contract documentation that all quantity surveyors revel in at some point in their careers, my personal view today is that the pendulum is swinging back to a much more pragmatic and common-sensical approach which is to build the very best capability for each project, identify the values, goals and objectives (for all stakeholders) and incentivise the team to deliver or exceed the client’s requirements. My experience is that creating that unity of purpose is pivotal to a successful outcome.

Collaborative Culture

What I suggest is crucial to the sustainable improvement in the standard of project delivery in our industry therefore is the development of a culture and operating environment which encourages the following behaviours:

- Open, honest, and frank disclosure of risks and opportunities.
- Improved communications. Generous listening and positive feedback being at the fore
- Building of respect and trust across the supply chain
- Transparency and “open-book” approach to costings
- All parties seeking a unity of purpose, so that



all are pulling on one end of the rope!

As David suggested in his article, relationships in the New Zealand construction industry are relatively good. The industry size demands that they have to be! Nonetheless there is much room for improvement in a number of areas, and as a prompt for further debate I suggest below some initiatives which could be taken to create a more holistic and sustainable improvement. I use the term “holistic” because I believe there are many more dimensions or facets to the delivery of a successful project in addition to the traditional project management triangle of Time, Performance and Cost.

That is not to challenge the conventions which Martin Barnes first established in the 1970s – simply to make a case for suggesting that in an age of being more inclusive, we should also highlight the accomplishment of other goals and objectives such as:

- Improvements in Health and Safety
- Having Fun! Yes, success is fun!
- Building and sustaining trusting relationships across all stakeholder groups
- Improving profit margins—which are woeful at the top-tier level—by cutting waste, becoming more efficient, and productive and sharing the benefits with clients
- Pooling all available project resources to improve risks management
- Contributing to the well-being of the wider industry
- Developing simple but effective toolkits to measure our progress towards these goals
- Benchmarking performance and striving for continuous improvement

Such a laundry list of suggestions might seem too ambitious, but from my own personal perspective, I believe many of these dimensions have been progressively improved both here and overseas in recent years, but progress may not be universally consistent.

Alternative Procurement Strategies

What is perhaps most heartening and encouraging is that a number of procurement agencies and professional bodies around the world are now establishing policies and guidelines to ensure that many of these facets become “business as usual” as distinct from “extraordinary”.

I believe we can learn much from studying the progress being made in other global markets to improve industry efficiency, as we shall surely follow fashion—unless fashion changes us first?

One such procurement agency is the Office of Government Commerce (OGC) which has provided leadership, policy making and “best practice” guidelines for improved procurement in the UK. While central government capital expenditure in NZ is relatively modest—with less

central control than might have been the case historically, the concept of establishing clear “best practice” remains very relevant to the NZ market, and the work being done within CIC and other bodies is encouraging. That said, I believe that to accelerate the progress being made in procurement policy, there are some initiatives which must be taken quickly and assuredly. Some of them being:

- 1 Encourage CLIENT LEADERSHIP in the continuous improvement/ change process. This will require a small number to become “champions for change” and lead by example.
- 2 Raise awareness of the BENEFITS OF ALTERNATIVE PROCUREMENT routes
- 3 Encourage SUPPLY CHAIN INTEGRATION by developing procedures which reward consortia for building seamless CAPABILITY (Capacity and Ability)
- 4 Encourage selection of tender proponents on NON-FINANCIAL as well as financial measures.
- 5 Encourage more INVESTMENT IN PEOPLE and their training
- 6 Develop ENABLING documentation in preference to PRESCRIPTIONS
- 7 SELECT AND BUILD THE TEAM as quickly as possible to maximize the benefits of teamwork.
- 8 Encourage further INVESTMENT and TRAINING in the use of new management tools to calibrate and measure productivity
- 9 Encourage the BUILDING OF RESPECT AND TRUST by delivering on promises
- 10 Move away from RISK ALLOCATION in favour of joint risks management whenever possible, and where the circumstances allow.

The idea of a contractor “taking a contract” to deliver a specific well-designed and specified project is never going to be out-dated. There are numerous circumstances when this approach will be optimal for a host of good reasons. What has become more obvious however, particularly in a marketplace which is rapidly developing new technologies, materials and construction methods, is that no single entity has a mortgage on all of the good ideas! Thus the benefits of assembling a supply chain for their specialist skills, experience and management know-how may outweigh the conventional selection criteria of lowest tender price.

If we stop for a moment to reflect on the notion that a linear planning and design process which (sometimes takes years) and culminates in the issue of “Tender Documentation” is expected to produce “best for project” specification, we can see that it is flawed in one key element—that being the exclusion of the contractor in the planning to that point in time. The lack of “buildability” advice to that point is often cited as a shortcoming in traditional tender procurement policy. While many tenders allow

for alternative design-build solutions, it would, in my view, be much more efficient to debate the merits and demerits of those alternatives at a much earlier stage to save effort and costly re-working.

Collaborative Working Arrangements

In Collaborative Working Arrangements, the assembly of the design and construction team is advanced on the project timeline as much as is feasible to create a “unity of purpose” and single-minded determination to adopt “best for project” decision-making from project inception. In this context “best for project” should always be interpreted as “best for client” though of course in a pure alliance context there are a multiplicity of stakeholders, whose interests must also be satisfied for a “win-win” result to occur.

It is fair to say that the advent of Project Alliances, Partnering and CWA's has not been met with universal acclaim from the design professions across the globe -many of whom have seen such collaborative working processes as “design/build led by contractors”. Such labeling is unhelpful and in many cases unwarranted in my experience as the selection of the CWA consortia has often been founded on the belief that a design team leader with real vision is the key success factor. Certainly the most successful project alliances and CWA's have had superior design capability, and so long as this cardinal “rule” is not ignored, I feel that architects and engineers need not fear for their professional standing when employed in CWA's. Indeed I would advocate a stronger role for the design team in taking a lead in the value management phase of the design process. Too frequently in my view, value management has been confused with aggressive cost cutting with results that don't always meet client requirements. That is not to say the QS profession ought not to be represented in value management forums. What I would be encouraging is value-driven advice. Too much emphasis is often placed on reducing capital costs rather than costs-in-use, and in general it would be a step forward for the industry to become much more adept at modeling through life costs so that all stakeholders' interests can be considered. This is particularly important with taxpayer-funded projects, as we are discovering with the PPP projects overseas.

Cost Versus Price

During the past 3-4 years, our firm has been intensely involved in the analysis of construction industry margins across a broad spectrum of design and construction companies in New Zealand. This has been a necessary corollary of open book accounting in the true sense of the word.

Within each tier of the market, and within geographical regions, there is significant evidence to suggest that on any given tender occasion, there may be small discernible differences in prices offered, but very little difference in margins bid.

That suggests that tendering success or failure may have more to do with raw cost competitiveness, organizational capability and approach than the margin strategy. If that is indeed a correct hypothesis, then it would surely behave us to better understand the basic building block of cost in preference to the market price?

In the civil engineering marketplace traditional and experienced “first principles” estimating remains a key success factor, whereas in the building construction market the assembly of prices bid by supply chain partners, sub-contractors and suppliers might be more commonplace. This trend in “price taking” has diminished the reliance on first principles estimating and with that change, we appear to have lost some knowledge of our true costs and possibly too some control over them...

I have found it fascinating that a number of contractors with whom we have worked, on an open-book cost accounting basis (in the context of Collaborative Working Arrangements), have scant knowledge of their actual raw costs but a keen “nose” for the market price, they need to meet to win their fair market share. Conversely, when encouraged to better understand their cost structures, there has been huge enthusiasm for discovering how relatively competitive they really are. This is both welcome and insightful, for it explains much about the relative costs of construction in New Zealand.

Productivity Tools

Equally encouraging has been the take up of interest in calibrating productivity and efficiency – which the collaborative working approach seeks to do in the constant drive for continuous improvement. While the scale and duration of many construction projects in New Zealand is such that daily, weekly and monthly monitoring of man-hours may be unnecessary if not impractical, it is heartening to discover that armed with sophisticated planning and monitoring tools, a number of companies exposed to such disciplines for the first time have taken lessons learned back to their everyday businesses. There is therefore a desire for learning and developing and if that drive for improved productivity can be captured across the whole supply chain, the prospects for our industry in New Zealand are very positive.

In closing I have to agree with the conclusions drawn from earlier articles that INTEGRATION is the key to the way ahead.



Stewart Rix is Managing Director of Collaborative Management Services Ltd (CMS), which specializes in facilitating collaborative working practices on project alliances and CWA's.

He is also adjunct professor in the School of the Built Environment, UNITEC.

If all fails and we face a dispute...

Part 3 of Frank McDonough's article

Concluding Frank's presentation of the steps to be taken by an expert participating in the arbitration of delay disputes, we summarise his recommendations for the Witness Statement and his views on testimonial procedures. Even though the presentation is based on Frank's experience with the ICC arbitration rules, his advice is applicable to most expert witness presentations – starting from the early stages of preparation for a **potential** dispute, when the expert may be called to counsel on the type of supporting evidence to be assembled by the party concerned.

The Witness Statement

Any analysis must obviously reflect the degree of complexity of the subject matter, and construction is usually complex and fact-intensive. However, the analysis must also be presented in such a way that is clearly understood by its intended audience. Thus, the analytical purpose, approach, steps taken, and conclusions must all be explained and summarized in a clear and logical way, avoiding unnecessary detail and technical jargon. The written Expert Statement will be a primary document in evidence, likely to be studied in detail by the tribunal, and must include all key supporting information and source documentation.

In addition to the written word, the Statement should include photographs, summary-level programs, charts and other graphics that significantly help clarify the main programming concepts, methodology and conclusions. The written medium must be supported by visual aids that clarify the report and assist the oral testimony (*see the examples in our second edition*) and considerable care must be exercised in their preparation. A sample outline of the Programming Expert's statement is shown in Table 1.

Direct Testimony

Frank continues... "Based on experience as an expert and as a tribunal member / chairman, I believe that the arbitration process can derive great benefit from a brief direct oral presentation by the Expert Witness. It provides an opportunity for the panel to refresh its recollection of the Witness Statement, and it is logical to commence live testimony with a summary of the Expert's task, approach and opinions.

The use of visual explanatory aids on a projection screen can also be helpful, although care is needed to ensure the graphic evidence



Table 1: Sample Outline – Programming Expert Witness Statement

Introduction

Executive Summary

- Objectives
- Contract requirements for programming and variations
- Approach
- Baseline programme
- Programme updates during construction
- As-built research
- Projected programme to completion
- The critical path
- Detailed delay analysis
- Concurrency
- Extensions of time
- Summary and conclusions

Appendices

- Factual support documents
- Fact testimony relied on
- Graphics and sources
- Computer reports

displayed is consistent with, and supported in the Witness Statement. The direct testimony projection handout should be provided as an exhibit, along with the transcript of the programming expert testimony."

This forum can provide to both parties' counsel and experts a better understanding of the tribunal's areas of enquiry, which will help focus the programming testimony, and enhance the effectiveness of the arbitration.

Whether or not direct testimony is permitted by the tribunal, the Expert Witness must be fully prepared to give an oral summary of the testimony under questioning by the tribunal or by legal counsel.

Frank McDonough concludes that... "The task of the construction programming expert witness before an arbitration tribunal is difficult and challenging; all projects and the causes of delays are different, and there is no formulaic solution to the analysis of the unique facts and circumstances of delay in the framework of unique contract provisions.

“Effective testimony in this field is largely dependent on the expert’s understanding of the contract and the construction project, detailed factual research, comprehensive program and delay analysis, well organized documentary support, and a clear explanation of purpose, method and conclusions with explanatory graphics.” *A list of specific recommendations is attached in Table 2.*

This note, and the preceding two parts, have been extracted from the full paper by Frank McDonough, which can be found at www.mbpce.com/news_pubs_london.pdf. Parts 1 and 2 of this article can be downloaded from www.caenz.com (click the link under the ‘Current Newsletters’ heading).

Table 2: Programming Expert Witness Recommendations

- Stand-alone Witness Statement
- The Contract as the Foundation
- Detailed factual research
- Comprehensive program analysis
- Explain the methods used and why
- Clear conclusions on number and apportionment of days of delay
- Account for concurrency, if any
- Documentation/Fact Witness support
- Know the case!

Key Performance Indicators: We need your participation!

The Centre for Advanced Engineering (CAENZ), supported by Building Research, has undertaken a study into how best to measure construction industry performance—to obtain objective data on how well the industry is performing, and to allow companies involved in the construction industry to measure their performance against the overall industry benchmarks.

Key Performance Indicators (KPIs) can be used to establish a basic system of measurement for critical issues, for benchmarking performance against the national levels of achievement, and for setting improvement targets. An important KPI is “Safety Lost Time Incidents” per 200,000 hours worked. The Centre is currently collecting data for the 2006 calendar year and would like your assistance.

Benefits of using measurement

When properly used as part of a consistent improvement programme, KPIs can offer significant benefits to construction companies/builders and their clients, including:

- Benchmarking against industry performance, using lessons learned from the best performers to achieve targeted improvements.
- The better players are able to demonstrate that they can differentiate on performance, not just price, developing a barrier to poor performers in the market place.
- Choosing among the better performers using well-researched information.
- Building contracts around incentives based on performance targets.

The evidence gathered from “best practice” companies shows that performance measurement and benchmarking can yield real benefits to companies by shining a spotlight on their performance and showing where action is needed to improve slack areas. However, to be of value, the measurement system needs to be founded on the correct principles and used in the appropriate cyclic framework of measurement, analysis, action, and measure/evaluate again.

How you can help

CAENZ asks you to assist with data collection. This would not be an onerous task as it would simply require the completion of a Client Survey Questionnaire (5 pages) or a Contractor Safety Survey (2 pages) at the end of each completed project.

The main questionnaire is targeted at the clients and is to be completed by them – with the benefit to the contractor of an opportunity to use the completed questionnaire as feedback and to see how his performance compares with the national levels of achievement, and for setting improvement targets.

CAENZ asks for your help by filling out a survey for one or more projects completed in the 2006 Calendar year.

Copies of the Questionnaires are available as a pdf, or as an online form at http://www.caenz.com/KPI_Survey/KPI_Letter.html

A handbook explaining the KPI’s and how they are used can be purchased from CAENZ and the full suite of KPI’s is available in a free pdf on the website above. For further information on the KPI’s contact Scott Caldwell at s.caldwell@cae.canterbury.ac.nz or visit our website www.caenz.com

Procurement 2007: Getting the Best Value in a Hot Market

Industry Summit, 30-31 May 2007

Waipuna Hotel & Conference Centre,
58 Waipuna Road, Mt Wellington, Auckland, New Zealand

Organised in collaboration by

The New Zealand Centre for Advanced Engineering
and
The Property Council of New Zealand

The construction industry summit will offer the opportunity for the New Zealand construction sector to start thinking strategically and acting together to anticipate the long-run impacts of several emerging trends arising from continual pressure on industry capacity.

Hosted by The New Zealand Property Council and the New Zealand Centre for Advanced Engineering (CAENZ), the two-day event will bring together national and international leaders to analyse current and future market conditions, from a range of industry perspectives.

Procurement 2007: Getting Best Value in a Hot Market is a direct response to concerns within industry leaders that the sector is not adequately prepared for the changing circumstances ahead.

New Zealand's economic performance and social wellbeing is closely associated with the quality and performance of its built infrastructure but the construction industry faces serious issues around performance, image, customer focus and skills development. For an industry that contributes 15% of GDP and employs around 14% of the workforce, it's vital that long-term capacity forecasting and delivery performance be addressed. In particular, there is a need to examine current and future profitability, the way final costs are predicted, and how we can increase industry capabilities.

If left unaddressed, the industry will face declining profitability and supply-side constraints such as under-recruitment of skills and expertise.

This summit will bring together a broad range of stakeholder views, and through a synthesis of ideas and discussion it will enable the industry to develop strategies and priorities for future action.

Target Audience

- Property developers
- Constructors
- Quantity Surveyors
- Consultants – engineering, legal, project management
- Construction managers
- Financers
- Government

The Key Themes for the Summit are:

- Current and future trends in construction procurement
- Innovative approaches to procuring construction
- International experience in a heated market
- Stimulating a collaborative industry approach to these issues