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CONSTRUCTION CONTRACT ADMINISTRATION PRINCIPLES: GUIDE TO CONSTRUCTION CONTRACT PROFESSIONALS

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1. PRE-CONTRACT PREPARATION

1.1 STANDARD FORM CONTRACTS

There are many standard form General Conditions of Contract available for use on construction projects in Australia.

AS2124-1992 and AS4000-1997 are currently the most widely-used Standards Australia produced General Conditions of Contract for construction projects.

This standard form was first published in 1952 (originally known as CA24). Since that time it has been reproduced in several editions, changing its designation in 1978 to AS2124. AS2124 was revised in 1978, 1981, 1986 and 1992, then changing, in 1997, to the AS4000-1997 series of General Conditions of Contract.

The AS2124-1992 General Conditions of Contract is still widely used (even though the standard form is 25 years old, and was superseded by AS4000-1997 in 1997). AS2124-1992 is the basis of several hybrid General Conditions of Contract, in particular:

AS2124-1992	Construction Works
AS2545-1987	Sub-Contract
AS2987-1987	Equipment Supply and Installation
AS3556-1987	Supply
AS4300-1995	Design & Construct
AS4303-1995	Design & Construct Subcontract
AS4305-1996	Minor Works

There are, however, a number of unfortunate drafting errors in the AS2124-1992 General Conditions of Contract, attributable no doubt to the committee process of revision, which would need to be remedied before the document is suitable for use on major engineering projects. In brief, those drafting flaws include:

1. the document, in its treatment of Bills of Quantities, places the risk of pricing the works with the Principal rather than the Contractor (contrary to the recommendations contained in "No Dispute" which recommended the reverse);
2. uncertain risk allocation in a number of important areas (e.g. default of selected Sub-contractors);
3. inadequate security/retention provisions, which disentitle the Principal from access to security or retention in the event of defective work removing the commercial equivalence of bank guarantees to cash;
4. no provision of collateral contracts within the document (perhaps this is a reflection of the failure of the committee to follow the commercial trends);
5. complex logical difficulties relating to the conflicting roles of the Superintendent (as between his role as agent for the Principal and as an independent certifier);
6. the document does not include an acceleration clause;
7. the latent conditions clause is expressed as a subjective test likely to favour inexperienced Contractors;
8. the extension of time clause has a number of logical and commercial difficulties;
9. the certificate of progress payments by the Superintendent requires the Superintendent to certify for claims, which may involve a legal judgment, and for claims, which may arise out of his own error, which are likely to result in challenges to the certificate by the Contractor;
10. the dispute resolution clause does not constitute a binding arbitration agreement.

Many of these (but not all) drafting flaws did not appear in the AS4000-1997 series. That series, however, includes other potential drafting issues (for example, AS4000-1997 does not include a time bar, unlikely to be preferred by principals in selecting a form of contract).

AS4000-1997 is the current version of the Standards Australia General Conditions of Contract for Construction. AS4000-1997 (theoretically) superseded AS2124-1992 as the Standards Australia produced General Conditions of Contract for construction projects. AS4000-1997 (like its predecessor) is the basis of further hybrid General Conditions of Contract, in particular:

AS4000-1997	Construction Works
AS 4901-1998,	Subcontract conditions
AS4902-2000	Design & Construct
AS4903-2000	Subcontract conditions for design and construct

AS4904-2009	Consultants agreement – Design and construct
AS4905-1996	Minor Works (Principal administered)
AS4906-1996	Minor Works (Supt administered)
AS4910-2002	Supply of equipment with installation
AS/4911:2003	Supply of equipment without installation
AS4912-2002	Periodic supply of goods
AS4915-2002	Project management – General conditions
AS4916-2002	Construction management – General conditions
AS4917-2003	Construction management trade contract – General conditions
AS4919-2003	Asset maintenance and services (Superintendent's version)
AS4920-2003	Asset maintenance and services (Principal's version)
AS4921-2003	Provision of asset maintenance and services (Short version)
AS4949-2001	Work Order

For the reasons set out above, the AS2124-1992 and AS4000-1997 series of General Conditions of Contract are always substantially amended by private sector principals prior to use on major projects, or not used at all.

For convenience, and reflecting that the Standards Australia forms of General Conditions of Contract are the most widely used in practice, these notes refer to those standard forms throughout.

There are multiple, alternative, standard form construction contracts in use in Australia, including:

Australian Building Contract (ABIC):

ABIC MW-2008	Major Works
ABIC SW-2008	Simple Works
ABIC BW-2008	Major Works
ABIC EW-2008	Major Works

Master Builders Australia:

BC3	Commercial Lump Sum
BC4	Residential Lump Sum
CM2012	Construction Management Contract
CP3	Commercial Cost Plus
CP5	Residential Cost Plus
DB1	Domestic Building
DECON 2	Design & Construct Contract
GCC5	Head Contract Commercial
HC6	New Homes Contract
MWC-C	Commercial Minor Works
MWC-1	Residential Minor Works

There is an excellent discussion of standard form contracts in use in Australia in the University of Melbourne Report, Prof J Sharkey et al, "*Standard Forms of Contract in the Australian Construction Industry*", June 2014. https://law.unimelb.edu.au/__data/assets/pdf_file/0007/1686265/Research-Report-Standard-forms-of-contract-in-the-Australian-construction-industry.pdf

1.2 TYPES OF CONTRACT

There are a range of contract types which may be attractive on a particular project.

The choice of a particular style of project delivery system will depend on many factors, for example:

- ease of design (buildings vs complex engineering projects);
- desire for design flexibility during construction;
- availability of suitable contractors/project managers, and balance sheets of such contractors;
- political considerations;
- budget constraints vs performance of completed project.

On major public sector projects, the use of standard form fixed-price contracts would be more prevalent than on similar scale private sector projects (though, in contrast, BOOT projects are essentially public sector projects delivered by the private sector, see below).

There are multiple different types of project delivery systems as follows:

1. **Fixed Price Contracts**

   The traditional form of construction contract has been a fixed price contract.

   The general operation of this type of contract requires the Contractor to tender on, and then take the risk in relation to, the price of the works. The Contractor, irrespective of the actual cost of the works, will be entitled to be paid no more than and no less than the Contract Sum, as agreed between the parties prior to commencing the works.

   In fact, for a number of reasons which are discussed elsewhere in this and related topics, a fixed price contract is rarely performed for exactly the amount of the originally agreed Contract Sum. For example, if the Principal delays the Contractor in obtaining the site, the contract would usually provide for an increase in the Contract Sum.

   The critical characteristic, however, of a fixed price contract, is that the Contractor takes the risk as to the ultimate price, and that the parties agree to pay the Contract Sum (as adjusted pursuant to the provisions of the Contract).

2. Cost Plus

   The critical characteristic of the cost plus contract is that there is no risk, as to cost, borne by the Contractor.

   The Contractor and the Principal agree, at the time entering into the Contract, that the Contractor will perform the works, and that the Principal will pay for those works, on the basis of the actual cost of the Works to the Contractor, plus an agreed fee, usually an agreed percentage of that sum (or some other agreed incentive over and above the actual cost of the works).

   A cost plus contract is, therefore, risk-free, as to cost, for the Contractor.

   This does not mean, however, that the Contractor is entitled to charge whatever he likes. The Contract will usually provide that the Contractor has to verify and/or justify the cost of the works to be charged under the Contract. Further, one could envisage circumstances where, through negligence by the Contractor or some other reason, the Contractor would not be entitled to recover the full cost of those works.

   There are flexibility reasons why such an arrangement may be attractive from time to time for a Principal.

   For example, the Principal might have a strict budget to comply with, and may be in a position of being able to increase or reduce the Works as they are performed (for example, by deleting or adding parts of the Works, or by increasing or decreasing the quality of the selected materials) to ensure that the final cost of the Works remains within that strict budget. (In theory, this should be equally possible under a fixed-price contract. For the reasons referred to above, however, in certain instances the Contract Sum being able to be adjusted, a Cost Plus Contract, where the Works themselves are able to be changed during construction, might, conceivably, provide a more convenient method of ensuring that the cost stays within particular limits, albeit that the Works to be performed may change from that which was originally proposed.)

   The nature of cost-plus contracting, therefore, is that the Contractor agrees to perform the works but that the risk as to the final cost of those works is borne by the Principal, not the Contractor (the reverse of the position under the fixed price contract).

3. Design & Construct Contract

   A design & construct contract requires the Contractor to tender on the works described in the design brief (prepared by the Principal), and tender not only for the construction of the works described in that design brief, but also for the completion of the detailed design, consistent with that design brief.

There are a number of construction reasons which suggest that the design & construct method of contracting has the potential to reduce the overall cost of construction to the Principal.

The nature of this type of contract is such that the Principal is able to enjoy the advantages of design efficiencies which Contractors, through their contracting experience, may be able to incorporate into the design of the works, which may have the effect of reducing construction cost (this is discussed further below).

The Principal is still required to adequately specify (in the design brief) the works to be completed for the Contract Sum. The degree to which that work is specified, however, is less than that which would occur under a construction only contract. The accuracy of the design brief (which, again, is discussed further below), is critical to the Principal being able to rely on the design & construct contract.

4. **Project Management Agreement**

A project management agreement is one in which the Principal contracts, not with a Contractor who would perform the construction (or the design and construction) works, but with a person who would manage the project on behalf of the Principal, whether by performing the works in part or wholly himself, or by contracting out part or all of the works on behalf of the Principal, or a combination of all of the above.

There is an infinite variety of possible project management contract types (these are discussed further below).

The nature of a project management agreement, however, is that the Principal engages a person to manage the project on its behalf, rather than engaging a Contractor to construct the Works. The functions typically performed by a Project Manager, therefore, are usually more extensive than those which might be performed by a Contractor. Further, the risks borne by a project manager, under a project management agreement, are typically less than, or at least different to, those borne by a Contractor.

The types of functions performed by a project manager, pursuant to a project management agreement, typically include the design, or procurement of the design on behalf of the Principal, the construction or procurement of the construction on behalf of the Principal, and, in particular instances, other activities including, for example, site selection, site acquisition, permit approvals, advertising of the project, leasing or pre-leasing of the project, and/or other activities which might otherwise need to be performed by the Principal.

The essential feature of the project management agreement is that the works to be performed pursuant to the agreement are the necessary management services rather than the contract construction works.

5. Construction Management Agreement

A construction management agreement is similar in most respects to a project management agreement, except that, typically, the services to be provided by the Construction Manager are restricted to construction activities only (rather than, for example, design activities, site acquisition, leasing activities...).

Accordingly, construction management agreements are, typically, similar in structure to project management agreements.

The substantive functions to be performed by construction management, typically, include engaging trade contractors on behalf of the Principal, and potentially, the provision of preliminaries for those trade contractors.

6. **Managing Contractor Contract**

The Managing Contractor might be characterised as a hybrid of a project management/cost-plus/fixed price contract.

Typically the features of such a contract would include:

- the Managing Contractor contracts with the Principal to manage the construction of the works on behalf of the Principal
- the Managing Contractor contracts with the Principal to provide, at a fixed price, or alternatively at a percentage of the total contract price, certain aspects of the works (for example, the preliminaries, including crane hire, site sheds, supervision services...)
- the Managing Contractor may perform all or part of the design services for the Principal
- the Managing Contractor will arrange the trade packages, tender and enter into the trade contracts on behalf of the Principal and, potentially, itself perform some of the trade contract works
- the Managing Contractor will perform the usual supervision, reporting activities required on the project to keep the Principal informed of the progress of the works.

The attraction of the Managing Contractor type of contract is its flexibility and the skills which the Managing Contractor may be able to bring to the project, to assist the Principal.

7. **Warranted Maximum Price Contract**

A Warranted Maximum Price Contract is, in substance, a cost-plus contract between the Principal and the Contractor, which, in turn, is subject to an upper limit (the Warranted Maximum Price), above which, subject to certain conditions, some of which are discussed below, the Contractor will bear the risk as to costs.

Under a Warranted Maximum Price contract, the Contractor is to be paid on a cost-plus basis up to a certain limit. Over and above that limit, the Contractor is not entitled to any further payment. That limit, however, as in the case of the Contract Sum under a Fixed Price Contract, is subject to adjustment in certain circumstances (for example, where the Principal varies the works, or where the Principal causes delay and/or additional cost to the Contractor).

The benefit of the Warranted Maximum Price contract is in giving some upper limit degree of comfort as to the total cost of works, provided those works are adequately described as to scope, yet allow the parties to enter into the Contract on a cost-plus basis where that is an appropriate vehicle for them (this is discussed further below).

8. **Build Own Operate Transfer (BOOT) / PPP Project**

Since 1989, in Australia, there have been a substantial number of major construction projects which have been performed using the BOOT, or BOT vehicle. This type of project is more usually called, now, a PPP or “Public Private Partnership” project.

The basic structure of a BOOT project is that the Contractor agrees with the Principal not only to build the project but to arrange finance for the project, and then, using that finance, to build the project, to own the project for a limited period, to operate the project throughout that period, and then, at the end of that period, to transfer the project to the Principal.

Typically, this style of structure is employed on public infrastructure projects where, but for the intervention of private sector financing, the project might not proceed.

Choice of Project Delivery System

The choice of any particular project delivery system is made at the commencement of the project. Historically, however, little, or inadequate, consideration is given to the many types of possible contract structures available for any particular project.

In fact, there is an unlimited number of potential project delivery systems based on the above, or a combination of any or all of the above, which might be suitable to any particular project.

The choice will usually depend on factors such as:
- the need for strict cost control;
- the need for flexibility in what is to be constructed throughout the construction period;
- the complexity of what is to be constructed;
- the inhouse resources of the Principal;

- the expertise of the likely tenderers;
- particular budget constraints;
- financing considerations.

1.3 FIXED-PRICE vs COST-PLUS CONTRACTING

Fixed Price?

In theory, a Fixed Price Contract is one in which the Principal contracts with the Contractor to perform agreed works for a fixed price.

Accordingly, irrespective of whether the works actually cost more or less than the agreed Contract Sum, the Contractor is entitled to receive no more than and no less than the Contract Sum at the end of the works.

In practice, however, there are a number of ways in which the Contract Sum can (and usually does) alter during the period of construction on the works, including, for example:

1. the Principal failing to deliver the site to the Contractor on time;
2. the Principal failing to deliver exclusive access of the site to the Contractor at the agreed time;
3. the Principal failing to provide the detailed contract drawings and/or specifications required of the Principal under the Contractor by the agreed time;
4. the drawings and/or specifications provided by the Principal having errors or omissions or being incomplete;
5. the site having characteristics different from that which was described in the tender documents;
6. material to be dealt with on the site being different from that which was anticipated under the tender documents;
7. other reasons pursuant to which the Contractor would reasonably be entitled to claim more or less than the Contract Sum on the basis that the works as ultimately performed were different to those works which were described in the tender documents.

In fact, as a matter of practice, a Fixed Price Contract is rarely performed for the exact amount of the **original** Contract Sum. This is not surprising when one considers the nature of a construction contract (in comparison, for example, with a Contract of Sale for land). The nature of a construction contract is such that works as **generally** described in detailed and complex contract documents are to be performed over an extended period of time, subject to a large number of variable conditions, which the parties need to anticipate and which may bear on the actual cost of construction.

Turnkey Contracts

The Fixed Price Contract is different to a true “turnkey” contract.

(Unhappily, the word “turnkey” is often used interchangeably with “fixed price contract”, or what are in fact fixed price contracts are wrongly called “turnkey” contracts on particular projects, thereby giving rise to the confusion.)

A turnkey contract is one in which the Principal and the Contractor agree on a **fixed** Contract Sum to be paid upon completion of the works to a particular standard and/or performance criteria, and in relation to which the Principal does not participate in any way in the actual performance of the works but, at the end of the works, is invited to inspect the works and, subject to the works being adequately constructed and performing to the requisite criteria, the Principal then paying the full amount of the Contract Sum and taking over the works. (The Principal is said to simply hand over the cheque, turn the key and commence operation.) In a fixed price contract, by comparison, the Contract Sum is **adjusted** throughout the contract period, (for the reasons set out above). A true turnkey contract, in practice, is more akin to a purchase contract than to a construction contract.

Cost Control of Cost-Plus Contracts

The Principal may impose a number of cost controls in a cost-plus contract.

<u>Capping:</u>

For example, there may be an overall cap on the Maximum Price (usually referred to as a Warranted Maximum Price Contract), subject to the following:

- the Warranted Maximum Price is subject to the scope of the Works being adequately described;

- the Warranted Maximum Price as adjustable, just as the Contract Sum is adjustable under a fixed price contract.

Fixed price trade contracts forming part of the cost-plus contract:

Alternatively, the Contractor, though himself on a cost-plus basis, may be required to procure all or an agreed part of the works through fixed price trade contracts, each of which is to be vetted and approved by the Principal.

The Principal would, with the assistance of the Project Manager, negotiate and enter into prime contracts with the proposed trade contractors, the technology providers, and other major contractors as are identified at the time of allocating work/supply contracts between the prime contractors.

This structure has been successfully used on a number of major projects around Australia..

Wherever this project structure has been successful, however, the Principal has been protected from the possibility of unlimited cost overruns by incorporating all of the work (say, 85% plus of the work) in fixed price trade contracts. The Principal enters into a cost-plus contract with the prime contractor, the work is then contracted out by the prime contractor on a fixed price basis, the prime contractor being entitled to cost-plus reimbursement by the Principal for those trade contract prices. Effectively, therefore, the Principal has the benefit of fixed price contracting.

Features of the Trade Contracts:

The Contractor would be required to perform the works within a number of trade contracts.

There are a number of contractual protections (for the Principal) which should be incorporated into those trade contracts to ensure the time/cost targets are ultimately met on the project:
1. the trade contracts should be fixed price;
2. the terms of the trade contracts, generally, should be agreed between the Principal and the Contractor;
3. the trade contracts should be put out to open tender;
4. there should be an approval process whereby the Principal may review the proposed tender process, and shall have final approval of any particular trade contract (subject to, if necessary, such trade contracts having a value above a minimum trade contract value);
5. the trade contracts should provide adequate security for the performance of the contract, and provisions for liquidated damages (in respect of both, late completion and underperformance) sufficient to compensate the Principal for its losses if necessary.

Subject to these protections, the Principal would have effective contractual remedies in respect of the works, should there be a failure to perform in accordance with the targets ultimately developed between the Principal and the Contractor.

Incentive Provisions:

Finally, the cost-plus contract would preferably include a regime of bonuses and penalties, and potentially a cap on the total cost, all of which would be subject to the Program. The bonus/penalty targets would be developed by the Principal, assisted in some instances by the Contractor, and incorporated into the cost-plus contract.

1.4 TENDERS/PROBITY

Duty to Treat tenderers Fairly

There have been cases in Australia where the courts have decided that a tender process, depending upon the language used, constituted a contract between the Principal and the respective tenderers. In substance, the Principal was, in the right circumstances, promising the tenderers that the tender process and evaluation would be performed in accordance with the tender evaluation criteria described in the tender documents.

In *Ipex ITG Pty Ltd (in liq) v State of Victoria* [2010] VSC 480, the Supreme Court (Sifiris J) was considering a claim by an unsuccessful tenderer that the Victorian government had breached its contractual duty in relation to the evaluation of tenders for the Parleynet project in 2003. His Honour reviewed the authorities and concluded:

1. Each tender must be considered on its own facts, including the tender and/or related documents, and the relevant context and circumstances, to determine whether there is any intention to create an immediately binding contract as to process.
2. The courts have been more inclined towards finding a contract had been made in relation to the "tender process" where a timeline and detailed process, including evaluation criteria, are set out in the tender documents in a way consistent with such a promissory obligation to follow that timeline and process.
3. In this instance, the RFT was intended to be a legally binding contract as to process, including detailed evaluation criteria , rather than simply a document that provided relevant information. The RFT contained detailed evaluation criteria that Parliament said "will" or "must" be applied, suggesting a "commitment, promissory in nature, to abide by a process particularly in relation to the evaluation of tenders".

The court expressed the general obligation on the Principal as follows:

> *48 The critical terms alleged by Ipex are that the defendant was obliged to act fairly and reasonably and in good faith and of course comply with the criteria and approach referred to in the RFT as promised.*
> *……*

The tender conduct complained of by tenderer in *Ipex* was that the State had:

1. relied upon, as the basis for evaluation of the tenders, flawed evaluation criteria, which attached insufficient importance and weight to the financial aspects of the respective tenders;
2. in failing to select the cheapest tender, failed to use value for money as the primary determinant in assessing tenders;
3. failed to inform tenderer:
    a. that it intended to adopt or had adopted the evaluation criteria;
    b. that the evaluation criteria gave a weight of only 10 per cent to the financial aspects of the tender;
    c. of the terms and weighting of the evaluation criteria; and
    d. that the evaluation criteria would be used to shortlist tenderers

His Honour reviewed each of these objections and ultimately concluded, in *Ipex*, that there had been no breach of that tender process contract.

Probity principles in public procurement

A government agency is obliged, in running a public tender, to comply with proper, legal tendering principles. Specifically, a government agency is under a contractual duty to tenderers to treat them fairly. There is a substantive body of law that, in some cases, depending upon the terms of the particular tender, a contract is formed between the principal and tenderer, which includes an implied term that in consideration of the tenderer submitting a tender in accordance with the tender conditions, the principal will assess those tenders fairly.

In *Ipex ITG Pty Ltd (in liq) v State of Victoria* [2010] VSC 480, the Supreme Court (Sifiris J) was considering a claim by an unsuccessful tenderer that the Victorian government had breached its contractual duty in relation to the evaluation of tenders for the Parleynet project in 2003. Ipex was an unsuccessful tenderer for a contract for the provision of 'system integration services' for the Parliament of Victoria. An evaluation plan had been prepared but not distributed to tenderers. Ipex's tender had been assessed by the project evaluation team as "not demonstrating a good understanding of what Parliament was seeking under the project", and as not representing value for money albeit that its tender price was low (Ipex's tender price was around $2.8 million compared to the winner's price around $7.8 million). Ipex was removed from further consideration. The court reviewed the authorities in relation to when a binding contract was formed , and summarized the authorities as follows:

1. Each tender must be considered on its own facts, including the tender and/or related documents, and the relevant context and circumstances, to determine whether there is any intention to create an immediately binding contract as to process.

2. The courts have been more inclined towards finding a contract had been made in relation to the "tender process" where a timeline and detailed process, including evaluation criteria, are set out in the tender documents in a way consistent with such a promissory obligation to follow that timeline and process.

The court ultimately concluded, in relation to *Ipex*, that the RFT was intended to be a legally binding contract as to process, including detailed evaluation criteria , rather than simply a document that provided relevant information. The RFT contained detailed evaluation criteria that Parliament said "will" or "must" be applied, suggesting a "commitment, promissory in nature, to abide by a process particularly in relation to the evaluation of tenders". The court then found, however, in the particular case, that there had been no breach of that tender process contract. This reasoning was subsequently approved on appeal by the Victorian Court of Appeal in *Ipex ITG Pty Ltd (In liquidation) & Takapana Investments Pty Ltd v State of Victoria* [2012] VSCA 201. The effect of this reasoning, consistent with all modern legal authorities, is that a principal, in inviting tenders on public works, is under a contractual duty to treat tenderers fairly.

What constitutes a breach of probity

In *Ipex ITG Pty Ltd (in liq) v State of Victoria*, the tender conduct complained of by the unsuccessful tenderer was that the State had:

1. relied upon, as the basis for evaluation of the tenders, flawed evaluation criteria, which attached insufficient importance and weight to the financial aspects of the respective tenders;
2. in failing to select the cheapest tender, failed to use value for money as the primary determinant in assessing tenders;
3. failed to inform tenderers:
    a. that it intended to adopt or had adopted the evaluation criteria;
    b. that the evaluation criteria gave a weight of only 10 per cent to the financial aspects of the tender;
    c. of the terms and weighting of the evaluation criteria; and
    d. that the evaluation criteria would be used to shortlist tenderers

In *Hughes Aircraft Systems International v Airservices Australia* [1997] FCA 558, the unsuccessful tenderer (Hughes) claimed that the principal (CAA):

1. failed to evaluate the tenders in accordance with the methodology and priorities set out in the RFT;
2. took account of communications from the Minister, or else treated those communications as directions to the Board (ie political interference);
3. failed to contract an independent auditor to verify, and failed to ensure that the auditor verified, that the tender process procedures were followed and that the evaluation was conducted fairly;
4. allowed a board member (Mr Yates), itself and DITRD to have improper interests in, or affiliations with, the successful tenderer (Thomson) or the successful bid (ie improper interests and affiliations);
5. did not ensure strict confidentiality was maintained in respect of the tenders and permitted disclosure both of Hughes' tender information to Thomson, and of Hughes' and Thomson's tender information to DITRD, Minister Griffiths and Minister Collins (ie breach of confidence);
6. took account of the Thomson price reduction and variation submitted after the final submission of tender materials;
7. failed to conduct the tender evaluation fairly and in a manner that would ensure equal opportunity to Hughes and Thomson.

In *Cubic Transportation Systems Inc and Anor v State of New South Wales and ors* [2002] NSWSC 656, the unsuccessful tenderer claimed that the tender evaluation process was flawed in the following respects:

1. the reception and use of certain material was inappropriate in that there was a failure to report accurately on the problems identified in the development of certain systems, comprised a material departure from the specified tender process, and was productive of any unfairness, so that the process was not fair and reasonable and equal opportunity was not afforded to both tenderers;
2. a conflict of interest affecting Clayton Utz and Deloitte and other individuals;
3. a preferential presentation by one bidder to members of the project team.

In *Pratt Contractors Ltd v Transit New Zealand* [2003] UKPC 83, the unsuccessful tenderer complained that it should have been entitled to a quasi-judicial hearing. The court said:

1. The duty to act fairly meant that all the tenderers had to be treated equally. One tenderer could not be given a higher mark than another if their attributes were the same, but this did not require the principal to give tenderers the same mark if it honestly thought that their attributes were different.
2. The duty of fairness did not require the principal to appoint people who came to the task without any views about the tenderers, whether favourable or adverse.
3. The obligation of good faith and fair dealing did not mean that the principal had to act judicially. It did not

have to accord tenderers a hearing or enter into debate with them about the rights and wrongs of the process.

4. It would no doubt have been bad faith for a member of the TET to take steps to avoid receiving information because he strongly suspected that it might show that his opinion on some point was wrong. But that is all.

In *Dockpride Pty Ltd & Anor v Subiaco Redevelopment Authority* [2005] WASC 211, the unsuccessful tenderer claimed that the principal awarded the contract to a tenderer whose design did not comply with two items in the Design Guidelines.

1.5 PRE-CONTRACT DISCUSSIONS/MISLEADING & DECEPTIVE CONDUCT

The Legislation

The *Trade Practices Act 1974 (Cth)* ("TPA") was passed by the Commonwealth Parliament in 1974. At the time it was a fairly novel piece of legislation aimed at restrictive trade practices, and, in addition, attempting to regulate dealings between corporations and consumers. Constitutional limitations of the Federal Parliament generally limited the application of the Act to corporations under the Federal corporations power.

From 1 January 2011, the name of the *Trade Practices Act 1974 (Cth)* changed to the *Competition and Consumer Act 2010 (Cth)*, and certain other State Acts have been repealed, resulting in the new Australian Consumer Law ("ACL"). From 1 January 2011, the ACL applies nationally and in all States and Territories, and to all Australian businesses. For transactions that occurred up to 31 December 2010, the previous national, State and Territory consumer laws apply.

Schedule 2 Section 18 of the *Competition and Consumer Act 2010 (Cth)*provides as follows:

> *18 Misleading or deceptive conduct*
> *(1) A person must not, in trade or commerce, engage in conduct that is misleading or deceptive or is likely to mislead or deceive*

(This Section repeats the previous Section 52 of the *Trade Practices Act 1974 (Cth)*.)

The ACL gives a person who suffers loss or damage as a result of a breach of the Act a civil action for damages.

Bond Corporation Pty. Limited v. Thiess Contractors Pty Ltd.

In an early case, *Bond Corporation Pty. Limited v. Thiess Contractors Pty. Ltd. & Ors.* (1987) 71 ALR 615, Bond Corporation engaged a firm to act as consulting and supervising engineers for road, earth and drainage works. Following the calling of tenders, and acting on the advice of the consulting engineers, Bond engaged a contractor to carry out the works. Bond brought an action against the consulting engineer, alleging that the firm misrepresented its experience and expertise in the design and supervision of the works, and its ability to provide competent engineers with sufficient experience and to provide accurate estimates of work and subdivisional costs. Bond claimed that as a result of it relying on the consulting engineer's advice it would have to pay more than $5.4 million in excess of the estimated total cost of the development. The Court concluded that section 52 of the *Trade Practices Act* was applicable to the giving of professional advice by a consulting engineer. The provision of professional advice for reward fell within the class of conduct as it was engaged in "trade or commerce". The consulting engineer was found to have misrepresented its experience and expertise. (Ultimately, however, Bond failed to establish a causal link between the misleading conduct and the damage complained of.)

Unisys Australia Ltd v RACV Insurance Pty Ltd

In *Unisys Australia Ltd v RACV Insurance Pty Ltd & Anor* [2004] VSCA 81 (14 May 2004), the Victorian Court of Appeal was considering a claim for damages by RACV Insurance Pty Ltd against Unisys Australia Pty Ltd in relation to a computer supply contract. In March 1995, 2 years after contracting, Unisys delivered a system that did not meet RACV's expectations. RACV gave Unisys an opportunity to remedy the project, however, the system was still not to RACV's specifications. In June 1996, RACV terminated the contract and sought damages from Unisys. RACV claimed that Unisys had breached section 52 of the *Trade Practices Act*. The key claims

related to statements as to the adequacy of the proposed system for RACV's purposes, contained in Unisys' response to the Request for Proposal.

The trial judge had held Unisys liable, concluding that Unisys had represented it would be able (then failed) to deliver a system which met RACV's requirements, and that had Unisys represented otherwise, RACV would most likely not have given Unisys the contact. In the Victorian Court of Appeal, (rejecting the appeal, and allowing a cross appeal by RACV for wasted labor), Phillip JA said, in relation to the representations upon which the action was based, at paragraphs 48-49:

> *It is surely significant that, as found below, Unisys was anxious to obtain the contract with RACV; Unisys was representing that it could deliver a system to meet the needs of RACV which were articulated plainly enough in the RFP; and if Unisys later found it more difficult to honour the representations than it had at first expected, that does not absolve it from liability once the representations were acted upon. ....*

His Honour referred to the reliance by RACV upon the representations, in RACV deciding to award the contract to Unisys, based on the representations that had been made in the RFP and subsequent demonstrations by Unisys. His Honour concluded that the representations were not borne out, and then addressed the issue as to whether Unisys had, at the time it made the representations, reasonable grounds for making those representations. At paragraph 73:

> *There remains the appellant's argument based on s.51A of the Trade Practices Act that, if the representations were made in 1993 and made as pleaded (as has been concluded) so that they related to the outcome of the system if implemented and were thus as to the future, Unisys had "reasonable grounds" for making the representations. I do not know that it was seriously in dispute that the existence of those reasonable grounds had to be determined as at the date of the making of the representations and not, for example, in June 1996, the "cut-off" date. But as to reasonable grounds, the onus of proof lay squarely on Unisys and the trial judge rejected its submission that reasonable grounds were shown…*

Ultimately, the court awarded RACV damages of approx $4.3 million plus costs.

Abigroup Contractors Pty Ltd v Sydney Catchment Authority

In *Abigroup Contractors Pty Ltd v Sydney Catchment Authority* [2005] NSWSC 662 (11 July 2005), the NSW Supreme Court (Macdougall J) was considering a claim by Abigroup in misleading and deceptive conduct in relation to an $85.7 million lump sum contract with Sydney Water to design and construct a spillway on the Warragamba Dam. Under the contract, Abigroup bore the latent conditions risk. Ultimately, Abigroup was required to do substantially more excavation to solid rock and refilling with cement stabilised fill than expected. Abigroup argued that it had been induced to enter into the Contract by misleading or deceptive conduct on the part of Sydney Water (namely, advice that there was a representation that there were no plans of an outlet pipe that drained water through the embankment, though ultimately there was such a plan, which would have given information as to the depth of the underlying rock). The Contract included express acknowledgments that the tender documents might be incomplete, contain errors, and must not be relied upon, Sydney Water argued that Abigroup was estopped from arguing the misleading and deceptive conduct point because of these acknowledgements. Though the Contract required tenderers to go on site and do their own investigations, in fact there was no effective opportunity for them to do so. Tenderers were, in fact discouraged from going onto the site during the short (7 week) tender period. The tender documents included a concept design report and specifications, a DPWS geotechnical report. The information in the geotechnical report later proved to be "wildly wrong".

The court concluded, in brief:

1. Sydney Water, in issuing tender documents and entering into the Contract, containing statements which were wrong, while having in its possession the correct cross-section, had engaged in misleading and deceptive conduct.
2. Abigroup had relied on the misleading and deceptive conduct in submitting its tender and entering into the Contract.
3. The express acknowledgments in the tender documents that the documents might be incomplete, contain errors, and must not be relied upon, did not have the effect that Abigroup was estopped from arguing the

misleading and deceptive conduct point.

In relation to the Sydney Water argument that Abigroup was estopped from arguing the misleading and deceptive conduct point because of the express acknowledgments in the tender documents that the documents might be incomplete, contain errors, and must not be relied upon, the court reasoned, at paragraphs 66-67, as follows:

> *66 It is clear that, if one party (A) to a contract was induced to enter the contract by misleading or deceptive conduct (for example, a material misrepresentation of fact) on the part of the other (B), B cannot escape liability because the contract contains a term that purports to acknowledge that (for example) there was no anterior representation made to A, or on which A relied; or that purports to exclude liability for the consequences of any such representation . See the judgment of Burchett J inOraka Pty Ltd v Leda Holdings Pty Ltd (1997) ATPR 41-558. Although his Honour's decision was reversed on appeal, the relevant principle was affirmed by the majority in the Full Court: (1998) ATPR 41-601 at 40, 517-40-518 (Branson and Emmett JJ). .....*
>
> *67 The same principle applies to any document, including dehors the contract, that would purport to exculpate B from the consequences of its misleading or deceptive conduct .* See *Waltip Pty Ltd v Capalaba Park Shopping Centre Pty Ltd* (1989) ATPR 40-975; *Keen Mar Corp Pty Ltd v Labrador Park Shopping Centre Pty Ltd* [1989] FCA 46; (1989) ATPR (Digest) 46-048; and *IOOF Australia Trustees (NSW) Ltd v Tantipech* [1998] FCA 924; (1998) 156 ALR 470 ..... *The Full Court held that neither cl 25.08 of the lease, nor the relevant terms of the deed, could defeat the tenant's claim. That reflected, their Honours said, the public policy underlying s 52 of the Trade Practices Act. That public policy, they held at 479, "must extend to any document which purports to excuse a representor from liability for contravention of section 52?...*
>
> (emphasis added)

1.6 ALLIANCE CONTRACTS

Project alliancing is a distinct, project-specific, form of relationship contracting.[1] Under an alliance contract, the parties agree to work cooperatively, on an open book basis, with commercial incentives (painshare/gainshare) based on project outcomes, controlled by a (joint, senior) project alliance board and alliance management team, and on a "no dispute" basis.

Origins

Graham Thomson, in perhaps the earliest substantive paper on project alliancing, entitled, "*Project Alliances", AMPLA Yearbook 1997*[2], suggested the following "*Principles of Project Alliancing*":

> *(a) a primary emphasis on the business outcomes for all parties;*
> *(b) clear understanding of individual and collective responsibilities and accountabilities;*
> *(c) an equitable balance of risk and reward for the parties;*
> *(d) encouragement of openness and co-operation between the parties;*
> *(e) encouragement to develop and apply innovative approaches and achieve continuous improvement;*
> *(f) access to and contribution by the expertise and skills of the parties; and*
> (g) *a commercial basis which offers the opportunity to achieve rewards commensurate with exceptional performance*.

The drivers in favour of this type of project delivery were perceived, then and now, as including:
1. improved performance through commercial joint risk/reward incentives
2. avoids draconian contract terms/lack of trust/lack of co-operation
3. parties focus on project outcome ("win-win"), rather than individual claim entitlements

[1] Graham Thomson, 'Alliance Partnering as a Tool for Project Delivery' (paper presented at the Building for Growth Innovation Forum, Sydney, 4-5 May 1998).
[2] Thomson, G. (1997) 'Project Alliances', Australian Mining and Petroleum Law Association Yearbook (AMPLA), 127-146

Substantial Alliance Contracts Take-up in Australia

Since that time, in Australia, there has been a substantial number, and substantial contract value, of alliance contracts that have followed, and a large number of academic papers produced[3].

During the last decade, in Australia, the government agencies have voted with their feet. Public sector alliance contracts in Australia rose, dramatically, from a steady total contract value of around $1 billion, up to the years 2004-2005, to a steady total contract value of around $10 billion, from the years 2004-2005 to the present date, as depicted in Figure 2.4 below, from the seminal Report entitled, "*In Pursuit of Additional Value: A benchmarking study into alliancing in the Australian Public Sector",* by Dr Colin Duffield and Evans & Peck.

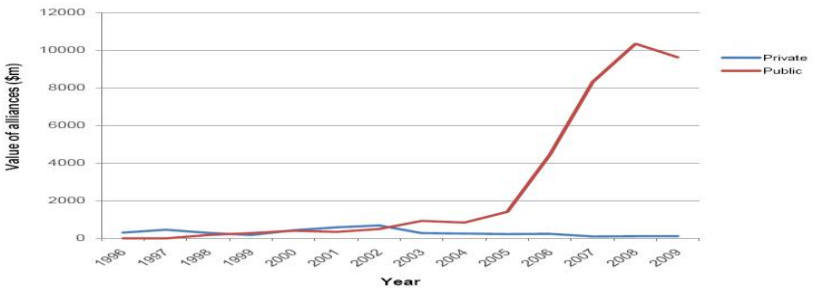


Figure 2.4: The use of alliancing in public and private sectors [4]

The source data for 'private' in Figure 2.4 has been adjusted to reflect two major private sector projects that have been delayed or cancelled since the information was collected.

Features of Alliance Contracts

The key drivers in relation to alliance contracts are based on relationship contracting, rather than the parties having their separate contractual rights based on their original commercial bargain. the parties agree to work cooperatively, on an open book basis, with commercial incentives (painshare/gainshare) based on project outcomes, controlled by a (joint, senior) project alliance board and alliance management team, and on a "no dispute" basis. The substantive aim is for a win-win (or lose-lose) project outcome.
Alliance contracts, typically, have the following features:

1. work sharing according to "best person for the job" selection criteria
2. management by alliance board/alliance management team
3. open book contracting
4. commercial risk/reward incentives based on project outcomes
5. no dispute

Thomson[4], in 1997, set out the following *points to consider in relation to a development/construction contract, including:*

- *defining direct costs*
- *agreeing overheads*
- *agreeing forecast costs*
- *agreeing risk/reward regime*
- *agreeing key performance indicators*
- *audit provisions (open-book nature of alliancing)*
- *consequential loss: limitation of liability*
- *"no dispute"*
- *design (especially state of completion)*
- *variations*
- *extensions of time*
- *force majeure*

[3] See, for example, the listing of research in Clifton, C., Duffield, C., Tang, W., McMullan, J., Beck, P. & Morgan, P., 2002 (updated A Vaccari 2009), "Alliance Contracting – A Resource and Research Bibliography", Department of Civil and Environmental Engineering Research Report RR/091/02. The University of Melbourne.
[4] See note 3 above.

- *remedial work and defects liability*
- *insurances and indemnities*
- *dispute resolution*
- *termination*

Those commercial checklist items are still relevant. Modern alliance contracts typically include provisions as follows:

- Project Objectives/Mission
- Project Alliance Principles/Charter
- Project Alliance Board
- Project Alliance Management Team
- Performance of the Work
- Payment
- Variation to TOC
- Extension of time
- Performance Payments: Painshare/Gainshare
- Insurances
- Securities
- Indemnities/Limitation of Liability
- Intellectual Property
- Confidentiality
- No Dispute/Resolution of Internal Disputes

Separately, the public sector procurement methods have been driven progressively by pre-contract requirements of government, typically including;

1. preparation of the Business Case
2. tender selection, generally on non-price criteria
3. joint development by the Owner and the preferred Non-Owner Participants (NOP) of the Target Outturn Cost (TOC)[5]
4. execution of Project Alliance Agreement

Ultimately, the parties will each derive a higher return depending upon the Actual Outturn Cost (AOC) relative to the TOC, and the actual completion date relative to the Project Schedule.

The documents and processes, correctly, vary project to project, and evolve with time. In particular, major projects have tended progressively towards more carve-outs from the work to be performed under the alliance provisions. It seems, however, that the key features of alliance contracts have not moved in any substantive way over the last 20 years or so[6].

Future improvements in alliance contracts

The key area in which alliance contracts are least attractive as a project delivery tool is price certainty/value for money (VfM).

Duffield et al, in their *In Pursuit of Additional Value*[7] make a number of key findings, including :

1. *Business cases often did not clearly define the project VfM proposition to the rigour required for investment decision making.*
2. *Generally NOPs have a strong preference for alliancing over other traditional delivery methods. Additionally, NOPs have a strong preference for non-price selection approach over price selection approach.*
3. *Often physical works commenced prior to finalising the commercial arrangements with the NOPs.*

[5] On some projects, the owner has proceeded to TOC stage with 2 short-listed tenderers, seeking a price competitive benefit, then selecting between those tenderers on predominantly price criteria.
[6] The fact that the substantive features of alliance contracts have not changed over that period is , perhaps, a positive indication in relation to user satisfaction?
[7] See note 5 above.

4. *In general the agreed (initial) TOC was higher than the business case cost estimate. The average increase was of the order of 35-45%.*
5. *A variety of commercial terms and conditions were found in the PAAs. In particular:*
   - *NOP corporate overhead and profit: Generally fixed upon agreement of the TOC, often variable as a percentage of actual costs.*
   - *No blame clause: Generally unconditional; little indication of modified clauses.*
   - *Dispute resolution: Generally silent; little indication of express provisions for resolution beyond the Alliance Leadership Team (ALT) (outside the alliance).*
   - *Incentive/penalty arrangements on time: Generally included; often not.*
   - *Owner reserved powers: Often reserved powers stated; sometimes not.*
   - *Performance security by NOPs: Little indication that security was required; generally not.*
6. *In general, Owner representatives (regardless of approach to selecting NOPs) rated their alliance's performance in all areas of non-price objectives as above expectations or game breaking.*
7. *The project's physical works were able to be commenced many months in advance of what would have been possible using traditional delivery methods (as noted elsewhere) leading to a commensurate earlier completion date.*
8. *The majority of projects met the Owners' target completion dates as set out in the business case.*
9. *There were no indications of any disputes between the Owner and the NOPs that needed to be resolved outside the alliance.*
10. *In general there was an increase from agreed (initial) TOC to adjusted (final) TOC. The average increase was of the order of 5-10%.*
11. *In general, the AOC was less than the adjusted (final) TOC. The average saving was of the order of 0.5%.*

Duffield et al conclude, among other things, that:

> *....As a collaborative delivery method,* ***alliancing has demonstrated its ability to avoid disputes, improve non-cost outcomes and commence projects earlier*** *than by traditional methods. .....*

but that:

> *To extract the optimum VfM from alliancing,* ***changes must be made at both the alliance and whole of government levels****. ......*

This is surely the key issue for alliance contracting in Australia today. There is little doubt that public sector owners choose alliance contracting as a valid project delivery model on a substantial (vast) number and contract value of projects today.

The drivers for this selection by public sector owners seems obvious:
1. early commencement of projects (often, before clear technical and commercial details have been finally resolved);
2. the ability to promote non-cost objectives highly valued by the public sector (eg environmental values, community stakeholder values, …..);
3. no disputes.

Despite these attributes, it is also clear that public sector owners are driven by public interests committed to improving the value for money proposition (this can be seen by the substantial number of Guides/studies published by various state government Departments of Treasury around Australia[8]).

Improving VfM will be the next challenge for alliance contracting in Australia. Perhaps improved VfM is to be obtained from any further enhancements/improvements that might be dragged out of the following types of area, already highly advanced:

[8] See, for example, the following, cited in *In Pursuit of Additional Value*: Department of Treasury and Finance, Victoria, 2006. Project Alliancing Practitioners'Guide. State Government of Victoria; Department of Treasury and Finance, Victoria, 2008. Investment Lifecycle Guidelines. State Government of Victoria; Department of Treasury and Finance – Commercial Division, Victoria, 2009, Guidance Note No. 1 – Language in Alliance Contracting: A Short Analysis of Common Terminology. Guidance Note No. 2 – Insurance in Alliance Contracting: Selling Insurable Risks. Guidance Note No 4: The reporting of VfM outcomes in alliance contracting. State Government of Victoria; Department of Treasury and Finance, Victoria, 2009. Good Practice Guidelines: Developing a State Purchase Contract Business Case. State Government of Victoria; Department of Treasury and Finance, Western Australia, 2002. Partnerships for Growth, Policies and Guidelines for Public Private Partnerships in Western Australia. ISBN 0 7307 4507 4. Government of Western Australia; Department of Treasury and Finance, Western Australia, 2009. Review of Alliance Contracting (Draft). Government of Western Australia

- competitive tendering up to TOC stage
- project alliance board/alliance management team methods
- enhanced painshare/gainshare models

1.7 INCENTIVISED TARGET COST CONTRACT

Since around 2020, the Victorian government has been using Incentivised Target Cost (ITC) on major transport infrastructure projects, including on design and construct phase of the $17 billion North East Link Project, and recently on the Suburban Rail Loop project tunnelling package.

The ITC model incorporates key features alliance contracting and design and construct contracting. The Contractor is reimbursed all costs incurred (with some carve-outs), plus margin, adjusted to a small extent based on the Target Outturn Coast relative to the Actual Outturn Cost. The Contractor is liable for late completion, and for achieving the specified quality and fitness for purpose.

1.8 BUILD OWN OPERATE PROJECTS ("BOOT"/"PPP")

Nature of BOOT Projects

BOOT (Build/Own/Operate/Transfer) projects (in recent years, often referred to in Australia as "PPP" projects, ie Public Private Partnership) are public infrastructure projects which employ a particular form of structured financing with funding provided by private sector.

Between 1989 and 2015 there were approximately 135 PPP projects in Australia. The lead time of a project is very long, and associated up-front costs are significant. Further, there are a number of complex issues which have yet to be resolved by any of the infrastructure projects settled to date. Such projects are complex by virtue of the number of parties involved and the corresponding number of contracts, which must all interlock, and the long times over which those contracts are to apply. Furthermore, each party is dependent upon the performance of not only its counterpart, but also the performance of all parties to the project. BOOT projects are generally structured on a project basis requiring all parties to share the risks of the project. Project risk sharing is necessary because the sponsor, a joint venture of one sort or another, will have a limited worth being substantially less than the aggregate net worth of the equity parties.

In a BOOT arrangement, the private sector designs and builds the infrastructure, finances its construction and owns, operates and maintains it over a period, often as long as 20 or 30 years ("concession period").

Traditionally, such projects provide for the infrastructure to be transferred to the government at the end of the concession period. (in Australia, primarily for reasons related to the borrowing powers of states, the transfer obligation is omitted).

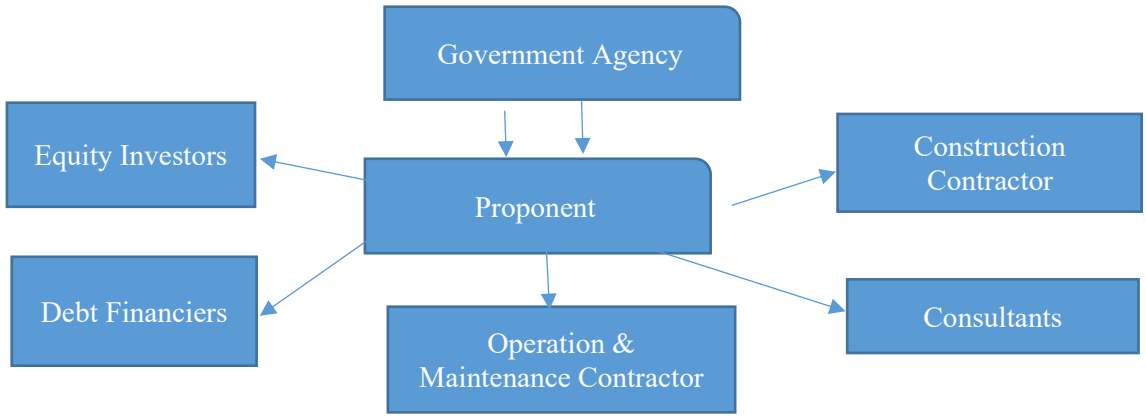
BOOT is a type of project financing. The hallmarks of project financing are:

1. The lenders (debt financiers) to the project look primarily at the earnings of the project as the source from which loan repayments will be made. Their credit assessment is based on the project, not on the credit worthiness of the borrowing entity.
2. The security taken by the lenders is largely confined to the project assets. As such, project financing is often referred to as "limited recourse" financing because lenders are given only a limited recourse against the borrower.

The risks in the project are negotiated between the various parties; each risk is usually assumed by the party which can most efficiently and cost-effectively control or handle it. Once the project's risks are identified, the likelihood of their occurrence assessed and their impact on the project determined, the sponsor must allocate those risks. Briefly, its options are to absorb the risk, lay off the risk with third parties, such as insurers, or allocate the risk among contractors and lenders. The sponsor will be acting, more often than not, on behalf of a sponsor at a time when the equity participants are unknown. Nevertheless, each of the participants in the project must be satisfied with the risk allocation, the creditworthiness of the risk taker and the reward that flows to the party taking the risk. In this respect, each party takes a quasi equity risk in the project.

Structure of BOOT Projects

The diagram below shows a typical BOOT structure.



Parties to BOOT project

There are a number of major parties to any BOOT project, all of whom have particular reasons to be involved in the project. The contractual arrangements between those parties, and the allocation of risks, can be complex. The major parties to a BOOT project will usually include:

1. Government Agency

The government agency (usually a government department or statutory authority) will typically:

1. grant to the sponsor the "concession" to build, own and operate the project
2. grant a long term lease of, or sell, the site to the sponsor
3. often acquire most or all of the service provided by the project

The government's co-operation is critical in large projects. It may be required to assist in obtaining the necessary approvals, authorisations and consents for the construction and operation of the project. It may also be required to provide comfort that the agency acquiring services from the facility will be in a position to honour its financial obligations. The government agency is normally the primary party. It will usually initiate the project, conduct the tendering process and evaluation of tenderers, and will grant the sponsor the concession, and where necessary, the offtake agreement. The power of a government agency to enter into the documentation associated with an infrastructure project and perform its obligations thereunder, and the capacity in which that body enters the documents (agent of the Crown or otherwise) is a critical issue.

2. Sponsor/Proponent

The sponsor will typically:

1. procure the concession from the government agency
2. raise equity finance for the project
3. raise debt finance for the project
4. enter into a design and construction contract with the design and construction contractor to design and construct the project
5. enter into an operation and maintenance contract with the operation and maintenance contractor to operate and maintain the project
6. engage consultants for the project
7. enter into a site lease or purchase contract for the site
8. (potentially) at the end of the concession period, transfer the project to the government agency

The sponsor is the party, usually a consortium of interested groups (typically including a construction group, an operator, a financing institution, and other various groups) which, in response to the invitation by the Government Department, prepares the proposal to construct, operate, and finance, the particular project. The sponsor may take the form of a company, a partnership, a limited partnership, a unit trust or an unincorporated joint venture. The investors in the sponsor are often referred to as the "equity investors" or the "equity providers". It is not unusual for equity investment to be approximately 20% of the cost of the project. Equity funds are, however, expensive compared to the cost of debt. An equity investor may require a return of 20%

to 25% in today's market to compensate it for assuming the major risks inherent in an infrastructure project. As a result it may be cost-efficient for equity to be much less than 20% of the project cost. The sponsor may be a company, partnership, a limited partnership, a unit trust, an unincorporated joint venture or a combination of one or more.

3. Construction Contractor

The construction company may also be one of the sponsors. It will take construction and completion risks, that is, the risk of completing the project on time, within budget and to specifications. These can be sizeable risks and the lenders will wish to see a construction company with a balance sheet of sufficient size and strength with access to capital that gives real substance to its completion guarantee. Often the general design of the infrastructure is dictated by the experienced utility. The construction risk is then taken by the construction company. Further, depending upon the nature of the infrastructure, the commissioning risk is often allocated to the construction company. The sponsor will aim to require the construction company to enter into a fixed price fixed time construction contract. However, this is rarely fully achieved, as there are normally some cost or timing issues which are not taken by the construction company which can lead to variations in price or timing.

4. Operation and Maintenance Contractor

The operator will be expected to sign a long term contract with the sponsor for the operation and maintenance of the facility. Again the operator may also inject equity into the project. There has not been a shortage of operators, mainly from offshore, for proposed infrastructure projects. This probably has a lot to do with the fact that operators tend to accept little risk in the form of up-front capital or expenditure. An operator simply anticipates making a profit from operating the infrastructure more efficiently than an equivalent government run project.

5. Debt Financiers

In a large project there is likely to be a syndicate of banks providing the debt funds to the sponsor. The banks will require a first security over the infrastructure created. The same or different banks will often provide a stand-by loan facility for any cost overruns not covered by the construction contract. As the financing of BOO(T) structure projects is a form of project finance, debt financiers will undertake a review of all core project documents to assess the allocation of risks and how that allocation impacts upon their credit approval. There has been some difficulty in attracting debt financiers to infrastructure projects, mainly because of the long term nature of the repayment of the bank debt, which may have a repayment term of up to 20 years, and the large number of infrastructure projects currently in the market place. Debt financiers have traditionally seen themselves as short term financiers, as evidenced by the fact that there is little long term debt in Australia. Accordingly, debt financiers are only comfortable financing the construction phase of an infrastructure project, provided they have a take out for the long term repayment phase of 15 years or more. The size of the debt required for many infrastructure projects may also limit the number of willing financiers. Furthermore, tax exempt infrastructure bonds are only available to limited types of infrastructure. For example, infrastructure bonds are not available to water and heath projects but are available to land transport, seaport and electricity generation.

6. Equity Investors

It is always necessary to ensure that proposed investors in an infrastructure project have sufficient powers to enter into the relevant contracts and perform their obligations under those contracts. Two examples where powers must be carefully reviewed are life insurance companies and trustees of superannuation funds.

7. Other Parties

Other parties such as insurers, equipment suppliers and engineering and design consultants will also be involved. Other parties are involved in an infrastructure project.

2. REAL-TIME MANAGEMENT OF PROJECTS

2.1 INFORMATION MANAGEMENT TRENDS

The tools to monitor and thereby manage projects are expanding exponentially.

For example:

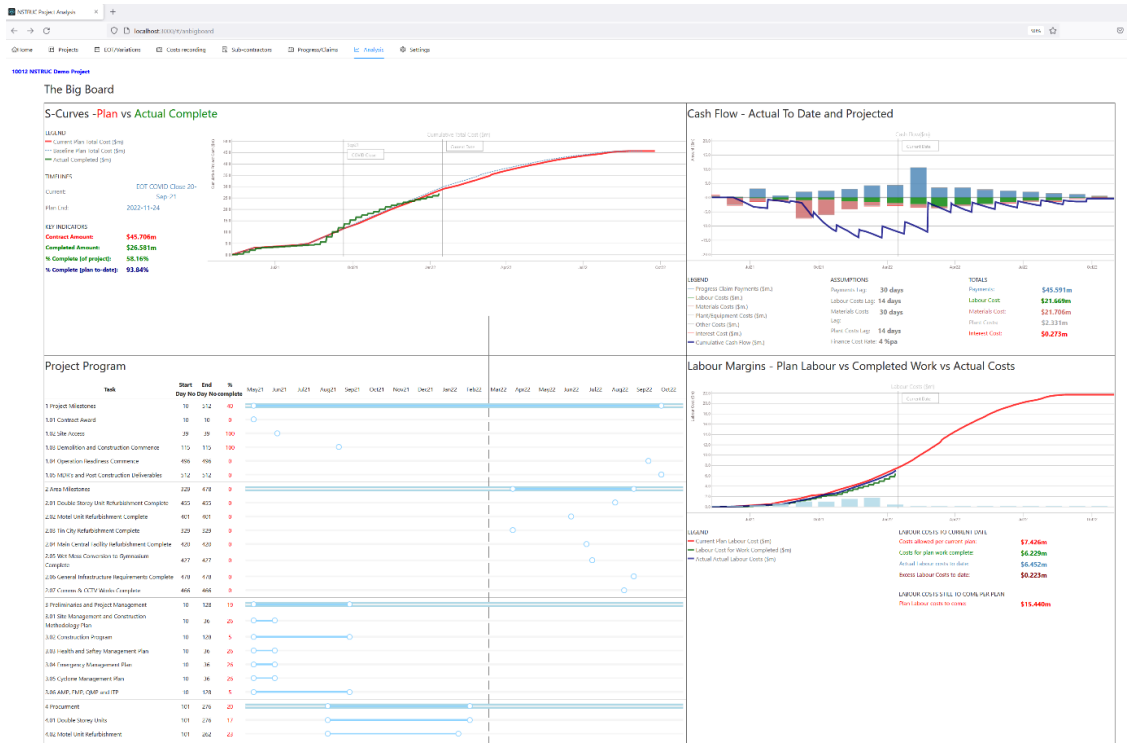


Figure 2.1 'The Big Board' graphic courtesy of NSTRUC.it

The critical advantages of automated, accurate, detailed, real-time project data collection, presentation and analysis include:

(a) Information in real-time:
The multiple data collection methods include some data that are, in fact, real-time data (eg payments made or received can be tracked instantly from bank account data, materials ordered or delivered can be tracked from Purchase Order email data, and from site entry barcode inventory recording, personnel on site can be tracked by GPS ID card data, construction plant operations can be tracked by GPS equipment operational data, …..).

Separately, though requiring extrapolation assumptions, other data, traditionally prepared after the event (eg construction progress, construction on-site costs, …) can be (albeit virtual) presented in real-time by extrapolating (eg daily costs being recorded as a combination of real recorded costs to a point, then extrapolated by assuming, for example, that the next day's costs will match the previous day's costs, and progressively updating as real costs are obtained).

(b) Common operating platform:
The extended circulation of common, real-time, data to all interested parties (eg principal, contractor, financiers, consultants, ….) is, on its own, a quantum leap in project information utility, ie the mere non-necessity of each party recording information, and the fact that the information is undisputed between the parties, is a further quantum advance.

(c) Removal of human data 'gatekeeper' influence:
Traditionally, tracking project progress was done manually (e.g. someone recording how much track was laid on a clipboard at the end of each day). That manual process is open to human error; or even subjective interpretation and presentation of statuses and progress.

Automated recording processes can reduce the chance of error or subjectivity (e.g. measuring track laid with GPS-connected tools).

The removal of the human "gatekeeper" effect of data production (ie individuals recording/circulating, only positive data and/or downplaying negative data, making the data less accurate) improves the value of the data.

(d) Data for its real purpose – management of the project (rather than data collection for its own sake):
The real purpose of collecting, presenting, and analysing project data, is to enable management of the project. Real-time data presentation, circulated to achieve a common data platform to all project stakeholders, created automatically without influence from human gatekeepers, allows the data to be used for its real purpose, the management of the project.

For example:

(a) Where the data shows that certain parts of the project (eg the design preparation, or the heavy plant procurement, or the materials delivery, or the progress of particular trade work), is lagging behind the tender program, that particular work can be addressed (eg further resourced, costed, removed from the contract and allocated to new parties).

(b) Where the data shows that the extrapolated cost of certain parts of the project (eg the design preparation costs, or the heavy plant costs, or the materials costs, or the costs of particular trade work), is over-running the tender costs, that particular work can be addressed (eg further resourced, costed, removed from the contract and allocated to new parties).

(c) Where the data shows that certain requirements of the project (eg the design preparation, or the heavy plant, or the materials, or particular trade work), is not being procured as planned at tender time, those particular requirements can be addressed (eg further resourced, costed, removed from the contract and allocated to new parties).

(d) Where the data shows a time or cost over-run from the tender program or cost, that delay and/or costs can be addressed early.

2.2 MANAGING PROJECTS: PLANNED WORK AGAINST ACTUAL COMPLETED WORK

The steps in establishment and execution of a project tracking process could be described as follows:

Scope of work: (As described in following sections) the required work is described and communicated to prospective construction contractors. From those descriptions and definitions, supported with site visits and discussions and responses to queries, those tendering contractors assess the work components that will be required to deliver that project.

Estimating: From the broad scope definitions, detailed line-by-line estimates are developed, covering requirements for labour, materials, equipment and plant, management, and other miscellaneous cost items.

Resourcing: Plans are formed regarding the types of labour resources required, and which providers might be used (the contractors own resources are commonly supplemented with sub-contractor resources).

Scheduling (the 'Program'): Derived from the detailed estimates, and labour types, time schedules are drawn up (typically in the form of *Gantt Charts,* often produced with widely-used system tools like *Microsoft Project,* or *Primavera*). The plans allow for inter-dependencies of the scope work components, and the labour resource deployments required to deliver those components. The schedule produced

represents the project 'Program', identifying and communicating when tasks are planned to be worked and completed.
The Program is subject to change from time-to-time, when circumstances give rise to Extensions of Time and/or Cost Variations.

Visualising the Schedule with S-Curves: The individual time-based work items, represented as individual task lines on the Gantt Chart, comprise substantial data detail: labour types and cost rates, estimated labour amounts (as hours or days of work required), expected crew sizes, lists of materials by types and quantities, equipment/plant required, management effort associated with the task, other miscellaneous costs.

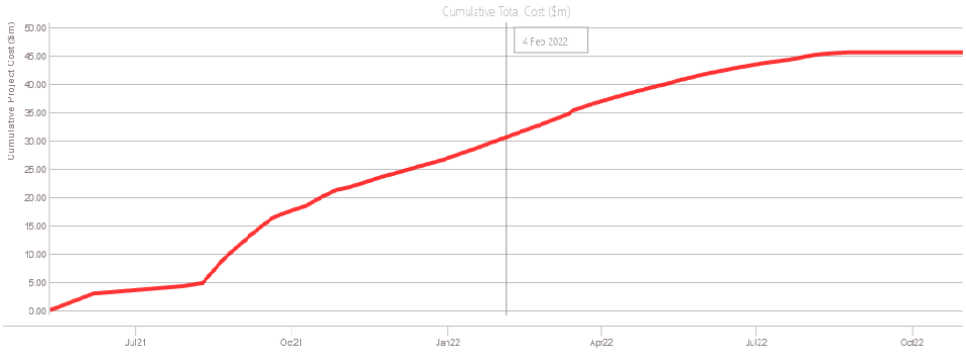


Figure 2.2 'S-Curve' graphic courtesy of NSTRUC.it

The S-Curve combines the individual time-scheduled costs, splits them into day-by-day arrays, and then accumulates those to produce the time-based depictions known as S-Curves (the 'S' shape because projects typically start slow, progress more solidly through the main/core project phases, and commonly take a while at the end to finalise.)

Tracking Completion: As the project progresses, each task on the project Program is updated with a *Percent Complete.*

Applying the task-specific percentages complete to the cost components incorporated into each task item, produces an array of 'Çompleted Work' costs, by day, allowing the especially useful indicator of *Planned vs Completed Work* – the Plan is the red line, the Completed is the green line:

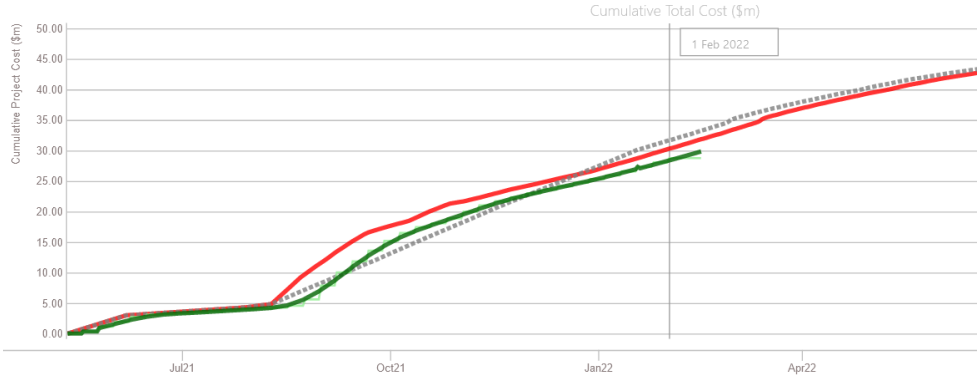


Figure 2.3 'Plan vs Complete' graphic courtesy of NSTRUC.it

Ideally the measure of 'Completed' work is current to the present moment, but invariably reporting activities lag or are delayed. For management purposes though, a curve-fitted extrapolated measure will likely provide a good indication of current status [as in the sample graphic above, where the 'Completed' measure is extrapolated even past the current moment].

2.3 EXAMPLES OF FURTHER ANALYTIC VIEWS

Cash Flow projection: tracks ongoing costs against payment claims, allowing for time lags applying to each item type, producing 'net cash flow' – this leads to the moving cumulative cash flow, day-by-day, required to finance a project, and from that [by applying interest/financing cost rates] the derived financing cost for a project:

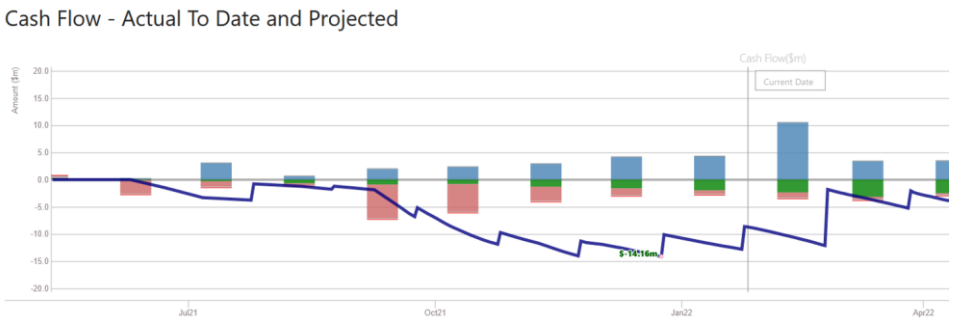


Figure 2.4 'Cash Flow Model' graphic courtesy of NSTRUC.it

Profit/loss by cost category: for example, by comparing the calculated labour costs in Completed Work, against actual labour costs for that same work to date – a profit or loss on labour is derived. Similar calculations can be applied to the other cost categories.

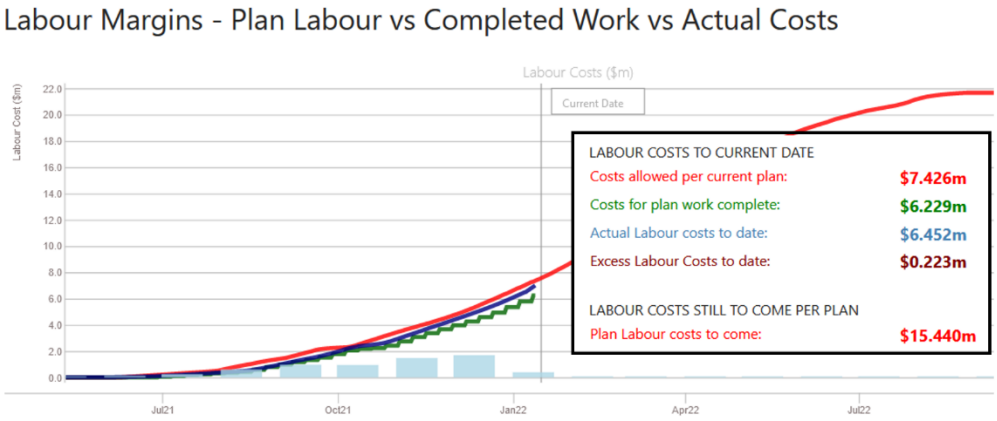


Figure 2.5 'Labour Margins' graphic courtesy of NSTRUC.it

Sub-contractor views: when task lines in the program are 'allocated' to sub-contractors, the calculations and views described above can be filtered separately for each of the sub-contractors.

I predict that in very short time, all projects, not merely the very large projects, will require, within the project documents, that prescribed data is to be maintained, (ideally, by independent data teams with access to the project records), and circulated to prescribed project stakeholders, for the purpose of monitoring, and management, of the project.

3. DESIGN/CONSTRUCT/OPERATE/MAINTAIN CONTRACTS

3.1 DESIGN BRIEF

The design brief is a document which is attached to the Design & Construct Contract. That document describes the works which are to be constructed for the Contract Sum.

The design brief is a technical document which includes some or all of the following:
1. schematic drawings of the proposal;
2. general specifications of the proposal and performance criteria for the works when complete;
3. site information;
4. any other technical details which impinge on the Works which are to be constructed.

The preparation of the design brief is a matter for the Principal. Usually that function will be performed by the Principal's design consultants. The design brief is not intended to be a detailed design, merely that it is sufficiently detailed to express exactly what it is that is to be designed and constructed by the Design & Construct Contractor.

The Design & Construct Contract obliges the Design & Construct Contractor to produce a detailed design, to comply with the requirements expressed in the design brief, and to obtain the approval of the Principal (usually the Principal's design consultants who prepared the design brief) prior to commencing construction. Claims usually arise, at this point, between the Principal (on the basis that the detailed design, as produced, is low quality, or does not adequately perform the function which is described in the design brief) and the Contractor. It is critical, therefore, for the design brief to be adequate in describing the works which are to be constructed and the functions which they are to perform.

The types of documents/technical information which might be expected on a civil engineering project would include any or all of the following:
- site information
- demographic information
- civil engineering quality/quantity inputs
- preferred (or permitted) treatment methods
- output criteria
- compliance with Codes/Standards

The information to be included may seem, at first glance, to be reducing the design input which was being hoped for from the design and construct contractor. The level of information provided to, and restrictions placed upon, will vary depending on the project. There will always be a minimum level of specification which will be necessary from, and in fact should be desired by, the Principal. Further, in some cases, there will be political restraints on a particular project.

This type of item is, contractually, necessary to be included in the design brief.

3.2 CHOICE OF DESIGN & CONSTRUCT

"Buildability"

The primary advantage of a design and construct contract is that it allows the construction contractor to bring his construction expertise into the design process, and thereby reduce the cost of construction. There is a view that the ability of the construction contractor to design the works with the convenience of construction in mind will result in cost savings to the Principal at the time of tender.

The design and construction contractor is able, in producing the detailed design, to incorporate certain design criteria which may suit the contractor for ease of construction. Accordingly, the tender price is likely to be lower (taking into account the cost of the actual design work) than where a Construction Contractor was pricing works which had been designed by others, with no regard to the "buildability" of that design.

It is yet to be seen whether this will be true in the civil engineering sector. It would have little relevance, for example, if the design complexities mean that construction contractors simply engage or joint venture with pure

design professionals. Further, the capacity of any contractor to incorporate notions of "buildability" into a particular project design is directly related to his previous experience in design and construction.

The incorporation of construction expertise in the design process is certain, it seems, to result in substantially more efficient designs and lower tender prices.

Single Point of Responsibility

There are a number of potential situations in traditional style contracts where the boundaries of the responsibility of the designer for design and the construction contractor for construction may become unclear.

There is potential for dispute as to responsibility, where the works as constructed fail to perform in accordance with the specifications (for example, leaking, cracking, discolouration ...). In such instances, the Construction Contractor might assert that the problems are a design flaw, whereas the designer might assert that the design was adequate but the works as constructed did not comply with that design. Where the Contractor has responsibility for both the design and construction, this problem does not arise.

There are several such potential areas of overlapping responsibility. For example:

- claims sometimes arise in traditional contracts (where the detailed design has been performed by the Principal prior to entering into the Contract) where the Contractor is asserting that the design cannot (or cannot conveniently) be constructed;
- where the Works, as constructed, do not perform the required function in accordance with the specifications, and/or are defective, a difficulty sometime arises where the Contractor is asserting that the problem is a design fault, and the designer is asserting that the problem is a construction fault;
- claims sometimes arise where the construction contractor is delayed by the designer during the construction phase (for example, in waiting for asserted errors or ambiguities in the design documents to be resolved).

In each of those instances, the Principal would be faced with the designer and the construction contractor blaming each other and denying liability to the Principal. Contractors often assert that the Principal and/or the Principal's design consultants have failed to take into account whether or not the works as designed by the Principal are able to be built, and whether construction cost savings could have been achieved if the design were other than as produced at the time of tender. Usually such claims do not arise until after the execution of the Construction Contract (because they were not perceived until that time).

Where the Design & Construct Contractor has responsibility to produce the detailed design, this type of claim will not arise.

Perceived fast tracking

There is a view that a Design & Construct Contract increases the possibility for "fast tracking" of the Project.

Some minor improvements in the programming of capital works can often be achieved through the Design & Construct model. The pre-tender phase is likely to be shorter than for a traditional contract (because it is only necessary to prepare the design brief, rather than the detailed design which would take substantially longer) prior to inviting tenders. The detailed design work is able to be performed after execution of the Design & Construct Contract, and during the early stages of construction, in a staged manner.

However, the timing benefits of this process may be illusory. At the point of commencing construction, at least the stage 1 building approval is required for the foundations. Accordingly, at that point, the design of the structural matters must be complete to the point where the foundation details are known. The detailed structural issues, and the architectural detail, may be able to be produced later to then obtain subsequent staged building approvals.

Further, in relation to capital works within the civil engineering sector, it is likely that the perceived advantages of fast tracking would be negligible for a number of reasons, eg:

- the lengthy lead times to acquire the site and/or obtain planning and EPA approvals make minor time improvements largely irrelevant;
- the complexity of obtaining political support for a particular project is, typically, a higher priority than minor time improvements, accordingly it is unlikely that an authority would be able, in any event, to

substantially shorten the overall project implementation, to the point where, again, there is little to be gained in minor time improvements.

It seems that "fast tracking" is a minor (maybe irrelevant) factor in this respect.

3.3 DESIGN RISK UNDER THE CONTRACT

The Contract Provisions

The allocation of risk under a Design & Construct Contract is slightly more complex than under a traditional contract. Under a traditional contract, the adequacy of the design (with all of the consequences which flow from inadequate design in respect of both the Works, and/or delay or additional costs caused to the Contractor) rests with the Principal. The Principal may or may not have adequate remedies against the original designer pursuant to their (separate) professional engagement agreement. This is likely to be a major factor (in favour of using the design/construct model) for civil engineering authorities.

Unlike the traditional contracts, the responsibility for detailed design rests with the Contractor. There are a number of risk areas for the Contractor in this role:
1. compliance with the design brief;
2. design warranties as to the adequacy of the design generally;
3. design approval by the relevant building authorities.

Each of these matters need to be properly addressed in the Design & Construct document.

Compliance with the Design Brief

The design obligation on the Contractor is to prepare the detailed design (in AS4300-1995, referred to as the *Design Documents*)in accordance with the requirements spelled out in the design brief (in AS4300-1995, referred to as the *Principal's Project Requirements*). For example, clause 1 of AS4300-1995 defines the *Principal's Project Requirements* as follows:

> *`Principal's Project Requirements' means the written summary or outline of the Principal's requirements for the Works described in the documents stated in Annexure Part A and -*
> *(a) shall include the stated purpose for which the Works are intended;*
> *(b) may include the Principal's design, timing and cost objectives for the Works; and*
> *c) where stated in Annexure Part A, shall include a Preliminary Design;*

The responsibility for adequacy of the design rests with the Principal for the design brief, and the Contractor for the detailed design.

For example, clause 8.1 of AS4300-1995 relates the obligation to pay for extra work due to discrepancies, to whether the discrepancy occurs in the Principal's Project Requirements (the Contractor gets a variation), or in the Design Documents (the Contractor does not get a variation) provides:

> ***8.1 Discrepancies***
> *……. If the direction causes the Contractor to incur more or less cost than the Contractor, having complied with Clause 4.1(c), could reasonably have anticipated at the time of tendering, then to the extent that such ambiguity or discrepancy is -*
> *(a) in the Principal's Project Requirements, the difference shall be valued under Clause 40.5; and*
> *(b) in the Design Documents or between the Design Documents and the Principal's Project Requirements, such ambiguity or discrepancy shall be at the Contractor's risk and the direction shall not entitle the Contractor to any extra payment or an extension of time.*

The responsibility for the Design Documents (detailed design) remains with the Contractor, to the extent that the Design Documents are always to accord with the design brief.

For example, clause 8.4 of AS4300-1995 provides:

> ***8.4 Supply of Documents by Contractor***
> *……. The Contractor shall supply to the Superintendent the documents and information required by the Superintendent and as required by the Contract, in a form satisfactory to the Superintendent and at those times …….., not less than 14 days before the work contained in those documents is commenced. A direction by the Superintendent to vary anything in the Design Documents shall be a variation to the work under the Contract only to the extent that the Design Documents, before such variation, complied, or would have complied, with the Principal's Project Requirements……*

In addition, there should be a process whereby the detailed design is ultimately submitted to the Principal for the Principal's approval prior to construction. Again, this is a risk area for the Contractor, and also for the Principal. This is the point at which major dispute as to the adequacy of the detailed design will usually arise. This area of risk is not present in a traditional contract.

In all other respects the risk allocation under a Design & Construct is similar to that which one might find under a traditional contract. It is a matter for the parties to negotiate the allocation of those risks.

Design Warranties

One critical inclusion in the Design & Construct Contract will usually be design warranties by the Contractor. For example, clause 4.1 of AS4300-1995 provides:

> ***4.1 Contractor's Warranties***
> *Without limiting the generality of Clause 3.1, the Contractor warrants to the Principal that the Contractor -*
> *(a) at all times shall be suitably qualified and experienced, and shall exercise due skill, care and diligence in the execution and completion of the work under the Contract;*
> *(b) subject to Clause 9, shall engage and retain the Consultants identified in the Contractor's tender and who are suitably qualified and experienced;*
> *(c) has examined and carefully checked any Preliminary Design included in the Principal's Project Requirements and that such Preliminary Design is suitable, appropriate and adequate for the purpose stated in the Principal's Project Requirements;*
> *(d) shall execute and complete the Contractor's Design Obligations and produce the Design Documents to accord with the Principal's Project Requirements and, if Clause 10 applies, accept the novation and retain the Consultants for any work the subject of a prior contract with the Principal; and*
> *(e) shall execute and complete the work under the Contract in accordance with the Design Documents so that the Works, when completed, shall -*
> *(i) be fit for their stated purpose; and*
> *(ii) comply with all the requirements of the Contract and all Legislative Requirements.*

There may be further warranties which might be added, on a project by project basis.

Independent Design Review by Principal?

A question arises for the Principal, in the Principal's review of the detailed design, as to how far that review should be taken. There is no contractual obligation on the Principal to review the design. For example, clause 8.4 of AS4300-1995 provides:

> *….. Neither the Principal nor the Superintendent shall be bound to review or comment upon the Design Documents or to check the Design Documents for errors, omissions or compliance with the requirements of the Contract. The Principal's or the Superintendent's receipt of, or review of, or comment on, the Design Documents and any other documents provided by the Contractor, shall not relieve the Contractor from responsibility for the Contractor's errors or omissions or departure from the Contractor's Design Obligations or other requirements of the Contract.*

On the one hand, the Principal has a contractual remedy against the Contractor if the detailed design is ultimately inadequate. On the other hand, the Principal has to review the detailed design in any event to ensure

that it complies with the design brief. It may be convenient, and prudent, therefore, to have the detailed design reviewed by independent professional consultants to ensure that the design is adequate prior to construction.

Contractually, presuming that the design and construct contractor is substantial, the Principal will be protected. In theory, therefore, independent design review is unnecessary. In practice, however, again, it seems that future civil engineering authorities will err on the side of independently reviewing designs prepared by the contractor, rather than let the contractor fall into error and then simply rely on the contract.

Under the Design & Construct Contract, the parties may or may not have a third person in the role of Superintendent/Architect. (This is equally true of construction only contracts.)

Often the person in the role of Superintendent under a traditional contract is also the designer. To the extent that the construction of the Works is not consistent with the original design philosophy, there is still some control able to be exercised over the construction Contractor. Under a Design & Construct Contract, there would still be a Superintendent, he is merely not the (detail) designer.

Potential for Design Dispute

The unique area for dispute arising in design & construct contracts, rather than traditional contracts, arises at the time of the proprietor's review of the contractor's detailed design. The Contract will usually provide that the Contractor must design the Works in accordance with the requirements of the design brief, to the satisfaction of the Principal or the Superintendent. For example, clause 8.4 of AS4300-1995 provides:

> *…. If the Contract provides that the Contractor must obtain the Superintendent's direction whether documents are suitable or are not suitable then, within the time stated in Annexure Part A or, if no time is stated, within 14 days after receipt of the documents, the Superintendent shall notify the Contractor that the documents are suitable or are not suitable. If the Superintendent notifies the Contractor that the documents are not suitable, the Superintendent shall give reasons why the documents are not suitable and the Contractor shall submit new or amended documents for the Superintendent's direction pursuant to this Clause 8.4….*

By definition, however, the design brief will be descriptive rather than detailed and will rely, in most instances, on defining function and performance criteria, rather than specific design elements. The Contractor will, naturally, be inclined to use lesser quality materials to reduce cost (the Contract Sum having already been agreed). The Principal, on the other hand, would usually have a higher impression of the degree of quality which was intended within the design brief. Accordingly, there is always a possibility (in practice, it seems a probability) of substantial dispute as to the exact materials and/or construction criteria which are required pursuant to the design brief. Further, in many instances, the dispute will be a technically esoteric dispute as to the likely performance of materials and/or workmanship which have not yet been incorporated into the Works.

To the extent that a proprietor does not adequately describe, in the design brief, the materials and/or workmanship which is to be performed under the Contract, there is potential for this type of dispute.

Potential Design Conflict/ Choice of Designer

A potential conflict for the contractor may arise in designing the Works under a Design & Construct Contract. The Contractor, having contracted to construct the Works for the Contract Sum, and to the extent not expressly prescribed within the design brief, will be required, as any designer must, to make a number of design decisions. On the one hand, the Contract Sum having been agreed, the Contractor will be inclined to keep costs to a minimum. On the other hand, the Contractor, also being the designer, would wish the materials and/or workmanship to result in a constructed product which performs adequately (at least in accordance with the design brief).

For example, in designing the Works, a Contractor might be inclined (remembering that the Contract Sum has already been agreed) to use lower quality materials (where they have not been specified in the design brief) irrespective of the design life of those materials. The Design & Construct Contractor may conclude that his contractual obligations cease at the end of the Defects Liability Period (this is not strictly correct, however

problems of proof may make this practically so) and, therefore, there is no reason for the Design & Construct Contractor to prefer more expensive materials to less expensive materials, provided that the less expensive materials would last at least to the end of that Defects Liability Period. The Principal, on the other hand, would prefer the more expensive materials in order to reduce long-term maintenance costs. (This is an example of the type of detail which should be included in the design brief.)

This issue would usually arise at the stage of approval, by the Principal, of the detailed design as prepared by the Contractor. The issue will turn on what has or has not been specified in the design brief. (There is some limited opportunity to assert implied terms, but difficulties in relation to the implication of terms, generally, limit the practical effect of implying terms into the Contract). The Contractor, in performing his design role, will have a conflict between the proper performance of that design role and the desire to keep costs to a minimum.

There will be difficulties in tender assessment. An authority would want tenderers to take the competing capital cost/operating cost issues into account when submitting their design proposals in their tenders. The assessment of such tenders will be more complex, the more flexible the design brief.

There will be further difficulties at the time of approval by the Principal of the contractor's detailed design. At that point, the Principal and the contractor (the Contract Sum already being agreed) will have competing interests in relation to the operating and maintenance costs of the Works as designed, the only reference being the matters set out in the design brief.

The design & construct tenderer, when bidding on the tender documents, will usually be required to disclose the identity of the detail designer. The Principal will usually wish to have some control over the choice of designer (whether the Principal has a particular preference or whether the Principal is merely interested to have a suitably competent designer). On complex projects, the Principal may require the engagement by the Contractor of a suitable firm of professional design consultants. In this manner, the Principal will have remedies against the Contractor in contract and/or against the professional consultants in negligence should the (detailed) design ultimately prove to be inadequate. (The Principal will also wish to ensure, in that instance, that the particular design consultants have adequate professional indemnity insurance.)

One possible method of addressing this issue is to require the successful Design & Construct Contractor to "novate" the Principal's existing professional services contract with the original designers. This form of "novation" contract has other consequences which should be considered, beyond this short discussion of Design & Construct. In any event, however, it is probably unnecessary for the Principal to insist on the choice of one particular firm of design consultants over another, especially if, in fact, that would result in higher tender prices.

The perceived disadvantage as to choice of designer, when weighed against issues of "buildability" and single point of design responsibility, may be illusory. There is a perceived disadvantage in having the administration of the construction contract performed by a person other than the original designer. It is correct that the original design philosophy is likely to be more adequately addressed by the original designer, in the administration of the construction contract, than by a subsequent, different, contract administrator. It may be, however, that, again, this disadvantage is illusory.

The likelihood is that, subject to the choice of a suitable person for the role, any professional contract administrator would have regard to the design philosophy in superintending the construction of the works.

3.4 DESIGN BUILD OPERATE CONTRACTS

The objectives for the delivery of a Design Build Operate (DBO) project are:

1. for the Contractor to design and construct the Works in accordance with the Specifications and deliver the Facility to the Principal by the Date for Commercial Operation for the Contract Price;
2. for the Principal to obtain control and ownership of the Facility on achieving Commercial Operation;
3. for the Contractor to operate, manage and maintain the Facility from Commercial Operation and to provide the Services at the Facility from Commercial Operation until the end of the Contract Term.

3.4.1 Key DBO Concepts

The key concepts likely to be included in a Design Build Operate contract might include:

Commercial Operation: that stage when practical/substantial completion of the Construction Works has been achieved, and the Operational Commissioning Tests have been passed.

Date for Commercial Operation: the date by which Commercial Operation of the Facility is to be achieved (as extended).

Date of Commercial Operation: the date on which Commercial Operation is achieved.

Delay Liquidated Damages: liquidated damages for delay payable by the Contractor to the Principal.

Design Development: an alteration, change, amendment, enhancement to or finalisation of the design of the Construction Works.

Endorsed Drawings and Specifications: the drawings and specifications prepared by the Contractor and, when approved by the Principal, endorsed by the Principal.

Equipment: equipment, machinery, apparatuses, materials, etc to be provided and incorporated in the Facility by the Contractor.

Facility: the facility to be designed, engineered, procured, constructed, equipped, commissioned and delivered by the Contractor .

Government Approval: an authorisation, consent, approval, licence, lease, ruling, permit, required from a Government Authority relating to the Construction Works, the Facility or to the execution, delivery or performance of the project.

IP Rights: intellectual property rights (present or future) including rights conferred under statute, common law and equity, including those in and in relation to inventions, patents, designs, copyright, registered and unregistered trade marks, trade names, brands, logos and get-up, names, circuit layouts and confidential information and all other rights resulting from intellectual activity in the industrial, scientific, literary or artistic fields, any patent, registered design, trademark or name, copyright or other protected right.

Major Subcontract: a subcontract under which a Major Subcontractor (above an agreed amount) provides services, Equipment costing more than some specified amount or involving certain critical components or services of the Construction Works.

Milestone: the dates of completion of phases of the Construction Works, the Operational Commissioning Tests and Commercial Operation.

Operation and Maintenance Manual: Facility instructions of the operation (including anticipated modes of operation during normal and emergency conditions) and maintenance of the Facility, produced by the Contractor.

Operational Commissioning Tests: tests and criteria described in the Contract, to be achieved as a pre-condition to commencing operation.

Training Works: training programs, courses and development of the technical and support systems to be carried out by the Principal or its subcontractors during the Construction Period.

3.4.2 DBO Contractor's Obligations

The Contractor's obligations should include the provision of all Equipment, and the performance of all works and services required for the design, engineering, procurement, construction, equipping, commissioning and delivery of the Facility and the completion of the Construction Works in accordance with the Contract.

The Contractor is usually required to do the following:

1. Completion of the Design and Construction Works
   The Contractor should perform all such work, including the required design and construction work, and supplying all Equipment, (including work and Equipment not specifically mentioned in the Contract but

which can be reasonably inferred from the Contract).

2. Execution of the Construction Works
The Contractor should execute the Construction Works in a professional, efficient, cost effective, safe and environmentally responsible manner and in accordance with the Endorsed Drawings and Specifications, the Specifications, all Government Approvals, and all applicable Laws.

3. Operation of facility
The Contractor should be required to operate and maintain the Facility, in accordance with the Contract, for the agreed operation period, commencing on the Date of Commencement of Operations, including, in accordance with the Contract requirements:
    a. keeping the Facility available;
    b. operating the Facility to specified performance levels;
    c. maintaining the Facility;
    d. reporting;
    e. delivering back the Facility at end of the Contract.

4. Government Approvals
The Contractor should acquire all Government Approvals which are necessary for the performance of the Construction Works.

5. Industrial Relations
The Contractor should be responsible for industrial relations connected with the performance of the Construction Works. It should keep the Principal's Representative informed of any disputes with or demands by its and the Subcontractors' workforce and any other circumstances which could result in industrial action affecting the normal working of the Site. The Contractor's and the Subcontractors' employees should be obliged to work in accordance with the relevant awards, Site agreements and the arrangements in place from time to time.

6. Services
The Contractor should obtain all services at or in the vicinity of the Site, which are necessary for the performance of the Construction Works and the ongoing operation of the Facility.

7. Operation and Maintenance Manual
The Contractor should prepare and submit for the approval of the Principal's Representative an Operation and Maintenance Manual, including a process for the following components:
    a. the engagement and training of appropriately qualified operations and maintenance personnel to provide services for the operation and maintenance of the Facility;
    b. the operation and maintenance of the Facility in an environmentally and aesthetically acceptable manner;
    c. all relevant instructions manuals and special directions from the relevant manufacturers of any Equipment and provision of such written instructions which are not available from such manufacturers;
    d. establishment of an inspection and maintenance system; and
    e. any reports to be provided by the Contractor.

8. "As executed" Drawings
The Contractor should provide to the Principal a complete, accurate and correct set of "as executed" drawings.

3.4.3 DBO Principal's Obligations

The Principal should be required to do the following:

1. Payment
The Principal should make timely payment to the Contractor of all amounts due under the Contract as and when due.

2. Access to and possession of Site
The Principal is responsible for acquiring and providing legal and physical possession of the Site and

providing possession and use of and access to all other areas reasonably required for the proper execution of the Construction Works, and to give possession/ access on or before the Commencement Date.

3. Site Information
   The Principal should make available to the Contractor prior to the Commencement Date such data on climatic, hydrological and geological conditions relating to the Site as should have been obtained from the Principal from investigations undertaken relevant to the Works and/or the Site.

4. Contract Price
   The Principal is to pay the Contract Price (usually a fixed lump sum for the Design & Construct Work , with some payment regime for the Operation Phase).

3.4.4 Key Commercial Issues in a DBO

The DBO contract will usually include terms, negotiated commercially, providing for the following:

Security
The Contractor should be required to provide the security specified in the Contract (this is usually a major commercial issue) in favour of the Principal at the times, and in the amount, manner and form specified in the Contract. The Contractor will usually be required to provide the security, at the date of execution of the Contract, in the form of an on demand, unconditional and irrevocable bank guarantee, to secure the due performance of the Contract, from a registered Australian bank under the Banking Act 1959 (Cth) (or an otherwise agreed institution).

Intellectual Property rights
The Contract should usually provides for the following:
1. all intellectual property rights created in relation to the project are vested in the Principal;
2. the Contractor agrees not to contest the title to IP Rights owned by the Principal;
3. the Principal will usually (it seems this is implied in any event) grant the Contractor a non-exclusive royalty-free non-transferable licence to use, reproduce, modify and adapt the Principal's IP Rights for the sole purpose of performing its obligations under the Contract;
4. the Contractor will usually be asked to warrant that the execution of the Contract should not infringe any IP Rights of any third party.

Subcontracts
Prior approval of the Principal's Representative should be required for Major Subcontracts, where the subcontract value exceeds an agreed amount. The Contract should impose the following restrictions on the Contractor when subcontracting:
1. The Contractor should only engage Subcontractors who are safe, environmentally responsible, careful, skilled, experienced, and competent in their respective disciplines.
2. The Contractor should provide to the Principal full particulars in writing of the Construction Works to be subcontracted and the name and address of the proposed Major Subcontractor, the proposed site for the subcontracted work, information establishing the financial, technical and personnel capacity (including details of previous experience and safety and environmental records) to successfully execute such subcontracted work.
3. The Contractor should ensure that the Major Subcontractors enter into a tripartite agreement, including the Principal, and subcontracts should include provisions that the Subcontractor undertakes to the Contractor obligations and liabilities which should enable the Contractor to discharge the Contractor's obligations and liabilities to the Principal under the terms of the Contract in respect of the subcontracted work, including:
   a. warranties given by the Contractor;
   b. indemnities given by the Contractor;
   c. a termination for convenience provision similar to that contained in the Contract (if any);
   d. provisions providing for and enabling the ultimate ownership by the Principal of all IP Rights;
   e. a warranty by Subcontractors undertaking fabrication work that they have reviewed the drawings provided by the Contractor and that such drawings should be suitable for the fabrication work proposed;
   f. provision that the Principal is able to enter the site upon which the Subcontractor is undertaking the subcontracted work; and
   g. upon the termination of the Contract or repudiation or abandonment of the Contract by the Contractor, if so directed by the Principal's Representative, undertakings that the Subcontractor

will provide to the Principal all designs, documents, materials and other things intended for incorporation in the Construction Works, and acquiesce in the assignment or novation to the Principal at the Principal's absolute discretion of the Contractor's interests in the Contract.

Design
The Contractor is responsible for the design of the Construction Works in accordance with the Specifications. The Contract should provide that the Contractor produce drawings and specifications for approval by the Principal, and, when approved by the Principal, endorsed by the Principal to become the Endorsed Drawings and Specifications. The Contractor is then required to construct the Works in accordance with the Endorsed Drawings and Specifications. The approval by the Principal of the Endorsed Drawings and Specifications does not affect the obligations of the Contractor under the Contract.

Procurement
The Contractor is to procure, and transport at its own risk and expense to the Site, the Equipment.

Quality assurance
The Contractor should establish, implement and maintain a quality assurance and control program to achieve the following:
1. that purchased Equipment, the Facility and all related documentation meet the requirements of the Contract;
2. that the quality of the Facility not be degraded during receiving, storing, transporting, handling, erection, installation, inspection and testing; and
3. that systems, Equipment and structures are fabricated, installed and erected in strict compliance with all applicable instructions, the Contract and the requirements of the Principal.

Commercial Acceptance
The Contractor is required to bring the Works to Commercial Acceptance by the Date for Commercial Acceptance.

Operational Commissioning
Upon Practical/Substantial Completion, the Contractor should be required to carry out Operational Commissioning Tests described in the Contract.

Manufacturer's warranties
The Contractor should obtain for the Principal, from the respective manufacturers, the best available and legally enforceable warranties for the Equipment, extending to, at least, the end of the Defects Liability Period, requiring the respective manufacturers at their expense to remove and replace Equipment which are defective.

Completion guarantee
The Contractor will be required to guarantee that it will achieve Commercial Operation of the Facility by the Date for Commercial Operation.

Delay Liquidated Damages
Where the Contractor fails to attain Commercial Operation of the Facility by the Date for Commercial Operation, the Contractor will be required to pay, to the Principal, Delay Liquidated Damages.

Defects Liability Period
The Contractor guarantees that the Facility or any part is free from defects in design and engineering, the Furniture and Fittings, the Equipment and the Construction Works. If, during the Defects Liability Period, any defect is found in the design and engineering, the Equipment or the Construction Works, the Contractor should, at such times as the Principal reasonably requires and in a manner which causes as little disruption to the operation of the Facility as reasonably possible, promptly and at its cost repair, replace or otherwise make good (as the Contractor may at its discretion determine) such defect as well as any damage to the Facility caused by such defect.

Transfer of ownership and risk
The Contract will usually provide that the ownership of the Equipment transfers to the Principal:
1. when the relevant Equipment is identified as being intended solely for incorporation, use or consumption in the Construction Works; or
2. where such Equipment cannot reasonably be so identified, at the time when it is incorporated, used or consumed in the Construction Works; or

3. in any event no later than payment of the relevant progress claim the value of which includes the Equipment.

Care of Construction Works
The Contractor is always made responsible for the care and custody of the Construction Works until the Date of Commercial Operation and is required to make good at its own cost any loss or damage that may occur to the Construction Works from any cause whatsoever prior to that date.

Insurance
The Contract should provide that the Contractor is to arrange from the Commencement Date, for the relevant periods, and amounts:
1. construction all risks insurance policy;
2. public liability policy covering legal liability to third parties for personal injury, or property damage;
3. professional indemnity;
4. workers' compensation;
5. other insurances (eg motor vehicle, marine, etc);

under policies containing terms , exclusions and excesses, approved by the Principal.

Other Terms
The DBO Contract will include terms (similar in most respects to construction contracts) in relation to:

Site conditions
Unforeseen conditions
Force majeure
Delay costs
Termination
Termination for the Principal’s convenience

4. THE SUPERINTENDENT

4.1 DUAL ROLE OF THE SUPERINTENDENT

The Superintendent is **not** a party to the contract; he is a person named in the contract by the two parties to the contract (the Principal and the Contractor) and given certain functions under that contract by those two parties.

The role of the Superintendent would usually include:
1. assessment of progress claims and issue of progress certificates
2. assessment of claims for extra payment for variations to the contract
3. assessment of claims for extension of time
4. assessment of quality of materials and workmanship in accordance with the contract documents
5. assessment of claims for extra payment (such as claims under the latent conditions provisions) under the Contract

Accordingly, though the Superintendent is usually appointed by and paid by the Principal (and may sometimes be the Principal's original design consultant), the Superintendent's role is principally to decide major issues of potential dispute under the Contract between the Principal and the Contractor.

In such contracts there is (at least) an implied term that the Superintendent will act fairly. There is a strong contractual argument that if the Superintendent does not act fairly towards the Contractor, this constitutes a breach of contract by the Principal.

Interestingly, in AS2124-1992, following on from AS2124-1986, clause 23 expressly provides that the Principal is to ensure that the Superintendent acts fairly at all times. This is unusual. Clause 23, in the 1992 edition and in the 1986 edition, imposes a **direct contractual obligation** on the Principal to **ensure** that the Superintendent acts in a manner consistent with honesty, fairness and reasonableness. (It also imposes a contractual warranty on the Principal that the Superintendent's measure of work, quantities or time is, itself, reasonable.)

AS2124-1992 Clause 23 provides:

> ***23. SUPERINTENDENT***
> *The Principal shall ensure that at all times there is a Superintendent and that in the exercise of the functions of the Superintendent under the Contract, the Superintendent -*
> *(a) acts honestly and fairly;*
> *(b) acts within the time prescribed under the Contract or where no time is prescribed, within a reasonable time; and*
> *(c) arrives at a reasonable measure or value of work, quantities or time.*
> …….

AS4000-1997 Clause 20 provides:

> ***20. SUPERINTENDENT***
> *The Principal shall ensure that at all times there is a Superintendent, and that the Superintendent fulfils all aspects of the role and functions reasonably and in good faith. Except where the Contract otherwise provides, the Superintendent may give a direction orally but shall as soon as practicable confirm it in writing. If the Contractor in writing requests the Superintendent to confirm an oral direction, the Contractor shall not be bound to comply with the direction until the Superintendent does so.*

The dual role of the Superintendent (on one hand he is retained and paid by the Principal, yet on the other hand he has a quasi-certifier role between the two parties to the contract) has been the subject of judicial comment.

The Institution of Engineers Australia Code of Ethics requires, in clause 5(b):

> *"....in our capacity as Superintendent administering a Contract, we must be impartial in our interpretation of the Contract..."*

The role of the Superintendent is complex. It requires substantial engineering skills, a sound understanding of the law of contract, and in particular the provisions of the particular project documents. The Superintendent has two

distinct roles under a traditional form of construction contract. On one hand he has a number of functions in which he acts, either expressly or impliedly, as the agent of the Principal. On the other hand, the two parties to the contract agree, at the time of entering into the Contract, that the Superintendent is to perform certain assessment/certifier functions under the Contract. Those functions are quite distinct.

In most instances, the Superintendent will be either an employee of the Principal (typically on major public sector contracts the Superintendent is a senior person from that public sector organisation) or a paid consultant of the Principal (usually, a senior engineer from a private engineering consulting firm). Accordingly, where there is a dispute under the Contract, the Contractor, if dissatisfied with the decision of the Superintendent, will **usually** assert that the Superintendent is biased in favour of the Principal.

The **dual** role of the Superintendent under such construction contracts has been recognised by the Courts. The leading case in this area is a decision of the New South Wales Supreme Court (Macfarlan J) in *Perini Corporation v. Commonwealth of Australia* [1969] 2 NSWR 530. In the *Perini* case, Perini Corporation had contracted with the Department of the Postmaster-General to construct the Redfern Mail Exchange. During the project, the Contractor claimed a number of extensions of time, some of which were granted, some of which were refused, and some of which were granted but not to the full extent claimed. As was common at the time, the work was undertaken on behalf of the Commonwealth of Australia by the Department of Works. The Superintendent under the Contract was the Director of Works. The Court had to consider the role of the Superintendent. The Contractor claimed that the Director of Works was obliged to but had not exercised his own discretion in considering whether there was an entitlement to an extension of time, and that, in fact, the Director had been guided by "Departmental policies". Effectively, the Contractor was saying that the Director of Works had acted as a rubber stamp of the Principal.

The Court made the following observations in relation to the role of the Director of Works:

> *"The second matter on which I will speak generally concerns the position of the Director of Works. This gentleman is undoubtedly an important officer in the Commonwealth Public Service. Unlike other senior Commonwealth public servants, there is not any provision made by statute for his appointment or duties. However, his position appears to be fairly clear. At the head of the permanent administrative staff of the Department of Works is the Director-General of Works who is charged with the general supervision of the Department and its activities throughout the Commonwealth. In each State there is a Director of Works who, in relation to the State for which he is appointed, discharges the same general duties as the Director-General does for the Commonwealth...*
>
> *The fundamental basis upon which the plaintiff sought to litigate its case against the defendant was that the defendant was in breach of certain terms implied in the agreement... the plaintiff's argument was that in the discharge of the duties imposed upon him by clause 35, the Director of Works, with the encouragement and support of the defendant, acted in a manner that was outside his mandate."*

The Contractor argued that the Department was liable for damage suffered by it, in consequence of the error of the Director of Works, on three different bases:

1. the Department was **vicariously liable** for anything that the Director did wrongly;
2. the Director of Works, in relation to his functions under clause 35 was a **certifier** and, as such, the Department was obliged under the Contract to ensure that the Director performed his role as a certifier properly or, at least, was required to refrain from taking any action or course of conduct which would oblige or influence the Director to act otherwise than in accordance with his duties as certifier; and/or
3. the Director of Works was an **arbitrator** and, accordingly, was obliged to act judicially.

The Court concluded (without much trouble) that there was no basis for interpreting that the Director of Works was to act as an arbitrator (this was not pressed in the trial). The Court then considered the issue of vicarious liability and, in particular, the position of the Director of Works having regard to his public service obligations. In this respect the Court said, at page 536:

> *"In my opinion the cases make plain that throughout the period of performance of all these duties, the senior officer remains an employee of the government or semi-government body, but that in addition and while he continues as such an employee he becomes vested with duties which oblige him to act fairly and justly and with skill to both parties to the contract. The essence of such a relationship in my opinion is that the parties by the contract have agreed that this officer shall hold*

> *these dual functions and they have agreed to accept his opinion or certificate on the matters which he is required to decide... ".*

The Court then went on to consider the particular duties of the Director of Works, at page 536:

> *"It is now necessary to consider the duties of the Director of Works. He, of course, has not bound himself by contract with either the plaintiff or the defendant. The plaintiff and the defendant are the only parties to the agreement but in it they have agreed that the Director of Works shall have the powers and duties stated in it. Many of these powers and duties are administrative and supervisory in their character and are performed by the Director of Works as a servant and agent of the Commonwealth. I have already expressed the opinion that in respect of the duties imposed upon him by clause 35 of the general conditions that he is a certifier. The word "certifier" does not have an exact meaning but is used to describe a function which is somewhere between those of a servant and those of an arbitrator."*

In summary, the Court concluded:

1. the Director of Works was a certifier under the Contract and as such had certain duties imposed on him by the Contract;
2. the Director of Works had a discretion as to whether or not he would grant an extension of time;
3. in making his decision, the Director was entitled to consider departmental policy but would be acting wrongfully if he were to consider himself as controlled by departmental policy;
4. there was an implied term in the Contract that the Commonwealth would not interfere with the Director of Works' duties as certifier; and
5. there was an implied term of the contract that the Commonwealth would ensure that the Director of Works properly performed his duty as certifier.

This, it is suggested, is the current law on the status of the dual role of the Superintendent under a traditional form of construction contract.

4.2 FUNCTIONS OF THE SUPERINTENDENT

4.2.1 The Superintendent as assessor/certifier under the Contract

The Superintendent is appointed by both parties to the Contract to perform certain functions as assessor/certifier. Those functions will include, principally:

- certification of progress claims
- assessment of variations
- assessment of extensions of time
- assessment of quality of workmanship and materials
- assessment of claims under the Contract (for example, latent conditions claims)

The critical considerations in respect of these functions are as follows:

1. in his role as a certifier/assessor, the Superintendent has a duty to act fairly/impartially;
2. the Superintendent must exercise **this** role independently; and
3. the precise nature of this role will vary from case to case depending on the terms of the Contract.

With this background, we now turn to the primary functions of the Superintendent in his certifier/assessor role:

Progress Claims

In all traditional standard form contracts, the Contractor is required to periodically deliver, to the Superintendent, progress claims for payment under the Contract. The Superintendent is usually required to assess those progress claims (by reference to the degree of completeness **and** the quality of the materials and workmanship). The Superintendent must calculate the amount due, at that time, having regard to:

- work carried out by the Contractor in performance of the contract; and
- claims for breach of contract.

The Superintendent has to make more than a complex technical assessment. He is also be required to make a legal assessment of complex legal causes of action upon which a Contractor might base a claim for additional payment. (This process is referred to in more detail in Section 5.)

Variations

The Superintendent is required to regularly exercise legal judgments under the Contract in the authorisation and valuation of variations. There are two separate issues. The Contractor may assert from time to time that particular works which he has been required to perform (either in accordance with the contract documents, or alternatively pursuant to a direction of the Superintendent) constitute a Variation. The test applied by the Courts is, in substance, that particular work constitutes a variation if it is **work outside the Contract**, ie the works upon which the Contractor tendered/contracted, having regard to the terms of the Contract. The second complex area of assessment for the Superintendent in relation to variations is in the **valuation of variations**.

Extension of Time Claims

The assessment of claims for extension of time is extremely complex. Typically, under a traditional form of construction contract, the Contractor would be entitled to extensions of time in the following circumstances:

- where delays are caused by the Principal (for example, if the Principal fails to deliver the site on the agreed date, or the design drawings/specifications are wrong requiring further work to remedy the error);
- where delays are caused through events beyond the parties' control (for example, inclement weather or industrial strife).

The first task of the Superintendent in assessing claims for extension of time by the Contractor is to determine whether, having regard to the express terms of the contract, the Contractor is entitled to an extension of time at all. In each case, it will be a complex analysis for the Superintendent to determine whether an extension of time is due to the Contractor at all. The more complex calculation, however, comes in relation to the quantification of extensions of time. A delay might occur because of two days rain....but the effect of the two days rain may be to delay work commencing on the site for a further three days. Alternatively, a delay may occur to one part of the works which is non-critical to practical completion of the total project.

The Superintendent is required to assess claims for extension of time and grant such extensions as are due to the Contractor under the Contract. (A more detailed discussion of extensions of time is set out in Section 4.)

Quality

The parties define the works to be performed under the Contract, in the contract documents. Those documents consist, typically, of the drawings and specifications, but may also include, in certain circumstances, post-tender correspondence, and other technical descriptions of the proposed works. The parties, at the time of entering into the Contract, appoint the Superintendent to check the quality of materials and workmanship against the contract documents and to take such steps as are set out in the contract to effect the requisite quality standards. The Superintendent's role is, traditionally, to watch over the works, to give directions to remedy work which is not in accordance with the provisions of the contract, and where that direction is not complied with, to take the steps provided in the Contract to remove part of the work from the Contractor and to have that work remedied by others at the cost of the Contractor. (A more detailed discussion of quality issues is contained in Section 6.)

Administration of the Contract

The Superintendent administers the Contract by giving directions, which the Contractor is obliged to follow (subject to the Contractor's right to claim additional payment where the Superintendent errs by requiring the Contractor to perform work beyond the requirements of the Contract).

AS2124-1992 Clause 23 provides:

> *……. If, pursuant to a provision of the Contract enabling the Superintendent to give directions, the Superintendent gives a direction, the Contractor shall comply with the direction.*
> *In Clause 23 "direction" includes agreement, approval, authorisation, certificate, decision, demand, determination, explanation, instruction, notice, order, permission, rejection, request or requirement.*
> *Except where the Contract otherwise provides, a direction may be given orally but the Superintendent shall as soon as practicable confirm it in writing.*

If the Contractor in writing requests the Superintendent to confirm an oral direction, the Contractor shall not be bound to comply with the direction until the Superintendent confirms it in writing.

4.2.2 The Superintendent as agent of the Principal

The Superintendent is also required to act as the agent/adviser of the Principal in respect of certain (other) functions.

The Superintendent has a dual role. The Superintendent is required to act as a certifier/assessor. In performing that role there is, clearly emerging from the cases, an obligation to act fairly, impartially and **not** at the direction of one or other of the parties (usually the Principal). The respective roles of the Superintendent relate to different, mutually exclusive, functions.

There are a number of functions which the Superintendent acts as the agent/adviser of the Principal, including:
1. notification of successful and unsuccessful tenderers
2. arrangements for execution of contract documents
3. vetting of Contractors' insurances
4. vetting of security deposits
5. approvals and clearances by statutory authorities
6. advice on rate of progress and expenditure
7. recommendations on contractual actions to be taken by the Principal
8. management of site staff

In addition to the above, the JCC Standard Form Contracts set out, in clause 5.02, a listing of functions of the Architect when acting as the agent of the Principal (in addition to a similar listing of functions when acting as an assessor, valuer or certifier). That list of functions in which the Architect is to act as the agent of the Principal sets out the matters in relation to which the Architect should issue instructions, to the Contractor, principally:
1. performance of the works
2. variations
3. site conditions
4. nominated sub-contractors and suppliers
5. substitution of materials and workmanship
6. postponement of work
7. making good of defects in the works
8. the removal, re-execution, replacement of works executed by the Contractor

Each of these functions (the list is far more extensive than the items referred to above), are examples of the types of function upon which the Principal usually relies on its professional advisers for advice, before, during and after the performance of the works by the Contractor under the Contract.

In relation to this role, the Superintendent must:
1. comply with the instructions of the Principal (irrespective of whether those instructions are reasonable, fair or contrary to the interests of the Contractor); and
2. the Superintendent owes a duty of care to the Principal in the performance of those functions.

If the Superintendent fails to perform those functions in accordance with paragraphs (i) and (ii) above, the Superintendent may be liable to the Principal for breach of contract **and/or** in negligence.

4.3 LIABILITY OF THE SUPERINTENDENT

4.4.1 Liability to the Principal

The Superintendent is in a contractual relationship with the Principal to perform his functions (all of his functions whether as agent of the Principal or as an assessor/certifier under the construction contract). This liability will arise, potentially, both in contract and in tort. (See *Brickhill v. Cooke* [1984] 6 BCLRS 47 in which the New South Wales Supreme Court, Court of Appeal, held that a client could sue an engineer in tort as well as in contract.)

In many instances, there will be a written contract between the Principal and the Superintendent. Those terms of engagement may or may not include provisions relating to the services to be performed, the payment to be made in respect of those services, and, possibly, limitation of liability and extent of professional indemnity insurance cover. In other cases, there may be no written engagement. In that case the contractual obligation arises through the conduct of the parties in the Principal requesting the Superintendent to do certain work and the Superintendent being entitled to be paid a reasonable sum for those works. Where the Superintendent is an employee of the Principal, there will be an employment contract whether in writing or otherwise between the Principal and the Superintendent.

In addition to their contractual relationship, the Superintendent will owe the Principal a duty of care in the performance of his functions. Until 1974, there was a view that certifiers were somehow immune from liability (to anyone) in the performance of their certification functions. As late as 1973 this "immunity" was still thought to exist. In *Sutcliffe v. Thackrah*, the House of Lords considered the earlier cases, including *Arenson v. Arenson*, and held that there was no such immunity.

The Superintendent, therefore, in the performance of his functions under the Contract, both as agent of the Principal, and as an assessor/certifier under the Contract, is potentially liable to the Principal if he fails to perform the obligations either in accordance with the terms of his contract with the Principal, or alternatively, if he fails to perform his task to the requisite standard of care.

4.4.2 Liability to the Contractor

The Superintendent has no contractual relationship with the Contractor. Accordingly, to the extent that he may have potential liability to the Contractor at all it would only be in negligence. The Superintendent is not immune in tort in relation to his performance of his role as assessor/certifier. The Superintendent's potential liability to the Contractor, depends on whether he owes a duty of care to that Contractor in all the circumstances and whether, in the performance of those functions, he has performed those functions to the requisite degree of care and skill. On first principles, there seems little doubt that the Superintendent and the Contractor are in a sufficiently proximate relationship that the Superintendent ought to owe a duty of care to the Contractor

In *Junior Books v. Veitchi* which has been limited to its factual situation (nominated sub-contract heavily relied on for its expertise) the House of Lords concluded that a nominated sub-contractor (no contract with the owner) could owe a duty of care to an owner in relation to the construction of a tiled floor by the nominated subcontractor.

It seems that various parties likely to be involved on construction contracts, albeit that there is no contractual relationship between the particular parties, nevertheless have those other parties in mind when they are performing their particular roles on the project.

There are, however, obvious practical disincentives against bringing such a claim, in particular:

1. the Principal would usually be a better defendant for the Contractor where the conduct complained of is a failure by the Superintendent to perform his assessor/certifier role. (Although, conceivably, such an action against a Principal might be time-barred, yet an action in negligence against a Superintendent might still be available...);
2. in performing an assessor/certifier role, a subjective assessment is likely to involve exercise of discretion by professionals, accordingly it is unlikely to be the type of decision which would easily be established as having been negligent (although, again, one might conceive actions where, through perhaps mere inadvertence error had occurred...); and
3. the failure by a Contractor to explore his remedies through to arbitration/litigation (where the Superintendent's decision would be re-visited in any event) would usually be a complete answer to a claim in negligence against the Superintendent by the Contractor.

On balance, therefore, it seems that an action in negligence is available to a Contractor against the Superintendent but practical reasons make it unlikely that such an action would usually be pursued.

5. TIME UNDER THE CONTRACT

5.1. PRACTICAL COMPLETION

The obligation of the Contractor under the Contract is to bring the Works to practical completion by the Date for Practical Completion. "*Practical Completion*" has no meaning other than the meaning defined in a particular Contract. It is **not** a term of art. In all of the major standard form contracts in Australia, the definition of practical completion sets out the specific requirements that the Contractor must achieve.

AS2124-1992 Clause 1 provides:

> *"Practical Completion" is that stage in the execution of the work under the Contract when -*
> *(a) the Works are complete except for minor omissions and minor defects -*
> *(i) which do not prevent the Works from being reasonably capable of being used for their intended purpose; and*
> *(ii) which the Superintendent determines the Contractor has reasonable grounds for not promptly rectifying; and*
> *(iii) rectification of which will not prejudice the convenient use of the Works; and*
> *(b) those tests which are required by the Contract to be carried out and passed before the Works reach Practical Completion have been carried out and passed; and*
> *(c) documents and other information required under the Contract which, in the opinion of the Superintendent, are essential for the use, operation and maintenance of the Works have been supplied;*

AS4000-1997 Clause 1 provides:

> *"Practical Completion" ... is that stage in the carrying out and completion of WUC when:*
> *a) the Works are complete except for minor defects:*
> *i) which do not prevent the Works from being reasonably capable of being used for their stated purpose;*
> *ii) which the Superintendent determines the Contractor has reasonable grounds for not promptly rectifying; and*
> *iii) the rectification of which will not prejudice the convenient use of the Works;*
> *b) those tests which are required by the Contract to be carried out and passed before the Works reach practical completion have been carried out and passed; and*
> *c) documents and other information required under the Contract which, in the Superintendent's opinion, are essential for the use, operation and maintenance of the Works have been supplied;*

The usual elements of practical completion are the completion of the Works except for minor omissions and minor defects:

1. which do not prevent the works from being reasonably capable of being used for their intended purposes;
2. in relation to which there are reasonable grounds for not promptly rectifying them;
3. the rectification of which omissions or defects will not prejudice the convenient use of the Works;
4. all tests required under the Contract have been completed; and
5. any other particular requirements set out expressly in the contract (for example, the delivery of "as built" drawings)

From time to time, particularly in project - specific contract documentation, the Principal will define a number of further pre-requisites to Practical Completion (for example, the obtaining of certificates from the Fire Insurance Council of Australia...). On larger private sector projects, the Contract may provide many more requirements to be achieved as pre-conditions to practical completion, including for example:

- as built drawings
- operation and maintenance manuals
- certificates of completion from relevant authorities
- reinstatement of damage to services
- ….

The obligation on the Contractor, therefore, is not to bring the Works to "perfect" completion by any particular date, but to bring the works to "Practical Completion" by the "Date for Practical Completion".

Where the Contractor fails to bring the Works to Practical Completion by that Date for Practical Completion, the Contract will usually provide for the payment of "liquidated damages" by the Contractor to the Principal (we refer to this further below). Those damages represent the damages for breach of contract which the Principal will be entitled to recover from the Contractor because the Contractor has breached the Contract, namely by failing to bring the works to Practical Completion by the required date under the Contract.

Separable Portions

From time to time, in particular contracts, there may be several stages and/or several relevant parts of the Works which are required by the Principal to be brought to Practical Completion by a particular date. In such circumstances, the Works are divided into "separable portions" (alternatively referred to, from time to time, as "Separable Parts"). The separable portions are expressly defined in the Contract and there will be a separate regime of Dates for Practical Completion in respect of each separable portion, and liquidated damages in respect of each separable portion.

5.2 EXTENSION OF TIME

5.2.1 Delay to Practical Completion

The Contractor's obligation is to bring the Works to practical completion by the Date for Practical Completion.

A failure to bring the Works to practical completion by that date will usually expose the Contractor to a claim for damages (usually "liquidated damages") by the Principal.

The requirement to bring the Works to practical completion are generally to be found in this form in such major standard form contracts as AS2124, JCC, NPWC3 and others.

AS2124-1992 Clause 35.2 provides:

> ***35.2 Time for Practical Completion***
> *The Contractor shall execute the work under the Contract to Practical Completion by the Date for Practical Completion. Upon the Date of Practical Completion the Contractor shall give possession of the Site and the Works to the Principal.*

AS4000-1997 Clause 35.1 provides:

> ***35.1 Progress***
> *The Contractor shall ensure that WUC reaches practical completion by the date for practical completion.*

5.2.2 Entitlement to Extension of Time

Where delay occurs, the Contractor may have an entitlement to an extension of time to the Date for Practical Completion, depending on the express provisions of the particular contract.

AS2124-1992 Clause 35.5 provides:

> ***35.5 Extension of Time for Practical Completion***
> *When it becomes evident to the Contractor that anything, including an act or omission of the Principal, the Superintendent or the Principal's employees, consultants, other contractors or agents, may delay the work under the Contract, the Contractor shall promptly notify the Superintendent in writing with details of the possible delay and the cause.*
> *When it becomes evident to the Principal that anything which the Principal is obliged to do or provide under the Contract may be delayed, the Principal shall give notice to the Superintendent who shall notify the Contractor in writing of the extent of the likely delay.*
> *If the Contractor is or will be delayed in reaching Practical Completion by a cause described in the next paragraph and within 28 days after the delay occurs the Contractor gives the Superintendent a*

written claim for an extension of time for Practical Completion setting out the facts on which the claim is based, the Contractor shall be entitled to an extension of time for Practical Completion.
The causes are -

(d) events occurring on or before the Date for Practical Completion which are beyond the reasonable control of the Contractor including but not limited to -
industrial conditions;
inclement weather;

(e) any of the following events whether occurring before, on or after the Date for Practical Completion -
(iv) delays caused by -
- *the Principal;*
- *the Superintendent;*
- *the Principal's employees, consultants, other contractors or agents;*

(v) actual quantities of work being greater than the quantities in the Bill of Quantities or the quantities determined by reference to the upper limit of accuracy stated in the Annexure (otherwise than by reason of a variation directed under Clause 40);
(vi) latent conditions;
(vii) variations directed under Clause 40;
(viii) repudiation or abandonment by a Nominated Subcontractor;
(ix) changes in the law;
(x) directions by municipal, public or statutory authorities but not where the direction arose from the failure of the Contractor to comply with a requirement referred to in Clause 15.1;
(xi) delays by municipal, public or statutory authorities not caused by the Contractor;
(xii) claims referred to in Clause 17.1(v);
(xiii) any breach of the Contract by the Principal;
(xiv) any other cause which is expressly stated in the Contract to be a cause for extension of time for Practical Completion.

Where more than one event causes concurrent delays and the cause of at least one of those events, but not all of them, is not a cause referred to in the preceding paragraph, then to the extent that the delays are concurrent, the Contractor shall not be entitled to an extension of time for Practical Completion.
In determining whether the Contractor is or will be delayed in reaching Practical Completion regard shall not be had to -
- *whether the Contractor can reach Practical Completion by the Date for Practical Completion without an extension of time;*
- *whether the Contractor can, by committing extra resources or incurring extra expenditure, make up the time lost.*

.....

By comparison, AS4000-1997 Clause 35.3 is far more succinct:

35.3 Claim
The Contractor shall be entitled to such extension of time for carrying out WUC (including reaching practical completion) as the Superintendent assesses ('EOT'), if:
a) the Contractor is or will be delayed in reaching practical completion by a qualifying cause of delay; and
b) the Contractor gives the Superintendent, within 28 days of when the Contractor should reasonably have become aware of that causation occurring, a written claim for an EOT evidencing the facts of causation and of the delay to WUC (including extent).

If further delay results from a qualifying cause of delay evidenced in a claim under paragraph (b) of this subclause, the Contractor shall claim an EOT for such delay by promptly giving the Superintendent a written claim evidencing the facts of that delay.

Delays enabling the Contractor to claim an extension of time under the Contract could usually be characterised as follows:

Delays caused by the Principal

Certain delays under a construction contract are caused by the Principal. Such delays might include, for example:

- delays in providing clear access to the site
- delays in providing detailed drawings and specifications
- errors in the drawings and specifications
- failure to provide certain matters to be provided under the Contract by the Principal (for example, water, electricity, gas...)

Where the Principal delays the Contractor in the performance of the Works, the Contract should expressly provide that the Contractor is to be entitled to an extension of time. The Contract also should provide that the Contractor is expressly entitled to payment for the costs associated with that delay, usually referred to as "delay costs", however in the absence of such an express provision the Contractor will have a claim for damages for breach of contract in any event.

There is a substantial body of law as to the effect of such delays where the Contract does **not** expressly provide the Contractor with a right to an extension of time and/or delay costs. In brief, where the Principal prevents the Contractor from performing his contractual obligations, and the Contract provides no mechanism to extend the time under the Contract (sometimes referred to as the "prevention principle"), the Principal is unable to enforce his contractual remedies against the Contractor in respect of the Contractor's failure to perform the works by the time under the Contract.[9] Alternatively time is said to be "set at large" (meaning no more than that, in the absence of a contractual mechanism to extend time, the Date for Practical Completion has no contractual effect). This does not have the result that the Contract has no completion date, rather the Contractor is required to complete the work under the Contract within a reasonable time.

In practice, modern construction contracts always expressly provide an entitlement in the Contractor to both an extension of time (and to delay costs), where delays are caused by the Principal to the Contractor in the performance of the Works.

Delays caused by the Contractor

Certain delays are caused by the Contractor. Such delays might include, for example:
- where the Contractor is late in arriving on site
- where the Contractor performs the Works at too slow a rate to complete the Works by the Date for Practical Completion (or has allowed insufficient time in his tender)
- where the Contractor perform the Works in a defective manner, and the work has to be rectified

In such circumstances, the Contract should not (and rarely does) provide that the Contractor is entitled to an extension of time and/or additional payment in respect of those delays. These are all matters for which the Contractor is contractually responsible.

Neutral delays/force majeure

Certain delays which occur on major engineering contracts are not caused through the fault of either party but are referred to, from time to time as "force majeure" delays or events. Such delays might include, for example:
- inclement weather
- industrial stoppages
- Acts of God, civil wars...

It is a price-sensitive commercial matter for negotiation by the parties, at the time of entering into the Contract, as to whether particular force majeure events will or will not entitle the Contractor to an extension of time, and/or an adjustment of the Contract Sum, under the Contract. (Where the Contract expressly provides that the Contractor is to be entitled to an extension of time for such events, one might expect lower tender prices. Where the Contract does not expressly provide for an extension of time in such events, one might expect higher tender prices.)

The entitlement to, and assessment of, claims for extension of time is a major area of potential dispute under engineering contracts.

*5.2.3 **Notification of delay/claim for extension***

[9] The authority for this principle is usually said to be the English case, *Peak Construction (Liverpool) Ltd v McKinney Foundations Ltd*, the principle is sometimes referred to as the "Peak prevention principle".

Where delays occur under a construction contract and the Contractor intends to claim an extension of time (and/or delay costs) the Contract usually expressly provides for a notification regime and for the assessment of such claims.

The Contractor is usually expressly required to give notice of circumstances which might lead to a delay of any kind, immediately the Contractor becomes aware of such circumstances. This provision usually applies not only to circumstances out of which the Contractor might ultimately claim an extension of time, but to all circumstances where the Contractor is likely to be delayed in achieving practical completion by the Date for Practical Completion (even where, for example, the delay was caused through the Contractor's own fault and the Contractor is not entitled to such an extension of time).

In most contracts, there is a two-tier notification requirement, namely that the Contractor notify the Superintendent (or the Principal as the case may be) immediately upon becoming aware of the likely occurrence of a delay, and again, providing details of the extent of the delay and other such matters, within a reasonable time of the Contractor being able to calculate the extent and likely cost and effect on the construction program of that delay.

Notice of Delay:

AS2124-1992 Clause 35.5 provides:

> *When it becomes evident to the Contractor that anything, including an act or omission of the Principal, the Superintendent or the Principal's employees, consultants, other contractors or agents, may delay the work under the Contract, the Contractor shall promptly notify the Superintendent in writing with details of the possible delay and the cause.*

AS4000-1997 provides:

> *A party becoming aware of anything which will probably cause delay to WUC shall promptly give the Superintendent and the other party written notice of that cause and the estimated delay.*

Each of these notices is expressed to be a pre-condition to making a claim for extension of time.

Claim for extension of time:

AS2124-1992 Clause 35.5 provides:

> *If the Contractor is or will be delayed in reaching Practical Completion by a cause described in the next paragraph and within 28 days after the delay occurs the Contractor gives the Superintendent a written claim for an extension of time for Practical Completion setting out the facts on which the claim is based, the Contractor shall be entitled to an extension of time for Practical Completion.*

AS4000-1997 Clause 35.3 provides:

> *The Contractor shall be entitled to such extension of time for carrying out WUC (including reaching practical completion) as the Superintendent assesses ('EOT'), if:*
> *a) the Contractor is or will be delayed in reaching practical completion by a qualifying cause of delay; and*
> *b) the Contractor gives the Superintendent, within 28 days of when the Contractor should reasonably have become aware of that causation occurring, a written claim for an EOT evidencing the facts of causation and of the delay to WUC (including extent).*
> *If further delay results from a qualifying cause of delay evidenced in a claim under paragraph (b) of this subclause, the Contractor shall claim an EOT for such delay by promptly giving the Superintendent a written claim evidencing the facts of that delay.*

The Contract will usually provide that where the Contractor fails to give the necessary notice (or as the case may be, either of the necessary two notices), the Contractor will be barred under the Contract from bringing a claim for an extension of time and/or delay costs.

There is a substantial body of law as to the effect of such time bar clauses (see Section 5.6 below). From time to time, the Courts have declined to give effect to such time bar clauses for various reasons. Ideally, however, the Contractor who wishes to make such a claim should strictly comply, however, with such time bar notice provisions.

Interestingly, however, Clause 41.2 of AS4000-1997 provides:

> ***41.2 Liability for failure to communicate***
> *The failure of a party to comply with the provisions of subclause 41.1 or to communicate a claim in accordance with the relevant provision of the Contract shall, inter alia, entitle the other party to damages for breach of Contract but shall neither bar nor invalidate the claim.*

The effect of this is to make time bars in AS4000-1997 meaningless (as a bar). In fact, to date, the usual practice when using this standard form has been to amend AS4000-1997 to remove this Clause 41.2.

5.2.4 Criticality/float

A pre-requisite to claiming an extension of time, often expressly included in the Contract, is that the Contractor will, in fact, be delayed in achieving practical completion by the Date for Practical Completion. In effect, the Contract will usually provide that even though a delay might occur, unless that delay occurs to a critical activity (namely, an activity which, if delayed, will consequently delay the Works from being brought to practical completion by the Date for Practical Completion), the Contractor is **not** to be entitled to an extension of time. This pre-requisite to an extension of time is not articulated in every contract (in some contracts, there is no expression of this requirement).

AS2124-1992 Clause 35.5 provides:

> *If the Contractor is or will be delayed in reaching Practical Completion.....*

AS4000-1997 Clause 35.3 provides:

> *The Contractor shall be entitled to such extension of time for carrying out WUC (including reaching practical completion) as the Superintendent assesses 'EOT'), if:*
> *a) the Contractor is or will be delayed in reaching practical completion by a qualifying cause of delay; ....*

This has been confused, from time to time, with a separate issue as to "Who Owns the Float?" On one view, where a Contractor has carefully arranged his affairs (or "husbanded" his time) so as to make certain activities non-critical, then delays which are caused to the Contractor, for which the Contract provides an extension of time, should result in an extension of time (thereby, in fact, giving the Contractor even more time "up his sleeve"). The opposite view is that the Contractor, where delayed on a non-critical activity, should never be entitled to an extension of time where he will not, in fact, be delayed under the Contract.

Contract provisions usually expressly provide for the latter (namely, that the Contractor is not entitled to an extension of time **unless** that delay is likely to delay him in achieving practical completion, i.e. that the delay occurs to a critical activity only). Despite this, the Courts have tended towards a view that the Contractor, where he has carefully husbanded his time in a particular way, should not be penalised by being denied an extension of time in such circumstances.

Such issues will need to be resolved in each case depending on the particular provisions of the Contract. The likelihood is, however, that a Court would prefer to find in favour of a Contractor where a delay is caused by the Principal (albeit to a non-critical activity) where such an interpretation is available to it.

5.3 LIQUIDATED DAMAGES

The contractual obligation on the Contractor, in respect of time under the Contract, is to bring the Works to practical completion by the Date for Practical Completion.

Where the Contractor breaches the Contract by failing to bring the Works to practical completion by the Date for Practical Completion, the Principal would, in the absence of any other provision, have a contractual entitlement to sue for general damages.

The convention has evolved, for the common convenience of the parties, that such damages are pre-agreed at the time of entering into the Contract. For this purposes, such damages are usually referred to as "liquidated damages" (in this context, the use of the word "liquidated" means, a specific amount, rather than an amount to be determined by the Courts).

The requirements to bring the Works to practical completion are generally to be found in this form in such major standard form contracts as AS2124, JCC, NPWC3 and others.

AS2124-1992 Clause 35.6 provides:

> ***35.6 Liquidated Damages for Delay in Reaching Practical Completion***
> *If the Contractor fails to reach Practical Completion by the Date for Practical Completion, the Contractor shall be indebted to the Principal for liquidated damages at the rate stated in the Annexure for every day after the Date for Practical Completion to and including the Date of Practical Completion or the date that the Contract is terminated under Clause 44, whichever first occurs.*
> *If after the Contractor has paid or the Principal has deducted liquidated damages, the time for Practical Completion is extended, the Principal shall forthwith repay to the Contractor any liquidated damages paid or deducted in respect of the period up to and including the new Date for Practical Completion.*

AS4000-1997 Clause 35.7 provides:

> ***35.7 Liquidated damages***
> *If WUC does not reach practical completion by the date for practical completion, the Superintendent shall certify, as due and payable to the Principal, liquidated damages in Item 24 for every day after the date for practical completion to and including the earliest of the date of practical completion or termination of the Contract or the Principal taking WUC out of the hands of the Contractor.*
> *If an EOT is directed after the Contractor has paid or the Principal has set off liquidated damages, the Principal shall forthwith repay to the Contractor such of those liquidated damages as represent the days the subject of the EOT.*

In fact, though such liquidated damages are to be paid by the Contractor to the Principal (usually, they are deducted by the Principal from monies due to the Contractor, where the Principal decides to deduct such liquidated damages at all), the liquidated damages provision is primarily for the benefit of the Contractor. The operation of a liquidated damages clause effectively limits the potential exposure of the Contractor to damages for late completion.

There are a number of issues which arise in respect of liquidated damages as follows:

1. The Courts have generally declined to enforce "penalty" clauses. For this reason, it is usual to make the liquidated damages a genuine pre-estimate of the damages likely to be suffered by the Principal in the event of late completion (albeit that this pre-estimate is made at the time of entering into the Contract rather than when the delay occurs, at the end of the construction period). It may suffice to say, however, that a daily estimate of damages is rarely (if ever) treated as a penalty clause by the Courts. Penalty clauses usually take the nature of an amount unrelated to the actual damage suffered, and which penalty only comes into effect on a particular date.

2. The quantum of liquidated damages is usually estimated by the parties at the time of entering into the Contract, based on the damages likely to be suffered by the Principal if in fact the Contractor is late in completing the Works. Accordingly, as a matter of contractual negotiation, the amount of damages is typically a "genuine pre-estimate" of those damages. In the absence, however, of agreement on that amount, the parties are open to leave out the liquidated damages clause altogether. In such circumstances, the Principal could sue the Contractor for general damages if the Contractor was late in completing the Works. (The usual reason why the Contractor will insist on a liquidated damages clause is for the reason set out

above, namely to limit his potential exposure in such circumstances.)

3. There is no requirement on the Principal to establish that it has, in fact, suffered loss (the whole purpose of pre-agreeing liquidated damages is to avoid the potential upside/downside on losses).

Cap on liquidated damages?

The parties negotiating a construction contract will regularly request or agree to a cap for liquidated damages. The likelihood is that a cap on liquidated damages is a bad idea for, both, a principal and a contractor.

The problem with a cap on liquidated damages is what happens if that cap is reached. The Principal (in the absence of being entitled to further liquidated damages) has no option but to terminate the Contract. The Contractor, in that position, would, in fact, be better off if the Principal could still, if it chose, continue to deduct liquidated damages rather than be forced to terminate the Contract.

Separately, where a contractor is requesting a cap on liquidated damages, that contractor will usually intend that those (capped) liquidated damages is to be the only remedy for the Principal in respect of lateness. The Principal, however, should never agree to this. If that position was reached, the Principal would be left with a late, and unfinished project, and no contract remedy (not even the ability to get back the site and complete the work itself).

(There is often a related drafting issue with such caps on liquidated damages. The Contractor may intend that the cap on liquidated damages means that once the cap is reached, the Principal cannot deduct further liquidated damages, nor can the Principal still terminate the Contract on the basis of late completion. The Principal may intend the opposite, ie that once the cap on liquidated damages is reached, and the Principal cannot deduct further liquidated damages, the Principal may still terminate the Contract on the basis of late completion.

Accordingly, wherever the parties agree that a contract will include a cap on liquidated damages, in my view the contract should expressly clarify, for the avoidance of doubt, that once the cap on liquidated damages is reached, and the Principal cannot deduct further liquidated damages, the Principal may still terminate the Contract on the basis of late completion.

"Nil" Liquidated damages

From time to time, parties (usually by mistake, but this could sometimes be the commercial agreement) insert the word "Nil" in the item for liquidated damages.
Courts have interpreted this to mean what it says, namely that the Contractor, if late, pays zero damages to the Principal in respect of that lateness. (If the parties, in fact, intended to delete the liquidated damages clause, and rely on general damages for any lateness, they should delete the entire liquidated damages provision, rather than write "Nil").In *J-Corp Pty Ltd v Mladenis* [2009] WASCA 157 (28 August 2009)**, t**he Western Australian Court of Appeal was considering whether a clause limiting liquidated damages to "NIL DOLLARS ($00.00)" prevented the owners from claiming general damages for delay when the builder failed to reach practical completion on their home by the due date. The preliminary question requiring determination by the Court was whether, on proper construction, the clause specifying "NIL" liquidated damages excluded the respondents' right to claim common law damages for losses suffered due to the appellant's breach of Contract? The Court reviewed a number of earlier conflicting authorities on the point (in particular, *Temloc Ltd v Errill Properties Ltd* (1987) 39 BLR 30; Cf *Baese Pty Ltd v RA Bracken Building Pty Ltd* (1990) 6 BCL 137; *Cellulose Acetate Silk Co Ltd v Widnes Foundry* (1925) Ltd [1933] AC 20) before examining the Contract terms. The Court reasoned:

> *[C]lear words are needed to rebut the presumption that a contracting party does not intend to abandon any remedies for breach of contract arising by operation of law*

The Court found that there were no "clear and unequivocal words" in the Contract that excluded the owners from claiming general damages for delay. The words "NIL liquidated damages" meant precisely that. There could be no recovery for liquidated damages. However, general damages were still available to the owners.

This decision reaffirms that the use of 'NIL" or 'N/A" for liquidated damages clauses in building contracts will not necessarily exclude a party's right to common law damages

Penalties and liquidated damages

Liquidated damages or penalties provisions in building contracts typically relate to the obligation to complete the work within the specified time. In cases where the act concerned is a breach of contract, the court may inquire whether the payment or forfeiture provided for in the contract is a penalty, or liquidated damages.

If it is deemed to be a penalty, the party claiming it will not be allowed to recover the full amount, if his damage was in fact less, yet on the other hand will not be limited to that amount if his damages have been greater. If it is held to be liquidated damages, the aggrieved party will be entitled to the stipulated sum, whether the real damage be greater or less or absent.

The essence of a penalty is a payment of money stipulated as "in terrorem" of the offending party; the essence of liquidated damages is a genuine covenanted pre-estimate of damage.

Whether a sum stipulated is penalty or liquidated damages is a question of construction to be decided upon the terms and inherent circumstances of each particular contract, judged as at the time of the making of contract, not as at the time of the breach.

The task of construction has suggested various tests from time to time:

- It will be held to be a penalty if the sum stipulated for is extravagant and unconscionable in amount in comparison with the greatest loss that could conceivably be proved to have followed from the breach.
- It will be held to be a penalty if the breach consists only in not paying a sum of money, and the sum stipulated is a sum greater than the sum which ought to have been paid.
- There is a presumption that it is a penalty when a single lump sum is made payable by way of compensation, on the occurrence of one or more events, some of which may occasion serious and others trifling damage".
- It is no obstacle to the sum stipulated being a genuine pre-estimate of damage, that the consequences of the breach are such as to make precise pre-estimation almost an impossibility. On the contrary, that is just the situation when it is probable that pre-estimated damage was the true bargain between the parties.

In *AMEV-UDC Finance Ltd v Austin* (1986) 162 CLR 170,at 192, Mason and Wilson JJ observed:

> ***"*** *A penalty provision has been regarded as unenforceable or, perhaps void, ab initio….In the majority of cases involving penalties, the courts, if called upon to assist in partial enforcement ..Penalty clauses are not, generally speaking, so expressed as to entitle the plaintiff to recover his actual loss. Instead they prescribe the payment of a sum which is exorbitant or a sum to be ascertained by reference to a formula which is not an acceptable pre-estimate of damage…."is one of degree and will depend on a number of circumstances including; (1) the degree of disproportion between the stipulated sum and the loss likely to be suffered by the plaintiff, a factor relevant to the oppressiveness of the term to the defendant, and the (2) the nature of the relationship between the contracting parties, a factor relevant to the unconscionability of the plaintiff's conduct in seeking to enforce the term."*

This principle was later considered again, by Cox CJ, with approval in *State of Tasmania v Leighton Contractors Pty Ltd (No 3)* [2004] TASSC 132 (16 November 2004).

Liquidated damages – difficulty in Victoria
Building and Construction Industry Security of Payment Act (Vic) 2002

There is, separately, **in Victoria (only)**, a difficulty in deducting liquidated damages under the *Building and Construction Industry Security of Payment Act (Vic) 2002*.

This Victorian Act includes carve-outs, in Section 10B (see the discussion in Section 11 below), that effectively prevent an adjudicator from taking into account claims for damages, including liquidated damages. In *Seabay Properties Pty Ltd v Galvin Construction Pty Ltd & Anor* [2011] VSC 183 (6 May 2011), Vickery J (the then Judge in Charge of the Victorian Supreme Court Technology and Construction List) decided that a claim for liquidated damages was an "Excluded Amounts" under Section 10B of the Act.

In effect, a person who wants to deduct liquidated damages, will usually need to commence a legal action to deduct the liquidated damages.

5.4 DELAY COSTS

Where the Contractor is delayed in completing the Works, he will usually be exposed to additional costs, irrespective of who caused the delay.

Such "delay costs" will usually arise out of the continuing costs to be borne by the Contractor (for example, crane hire, site shed hire, foreman salaries, other continuing costs including the contribution which the particular project is required to make to the head office overheads...).

Where, therefore, the delay is caused by a breach of contract on the part of the Principal (for example, delay in providing access to the site, or in the provision of drawings and specifications, or through a failure by the Principal to perform activities required of the Principal...) the Contractor will suffer financial loss in addition to the mere loss of time. The Contractor will therefore wish to claim an adjustment to the Contract Sum, or "delay costs", in addition to claiming an extension of time to the Date for Practical Completion.

The best drawn Contracts will usually expressly provide for the Principal to pay such "delay costs" to the Contractor (on the reasoning that in the absence of such an express clause the Contractor will nevertheless have an entitlement to damages against the Principal), and expressly limit the Contractor's entitlement in such circumstances.

AS2124-1992 Clause 36 provides:

> ***36. DELAY OR DISRUPTION COSTS***
> *Where the Contractor has been granted an extension of time under Clause 35.5 for any delay caused by any of the events referred to in Clause 35.5(b)(i), the Principal shall pay to the Contractor such extra costs as are necessarily incurred by the Contractor by reason of the delay.*
> *Where the Contractor has been granted an extension of time under Clause 35.5 for any delay caused by any other event for which payment of extra costs for delay or disruption is provided for in the Annexure or elsewhere in the Contract, the Principal shall pay to the Contractor such extra costs as are necessarily incurred by the Contractor by reason of the delay.*
> *Nothing in Clause 36 shall -*
> *(f) oblige the Principal to pay extra costs for delay or disruption which have already been included in the value of a variation or any other payment under the Contract; or*
> *(g) limit the Principal's liability for damages for breach of contract.*

AS4000-1997 Clause 35.9 provides:

> ***35.9 Delay damages***
> *For every day the subject of an EOT for a compensable cause and for which the Contractor gives the Superintendent a claim for delay damages pursuant to subclause 41.1, damages certified by the Superintendent under subclause 41.3 shall be due and payable to the Contractor.*

Interestingly, in AS2124-1992, the delay cost provisions of the Contract refer to the entitlement of the Contractor to claim "extra costs necessarily incurred". On one view, this entitlement somehow limited the Contractor's entitlement (for example, when compared to the similar provisions in AS4000-1997 which refer to "damages").

"Sole remedy" clauses

There is a practice to include provisions in a construction contract to the effect that a contractor's "sole remedy" for any matter arising out of the contract is limited to an extension of time. The likely legal position is that, in some instances, despite the express provisions of the particular contract, a particular sole remedy clause may be ineffective.

For example, a court may find an exception to the enforcement of a 'no damages for delay' clause where the delay was so extreme as to have been not reasonably contemplated by the parties at the time of the contract. The courts have always been prepared to find that the contract will not apply where what has occurred is

fundamentally different from that intended by the parties to the contract.

In *Sir Lindsay Parkinson v Commissioner of Works* [1949] 2 K.B. 632, there was a contract to perform works, on a cost plus with a cap basis, to a value of £5M. The ultimate cost of the works was around £6.68M. The court concluded that the work executed was so far outside the scope of the original contract works that the contractor was entitled to be paid a reasonable sum for the work on a quantum meruit basis. The court concluded that the terms of a construction contract may not extend to a delay: "*so differing in degree and magnitude from anything which could have been contemplated as to differ from it in kind*." In *Bank Line Ltd v Arthur Capel & Co*[1919] AC 435, the court said: "*I am of opinion that the requisitioning of the [ship] destroyed the identity of the chartered service and made the charter as a matter of business a totally different thing*". In *British Movietonews Ltd v London & District Cinemas Ltd* [1952] AC 166, the court said: "*[I]f…a consideration of the terms of the contract, in the light of the circumstances existing when it was made, shows that they never agreed to be bound in a fundamentally different situation which has now unexpectedly emerged, the contract ceases to bind at that point—not because the court in its discretion thinks it just and reasonable to qualify the terms of the contract, but because on its true construction it does not apply in that situation*". And in *Metropolitan Water Board v Dick, Kerr &Co Ltd* [1918] AC 119, the court said: "*An interruption may be so long as to destroy the identity of the work or service, when resumed, with the work or service interrupted*".

There is, separately, a strong line of USA cases to the effect that the sole remedy clause may be ineffective where:

i. the delay is of different kind from that contemplated by the clause, including extreme delay;
ii. the delay amounts to abandonment;
iii. delay is the result of positive acts of interference by the principal;
iv. bad faith.

Finally, in addition, there may sometimes be a claim for misleading and deceptive conduct, which cannot be excluded by private contract.

5.5 PROGRAM

The obligation on the Contractor in respect of programming is usually expressed to be:

1. proceed with the Works with reasonable expedition
2. provide a program within a set period of award of the Contract
3. achieve practical completion by the Date for Practical Completion

AS2124-1992 Clause 33.1-2 provides:

> ***33.1 Rate of Progress***
> *The Contractor shall proceed with the work under the Contract with due expedition and without delay…….*
>
> ***33.2 Construction Program***
> *……..*
> *A construction program shall not affect rights or obligations in Clause 33.1. The Contractor may voluntarily furnish to the Superintendent a construction program.*
> *The Superintendent may direct the Contractor to furnish to the Superintendent a construction program within the time and in the form directed by the Superintendent.*
> *The Contractor shall not, without reasonable cause, depart from -*
> *(a) a construction program included in the Contract; or*
> *(b) construction program furnished to the Superintendent.*
> *The furnishing of a construction program or of a further construction program shall not relieve the Contractor of any obligations under the Contract including the obligation to not, without reasonable cause, depart from an earlier construction program.*

AS4000-1997 Clause 32 provides:

> ***Programming***
> *….*

The Superintendent may direct in what order and at what time the various stages or portions of WUC shall be carried out. If the Contractor can reasonably comply with the direction, the Contractor shall do so. If the Contractor cannot reasonably comply, the Contractor shall give the Superintendent written notice of the reasons.
A construction program is a written statement showing the dates by which, or the times within which, the various stages or portions of WUC are to be carried out or completed. It shall be deemed a Contract document.
The Superintendent may direct the Contractor to give the Superintendent a construction program within the time and in the form directed.
The Contractor shall not, without reasonable cause, depart from a construction program.
.....

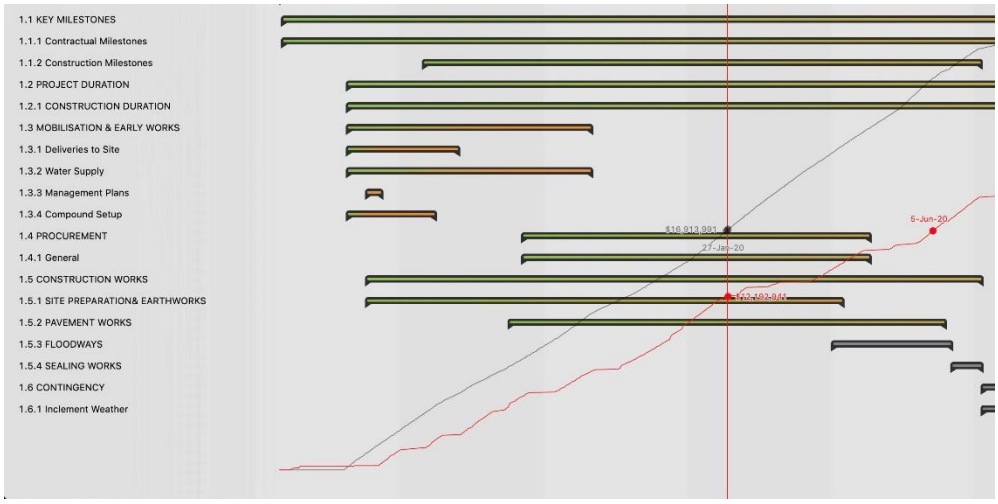
The practice on larger projects is to expressly set out detailed requirements as to the requirements for the program. The Contractor is only required to achieve the contract dates. The sequencing of the Works (within limits) is up to the Contractor. Where the Contractor is directed to perform the Work in a certain manner or sequence, that direction may result (depending upon the terms of the tender documents) in a variation claim to the Contractor. The programming obligations are, however, subject to the requirement (provided this appears in the Contract provisions) to expeditiously perform the Works so as to achieve practical completion by the Date for Practical Completion.

Contract Management Tools:

The tools to monitor progress on construction projects are extremely good.

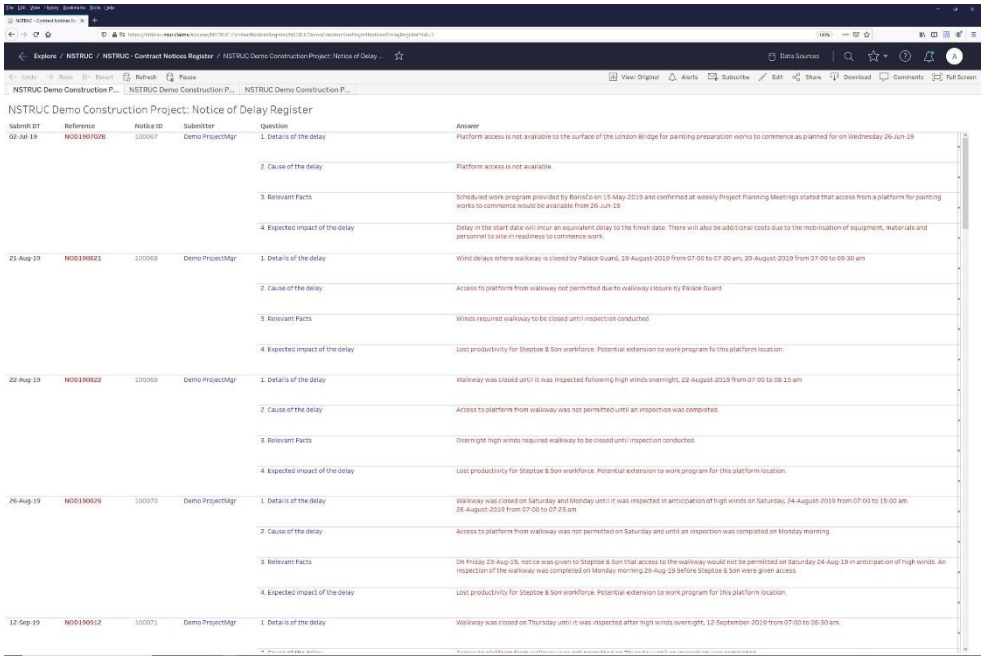
For example, this type of edit-able pdf Notice of Delay and/or EOT Claim can be conveniently launched from a mobile phone, on-site:

And, for example, this type of drag-able Gantt chart can be conveniently launched from a mobile phone, on-site, showing the effect of a particular delay on the overall program:



I predict that updated overall programs may soon become an attachment to every Notice of Delay and EOT Claim.

Then, for example, that edit-able pdf Notice of Potential Variation and/or Variation Claim can be conveniently, automatically, included in an automatically updated Register of Notices of Delay and an EOT Claim Register, for example:


NSTRUC Demo Construction Project: Notice of Delay Register

Submit DT	Reference	Notice ID	Submitter	Question	Answer
02-Jul-19	NOD190702B	100067	Demo ProjectMgr	1. Details of the delay	Platform access is not available to the surface of the London Bridge for painting preparation works to commence as planned for on Wednesday 26-Jun-19
				2. Cause of the delay	Platform access is not available.
				3. Relevant Facts	Scheduled work program provided by BorisCo on 15-May-2019 and confirmed at weekly Project Planning Meetings stated that access from a platform for painting works to commence would be available from 26-Jun-19.
				4. Expected impact of the delay	Delay in the start date will incur an equivalent delay to the finish date. There will also be additional costs due to the mobilisation of equipment, materials and personnel to site in readiness to commence work.
21-Aug-19	NOD190821	100068	Demo ProjectMgr	1. Details of the delay	Wind delays where walkway is closed by Palace Guard, 19-August-2019 from 07:00 to 07:30 am, 20-August-2019 from 07:00 to 09:30 am
				2. Cause of the delay	Access to platform from walkway not permitted due to walkway closure by Palace Guard.
				3. Relevant Facts	Winds required walkway to be closed until inspection conducted.
				4. Expected impact of the delay	Lost productivity for Steptoe & Son workforce. Potential extension to work program fo this platform location.
22-Aug-19	NOD190822	100069	Demo ProjectMgr	1. Details of the delay	Walkway was closed until it was inspected following high winds overnight, 22-August-2019 from 07:00 to 08:15 am
				2. Cause of the delay	Access to platform from walkway was not permitted until an inspection was completed.
				3. Relevant Facts	Overnight high winds required walkway to be closed until inspection conducted.
				4. Expected impact of the delay	Lost productivity for Steptoe & Son workforce. Potential extension to work program for this platform location.
26-Aug-19	NOD190826	100070	Demo ProjectMgr	1. Details of the delay	Walkway was closed on Saturday and Monday until it was inspected in anticipation of high winds on Saturday, 24-August-2019 from 07:00 to 15:00 am. 26-August-2019 from 07:00 to 07:23 am
				2. Cause of the delay	Access to platform from walkway was not permitted on Saturday and until an inspection was completed on Monday morning.
				3. Relevant Facts	On Friday 23-Aug-19, notice was given to Steptoe & Son that access to the walkway would not be permitted on Saturday 24-Aug-19 in anticipation of high winds. An inspection of the walkway was completed on Monday morning 26-Aug-19 before Steptoe & Son were given access.
				4. Expected impact of the delay	Lost productivity for Steptoe & Son workforce. Potential extension to work program for this platform location.
12-Sep-19	NOD190912	100071	Demo ProjectMgr	1. Details of the delay	Walkway was closed on Thursday until it was inspected after high winds overnight, 12-September-2019 from 07:00 to 08:30 am.

I predict that this type of notice/update to program/register process, launched from a mobile phone, on-site, may soon become the go-to process on major projects, firstly, to comply with the contract requirements of a particular contract, but secondly, more importantly, to assist in the actual management of the construction project.

5.6 **TIME BARS**

The entitlement to an extension of time will usually be expressed to be conditional upon the Contractor giving the notices spelled out in the Contract, including, usually, a notice of delay, and a claim for extension of time,

within specified times. If the Contractor fails to give those notices within the specified time, the Contract will usually provide that the claim is barred.

The usual arguments made by a party which has failed to give the requisite notices in the face of a time bar clause include:

1. the true interpretation of the clause, in the particular case, is that the clause is directory/procedural, not mandatory (the claim is not barred, though the injured party is entitled to damages);

2. there is an implied term which has the effect, in the particular case of making the particular time bar clause inapplicable (for example, an implied term that the party bringing the claim must first have all of the necessary information, or that the other party is not in default under the Contract);

3. in the event that the particular claim is barred in contract, the claim can be brought outside the Contract (for example, in restitution, or in misleading and deceptive conduct, or in negligence);

4. that the other party has somehow waived his right to rely on the time bar (for example, there were discussions of the claims encouraging the claimant to wait until some later time before making the particular claim);

5. that the particular claim (for example, for an extension of time) is barred but the claimant is not barred from suing for general damages for breach of contract.

The purpose of notice provisions was discussed in *Re Multiplex Constructions Pty Ltd* [1999] 1 Qd R 287 before the Supreme Court of Queensland, Court of Appeal, the joint judgment of Davies JA and Lee J provides (in part):

> *"The purpose of the notice provision….is to alert the superintendent to the need for investigation of facts on which the claim is based in order to determine whether that justifies an extension of time for practical completion. The later any such notice is given after commencement of the delay, the later the superintendent may appreciate that need and the more difficult it may be for him to verify whether there has been delay and, if so, its cause. And where the delay and its cause continue for a very long time while without any such notice being given the principal and the superintendent may be misled as to the likelihood of practical completion on the due date….It is equally important for the contractor to know, at an early stage after delay has commenced, whether it will be entitled to an extension of time in respect of that delay or whether it must commit extra resources or incur extra expenditure to make up the time lost."*

The Courts have generally attempted to read down time bars, where this is possible in the context of the Contract, to be directory/procedural, rather than mandatory. In that event, the party failing to comply with the time bar may be liable in damages to the other party (for damages caused by the failure to comply with the time bar), but not barred. For example, in *Jennings Construction Ltd v Q H and M Birt Pty Ltd* (1987) 3 BCL 189, the Court interpreted the catch-all clause 48 of NPWC3-1981 as not barring progress claims and variations (but only final claims).

The Court will give effect to time bar clauses, however, where the intention of the parties to give the clause this effect is clear from the contract (for example, in relation to a potential latent conditions claim in *Wormald Engineering Pty Ltd v Resources Conservation Co International* (1989) 8 BCL 158. In that case, Rogers CJ (the NSW Supreme Court Building Cases Judge) said:

> *The purpose is to provide the respondent, through the superintendent, prior to the implementation of the variation orders, with information as to their likely effect so as to allow the respondent to make an informed assessment as to whether or not the variation orders should be confirmed… Here the arbitrator found that there was no evidence of service of the notices. That had the result that the superintendent and, therefore, the respondent, by failure of the appellant to adhere to its obligations and to follow the prescribed route, were deprived of the opportunity of making an informed assessment as to whether to require the variation to proceed …. In my opinion, the arbitrator was correct in rejecting this submission of the appellant and in holding that failure to give notice was destructive of the appellant's entitlement to recover under this clause.*

In *Leighton Contractors Pty Ltd v. SA Superannuation Fund Investment Trust* (1996) 12 BCL 38, the court said:

> *…Clearly the intention of the parties as disclosed by the agreement is that the appellant is required to comply with the notice provisions according to their terms* ***whatever difficulties that might thereby be caused****.*

In *Opat Decorating Service (Aust) Pty Ltd v. Hansen Yucken (SA) Pty Ltd* [1994] SASC 4878; (1994) 11 BCL 360, the Supreme Court of South Australia Full Court said (per Bollen J):

> *22. We were referred to several cases. In my opinion no case is decisive of the matter nor could any case be decisive. We may see principles in cases. But in the end it is the words used in the relevant clause or clauses of the sub-contract which are decisive. What in this sub-contract do these words mean? What did the parties negotiating at arms' length mean when they agreed to the insertion of the relevant words in the sub-contract? .....*
> *25. In speaking of a "time limitation clause" in Port Jackson Stevedoring Proprietary Ltd v Salmond and Spraggon (Aust) Pty Ltd [1978] HCA 8; (1977-78) 139 CLR 231 at 238 Barwick CJ said:-*
>
> > *"The decision in Suisse Atlantique ... indicates, in my opinion, that whilst exemption clauses which, for present purposes, can be assumed to include a time limitation such as cl.17, should be construed strictly, they are of course enforceable according to their terms unless their application according to those terms should lead to an absurdity or defeat of the main object of the contract or, some other reason, justify the cutting down of their scope."*
>
> *25. There is, in my opinion, nothing in the reasoning of Mohr J which leads to absurdity or defeats any object of the sub-contract. Nor is there any reason for cutting down the scope of the words which create the time limit.*
> *26. In Darlington Futures Ltd v Delco Aust P/L [1986] HCA 82; (1986) 161 CLR 500 at 510 the High Court held that the exclusion clause there was to be interpreted and determined according to the natural and ordinary meaning read in the light of the circumstances as a whole. The High Court said that the same principle would apply to the consideration of limitation clauses. I think that the arbitrator and Mohr J read the relevant words in the way approved by the High Court.*
> *27. In Jennings Constructions Ltd v Q H and M Birt Pty Ltd (1986) 8 NSWLR 18 Smart J had to deal with s.47 of SCNPWC3. He considered that the time limit in s.47 was a condition precedent with the granting of an extension. It was mandatory. Mohr J quoted this passage from the reasons of Smart J:-*
>
> > *"The purpose of cl.47 is to ensure that notice is given at an early stage so that the contractor can inspect and investigate promptly the events or circumstances and consider his position."*
>
> *....*
> *30. The case of Wormald Engineering Pty Ltd v Resources Conservationists Co (1989) 8 BCL 158 was referred to by Mohr J and discussed before us. A reading of the reasons of Rogers CJ Comm.D shows, in my opinion, that His Honour determined the issue before him by considering the meaning of the relevant words in the way approved by the High Court in the cases which I have mentioned. His Honour looked at the contract at the relevant words and at the purpose of the words. He held that failure to give notice as required by the contract was destructive of the claim made in that case. He asked himself the question whether in the circumstances the giving of notice as required by the relevant clause was a condition precedent to payment. He answered "Yes".*
> *31. Neither Wormald's case nor Jennings' case is decisive here. But they are powerful demonstrations of the way in which a court should consider the words in Clause 31(b) and, if thought necessary, Clause 47 of SCNPWC3.*
> *32. Let me look at Clause 31(b). It begins by speaking of circumstances in which the parties contemplate that the appellant might want an extension of time within which to complete work. The parties when negotiating the contract, knowing the exigencies of the trade, agreed that some such circumstances might arise. What should be done about it? They answered this question by saying that the notice should be given by the appellant to the respondent, by sub-contractor to contractor. They decided something about the time within which notice should be given. What did they decide? They decided that it should be given within fourteen days after the cause of delay arose. They knew the exigencies of the trade. They knew what practical questions or issues would*

> *arise when notice was given. They knew when it was best for the notice to be given. They fixed on that fourteen day period. And they meant the clause which emerged from these deliberations to be effective within its terms. That is to say they meant what Clause 31(b) says to be the position. They meant to bind themselves to it.*

AS4000-1997 Clause 41.2

Interestingly, AS4000-1997 has adopted a more lenient view towards failure to comply with time bars (in real projects, this provision is usually amended out). Clause 41.2 of AS4000-1997 provides:

> ***Liability for failure to communicate***
> *The failure of a party to comply with the provisions of subclause 41.1 or to communicate a claim in accordance with the relevant provision of the Contract shall, inter alia, entitle the other party to damages for breach of Contract but shall neither bar nor invalidate the claim.*

6. PAYMENT

6.1 PROGRESS CLAIMS/PROGRESS CERTIFICATES/PROGRESS PAYMENTS

Progress Claim

In all traditional standard form contracts, the Contractor is required to periodically deliver, to the Superintendent, progress claims for payment under the Contract. The Contractor is required to submit details supporting its claim for payment (discussed further below). In most standard form contracts in Australia, the Superintendent is required to assess those progress claims (by reference to the degree of completeness **and** the quality of the materials and workmanship).

For example, in AS2124-1992, clause 42.1 provides, in part, as follows:

> *42.1 Payment Claims, Certificates and Time for Payment.*
> *At the times for payment claims stated in the Annexure...the Contractor shall deliver to the Superintendent claims for payments supported by evidence of the amount due to the Contractor and such information as the Superintendent may reasonably require. Claims for payment shall include all amounts then due to the Contractor under the Contract or for breach thereof.*

Accordingly the Superintendent must calculate the amount due, at that time, having regard to:
1. work carried out by the Contractor in performance of the contract; and
2. claims for breach of contract.

This is potentially a complex calculation.

It might be said that the value of works to be assessed in relation to paragraph (i) could be performed by a quantity surveyor. The difficulty with this type of assessment, however, is that it is necessarily linked to an assessment of quality of materials and workmanship. It is necessary to ensure that the works as completed are in accordance with the technical requirements of the drawings and specifications, and are free of defects. This assessment, in itself, may ultimately become the subject of technical debate.

But perhaps the more complex area is the assessment of payment claims for "breach" of contract. Claims for breach of contract might include, for example:
- additional payment to the Contractor for latent conditions
- claims for delay costs arising out of extensions of time which were the fault of the Principal
- claims for variations which arose out of the Principal's failure to give access to the site, or additional work caused by faulty design documentation
- claims for variations arising out of directions by the Superintendent relating to works not included in the contract/tender documents

In addition, in modern times, the Superintendent might expect from time to time to receive even more complex claims, such as:
- restitution/quantum meruit claims (where the works as constructed are so different from that tendered on, that the contract sum is no longer applicable)
- claims for negligence (for example, for additional works caused by negligent preparation of the design drawings specifications)
- claims for misleading and deceptive conduct under the *Competition and Consumer Act 2011 (Cth)*

Progress Certificate/Payment Certificate

When the Superintendent has assessed the progress claim he issues the progress certificate (sometimes referred to as “payment certificate”).

AS2124-1992 Clause 42.1 provides:

> *Within 14 days after receipt of a claim for payment, the Superintendent shall issue to the Principal and to the Contractor a payment certificate stating the amount of the payment which, in the opinion*

of the Superintendent, is to be made by the Principal to the Contractor or by the Contractor to the Principal. The Superintendent shall set out in the certificate the calculations employed to arrive at the amount and, if the amount is more or less than the amount claimed by the Contractor, the reasons for the difference. The Superintendent shall allow in any payment certificate issued pursuant to this Clause 42.1 or any Final Certificate issued pursuant to Clause 42.8 or a Certificate issued pursuant to Clause 44.6, amounts paid under the Contract and amounts otherwise due from the Principal to the Contractor and/or due from the Contractor to the Principal arising out of or in connection with the Contract including but not limited to any amount due or to be credited under any provision of the Contract.

AS4000-1997 Clause 37.2 provides:

The Superintendent shall, within 14 days after receiving such a progress claim, issue to the Principal and the Contractor:

a) a progress certificate evidencing the Superintendent's opinion of the moneys due from the Principal to the Contractor pursuant to the progress claim and reasons for any difference ('progress certificate'); and

b) a certificate evidencing the Superintendent's assessment of retention moneys and moneys due from the Contractor to the Principal pursuant to the Contract.

If the Contractor does not make a progress claim in accordance with Item 28, the Superintendent may issue the progress certificate with details of the calculations and shall issue the certificate in paragraph (b).

....

It is critical that the progress certificate be issued by the time stated in the Contract (under some contracts, if the certificate is not issued within the time, the Contractor is entitled to payment of the whole claim.

AS2124-1992 Clause 42.1 provides:

…….. if no payment certificate has been issued, the Principal shall pay the amount of the Contractor's claim….

AS4000-1997 Clause 37.2 provides:

If the Superintendent does not issue the progress certificate within 14 days of receiving a progress claim in accordance with subclause 37.1, that progress claim shall be deemed to be the relevant progress certificate ...

Where the Superintendent is not satisfied by the material submitted by the Contractor, the correct course is to make the assessment rather than wait for the additional information (in the absence of written agreement from the Contractor).

Progress Payment

The Progress Certificate is provided to both the Principal and the Contractor. To the extent that either party disputes that Progress Certificate, they are required under the Contract to take certain steps within a particular number of days to dispute that Progress Certificate. Failing any dispute arising in relation to the Progress Certificate, the Principal then becomes contractually obliged to make the Progress Payment to the Contractor, in accordance with that Progress Certificate, within the number of days as set out in the Contract.

AS2124-1992 Clause 42.1 provides:

Subject to the provisions of the Contract, within 28 days after receipt by the Superintendent of a claim for payment or within 14 days of issue by the Superintendent of the Superintendent's payment certificate, whichever is the earlier, the Principal shall pay to the Contractor or the Contractor shall pay to the Principal, as the case may be, an amount not less than the amount shown in the Certificate as due to the Contractor or to the Principal as the case may be……..

AS4000-1997 Clause 37.2 provides:

> *The Principal shall within 7 days after receiving both such certificates, or within 21 days after the Superintendent receives the progress claim, pay to the Contractor the balance of the progress certificate after deducting retention moneys and setting off such of the certificate in paragraph (b) as the Principal elects to set off. If that setting off produces a negative balance, the Contractor shall pay that balance to the Principal within 7 days of receiving written notice thereof.*

Progress certificates, and progress payments, do NOT constitute evidence that the works are properly performed, or that they have been accepted. Progress certificates, and progress payments, merely constitute interim assessments, and interim payments on account.

AS2124-1992 Clause 42.1 provides:

> *……. A payment made pursuant to this Clause shall not prejudice the right of either party to dispute under Clause 47 whether the amount so paid is the amount properly due and payable and on determination (whether under Clause 47 or as otherwise agreed) of the amount so properly due and payable, the Principal or Contractor, as the case may be, shall be liable to pay the difference between the amount of such payment and the amount so properly due and payable.*
> *Payment of moneys shall not be evidence of the value of work or an admission of liability or evidence that work has been executed satisfactorily but shall be a payment on account only, except as provided by Clause 42.8.*

AS4000-1997 Clause 37.2 provides:

> *Neither a progress certificate nor a payment of moneys shall be evidence that the subject WUC has been carried out satisfactorily. Payment other than final payment shall be payment on account only.*

The Principal's obligation to pay on the Progress Certificate is critical. The failure to pay on a certificate has caused serious contractual problems to principals, wrongly believing that this obligation could be avoided because of some other factor (for example, defects, lateness, etc, not, for some reason addressed in the progress certificate.)

6.2 SECURITY

6.2.1 Prior to Practical Completion

The Superintendent, in issuing the Progress Certificate, will calculate the cash retention, if any which is to be taken into account in making any progress payment. (I address cash retention and security in more detail in Section 7.)

The convention, historically, was for the Contractor to provide security for the performance of his obligations to the Principal, by the Principal deducting cash retention from progress payments, usually of the order of 5% of the value of work completed to any point, up to the Date of Practical Completion. The purpose of allowing the deduction of cash retention from the value of works completed, up to the point of Practical Completion, was to enable the Principal, should the need arise, to use those funds to pay others (if necessary) to rectify and/or complete the Contract Works in part or in total as the case required. In modern times, in fact, cash retention security has been substantially replaced by bank guarantee security (this is addressed in more detail in Section 7).

From the time of commencing the work up until practical completion, therefore, when issuing Progress Certificates, the Superintendent will usually note the amount of cash retention to be deducted, or not, from such Progress Payments.

The Contract will usually provide that such cash retention or security is to be returned, in part (usually 50%) at Practical Completion.

6.2.2 Defects Liability Period

The Contract will usually expressly provide for a Defects Liability Period.

Typically such a period might be of the order of 12 months on a major construction contract, could be as little as 3 months on a minor construction contract, or could conceivably be for 2 years or more on a complex industrial project requiring lengthy commissioning periods for equipment. In practice, however, on major works, the Defects Liability Period would usually be of the order of 12 months.

During that Defects Liability Period, the Contractor will usually be expressly obliged to return to the site and rectify defects which become apparent. (We refer to the defects liability provisions in more detail in Section 6).

Accordingly, at practical completion, **part** of the cash retention or bank guarantees will usually be returned to the Contractor, and the balance of the cash retention or bank guarantees will be retained throughout the Defects Liability Period. That security which is retained throughout that period is retained for the purpose of, should the need arise, the Principal rectifying such defects.

6.2.3 Final Completion/Final Payment Claim/Final Certificate

At the end of the Defects Liability Period, usually referred to as Final Completion, the Contractor will usually be required to submit a Final Payment Claim, including all claims which he wishes to make under the Contract. The Contract will usually expressly exclude any further claims being made by the Contractor under the Contract. The Contractor is usually expressly barred from bringing any further claims under the Contract (remembering that the work has now been completed for 12 months or more).

AS2124-1992 Clause 42.7 provides:

> *Within 28 days after the expiration of the Defects Liability Period, or where there is more than one, the last to expire, the Contractor shall lodge with the Superintendent a final payment claim and endorse it "Final Payment Claim".*
> *The Contractor shall include in that claim all moneys which the Contractor considers to be due from the Principal under or arising out of the Contract or any alleged breach thereof.*
> *After the expiration of the period for lodging a Final Payment Claim, any claim which the Contractor could have made against the Principal and has not been made shall be barred.*

AS4000-1997 Clause 37.4 provides:

> *Within 28 days after the expiry of the last defects liability period, the Contractor shall give the Superintendent a written final payment claim endorsed 'Final Payment Claim' being a progress claim together with all other claims whatsoever in connection with the subject matter of the Contract.*

The Principal/Superintendent will then issue the Final Certificate, and return the balance of any cash retention or security monies will be returned to the Contractor (with deductions as may be necessary for uncompleted work, if any).

AS2124-1992 Clause 42.8 provides:

> *Within 14 days after receipt of the Contractor's Final Payment Claim or, where the Contractor fails to lodge such claim, the expiration of the period specified in Clause 42.7 for the lodgement of the Final Payment Claim by the Contractor, the Superintendent shall issue to the Contractor and to the Principal a final payment certificate endorsed "Final Certificate". In the certificate the Superintendent shall certify the amount which in the Superintendent's opinion is finally due from the Principal to the Contractor or from the Contractor to the Principal under or arising out of the Contract or any alleged breach thereof.*

AS4000-1997 Clause 37.4 provides:

> *Within 42 days after the expiry of the last defects liability period, the Superintendent shall issue to both the Contractor and the Principal a final certificate evidencing the moneys finally due and payable between the Contractor and the Principal on any account whatsoever in connection with the subject matter of the Contract.*

Unlike other certificates, the Final Certificate will usually be evidence of the satisfactory completion of the Contractor's obligations under the Contract. The Principal is not (in standard form and other well drawn contracts) barred from making further claims (for example, defects may not become apparent in substantive structures for several years…).

AS2124-1992 Clause 42.8 provides:

> *Unless either party, either before the Final Certificate has been issued or not later than 15 days after the issue thereof, serves a notice of dispute under Clause 47, the Final Certificate shall be evidence in any proceedings of whatsoever nature and whether under the Contract or otherwise between the parties arising out of the Contract, that the Works have been completed in accordance with the terms of the Contract and that any necessary effect has been given to all the terms of the Contract which require additions or deductions to be made to the Contract Sum, except in the case of -*
> *(a) fraud, dishonesty or fraudulent concealment relating to the Works or any part thereof or to any matter dealt with in the said Certificate;*
> *(b) any defect (including omission) in the Works or any part thereof which was not apparent at the end of the Defects Liability Period, or which would not have been disclosed upon reasonable inspection at the time of the issue of the Final Certificate; or*
> *(c) any accidental or erroneous inclusion or exclusion of any work, plant, materials or figures in any computation or any arithmetical error in any computation.*

AS4000-1997 Clause 37.4 provides:

> *The final certificate shall be conclusive evidence of accord and satisfaction, and in discharge of each party's obligations in connection with the subject matter of the Contract except for:*
> *a) fraud or dishonesty relating to WUC or any part thereof or to any matter dealt with in the final certificate;*
> *b) any defect or omission in the Works or any part thereof which was not apparent at the end of the last defects liability period, or which would not have been disclosed upon reasonable inspection at the time of the issue of the final certificate;*
> *c) any accidental or erroneous inclusion or exclusion of any work or figures in any computation or an arithmetical error in any computation; and*
> *d) unresolved issues the subject of any notice of dispute pursuant to clause 42, served before the 7th day after the issue of the final certificate.*

6.3 VALUATION OF PROGRESS CLAIMS

6.3.1 Value of Completed Work/Value to Complete

The nature of a construction contract is that payment is to be made progressively throughout the completion of the Works until practical completion.

The Contractor's entitlement to payment, however, will be in accordance with the Contract Sum, not the **actual** value of work. All being equal the two amounts (the Contract Sum, and the actual value of the work), should be reasonably similar. The Contract Sum, however, is a matter for the tenderers to compete on and, accordingly, one could imagine that the Contract Sum could be greater than or less than the actual value of the work.

Accordingly, when the Superintendent comes to value the progress claims, he will usually make his assessment on the basis of percentage completion of the Works relative to the Contract Sum, rather than the actual value of work completed.

There are, however, a number of possible alternative methods for valuation which would include:
1. the value of the completed work on a pure valuation basis;
2. the value of the work still to be completed under the Contract, on a pure valuation basis, deducted from the total Contract Sum.

Where financiers are involved in the funding of construction work, the latter method of valuation has tended to be adopted from time to time, the financiers being concerned to ensure, for the purposes of their security, that there are at all times sufficient funds left in the finance facility to complete the work if necessary. Accordingly, in certain cases, the Superintendent in assessing the progress claims may be interested in the calculation of the value of the work to be completed, as opposed to the percentage of work completed on a pro-rata basis. Ultimately, this will be a subjective assessment by the Superintendent.

AS2124-1992 Clause 42.1 provides:

> *……. the Superintendent shall issue to the Principal and to the Contractor a payment certificate stating the amount of the payment which, in the opinion of the Superintendent, is to be made by the Principal to the Contractor or by the Contractor to the Principal…….*

AS4000-1997 Clause 37.2 provides:

> *The Superintendent shall, within 14 days after receiving such a progress claim, issue to the Principal and the Contractor:*
> *a) a progress certificate evidencing the Superintendent's opinion of the moneys due from the Principal to the Contractor pursuant to the progress claim and reasons for any difference ('progress certificate'); and*
> *b) a certificate evidencing the Superintendent's assessment of retention moneys and moneys due from the Contractor to the Principal pursuant to the Contract.*

6.3.2 Bill of Quantities/Fixed Price/Schedule of Rates

The Contract Sum which is included in the tenders is a matter for competition between the respective tenderers. The Contract will provide that the Contract Sum is to be a lump sum, a schedule of rates, or any other combination.

AS2124-1992 Clause 3.1 provides:

> *The Contractor shall execute and complete the work under the Contract. The Principal shall pay the Contractor -*
> *(a) for work for which the Principal accepted a lump sum, the lump sum;*
> *(b) for work for which the Principal accepted rates, the sum ascertained by multiplying the measured quantity of each section or item of work actually carried out under the Contract by the rate accepted by the Principal for the section or item,*
> *adjusted by any additions or deductions made pursuant to the Contract.*

AS4000-1997 Clause 2.1 provides:

> *The Contractor shall carry out and complete WUC in accordance with the Contract and directions authorised by the Contract.*
> *The Principal shall pay the Contractor:*
> *a) for work for which the Principal accepted a lump sum, the lump sum; and*
> *b) for work for which the Principal accepted rates, the sum of the products ascertained by multiplying the measured quantity of each section or item of work actually carried out under the Contract by the rate accepted by the Principal for the section or item,*
> *adjusted by any additions or deductions made pursuant to the Contract.*

The Principal will usually decide as to whether the Contract Sum is to be a fixed price, or alternatively, on a Schedule of Rates basis (for example, where the rough quantities are known, but for flexibility and/or difficulty of calculation reasons, the exact final quantities are not known and the Principal prefers to compare the tenderers on the basis of their unit rates rather than a total fixed price). (This is addressed in Section 1.) The Contract Sum may be calculated on a number of different bases, depending on the nature of the particular Contract:

Fixed Price

The tenderers will all bid a single price to be the Contract Sum. The price (subject to variations and other such matters expressly provided for in the Contract) will not vary, irrespective of the quantities ultimately

encountered on the Contract.

Schedule of Rates

The tenderers all submit a price based on unit rates. Those prices are, however, submitted pursuant to a schedule containing quantities, usually prepared by the Principal, which indicates quantities within a certain limit of accuracy. Where the quantities, however, are ultimately outside that limit of accuracy (whether or not that limit of accuracy is expressly provided in the Contract) those rates may ultimately be inapplicable under the Contract.

AS2124-1992 Clause 3.3 provides:

> ***3.3 Adjustment for Actual Quantities - Schedule of Rates***
> *Where otherwise than by reason of a direction of the Superintendent to vary the work under the Contract, the actual quantity of an item required to perform the Contract is greater or less than the quantity shown in the Schedule of Rates -*
> *(a) where the Principal accepted a lump sum for the item, the difference shall be valued under Clause 40.5 as if it were varied work directed by the Superintendent as a variation;*
> *(b) where the Principal accepted a rate for the item the rate shall apply to the greater or lesser quantities provided that where limits of accuracy are stated in the Annexure the rate shall apply to the greater or lesser quantities within the limits and quantities outside the limits shall be valued under Clause 40.5 as if they were varied work directed by the Superintendent as a variation.*
> *If a Schedule of Rates omits an item which should have been included, the item shall be valued under Clause 40.5 as if it was extra work directed by the Superintendent as a variation.*

AS4000-1997 Clause 2.5 provides:

> ***2.5 Adjustment for actual quantities***
> *Where, otherwise than by reason of a direction to vary WUC, the actual quantity of an item required to perform the Contract is greater or less than the quantity shown in a bill of quantities which forms part of the Contract or schedule of rates:*
> *a) the Principal accepted a lump sum for the item, the difference shall be a deemed variation;*
> *b) the Principal accepted a rate for the item, the rate shall apply to the greater or lesser quantities provided that where limits of accuracy for a quantity in a schedule of rates are stated in Item 11, the rate shall apply to the greater or lesser quantities within the limits, and quantities outside the limits shall be a deemed variation.*
> *If such a bill of quantities or schedule of rates omits an item which should have been included, the item shall be a deemed variation.*
> *Notwithstanding the preceding provisions of this subclause in respect of a bill of quantities, a variation shall not be deemed for actual quantities of an item pursuant to paragraph (a), or for an omitted item or any adjustment made for actual quantities of an item pursuant to paragraph (b), if the difference, the value of the omitted item or the adjustment respectively is less than $400.*

In assessing progress claims, therefore, the Superintendent will sometimes be required to have regard to whether certain quantities for particular items are within a limit of accuracy expressly or impliedly included for particular items in either a schedule of rates or a bill of quantities.

Where such items are outside such a limit of accuracy (whether an express limit of accuracy or an implied limit of accuracy) the Contractor will potentially be entitled to claim payment based on a reasonable sum for the work performed (usually referred to as a "quantum meruit" claim, to which we refer further in Part 6.4.3 below and generally in Section 10).

From time to time, the tenderers will be asked to bid on a fixed price basis but subject, however, to a bill of quantities. In such circumstances, the fixed price is to be applicable only so far as the bill of quantities is accurate within certain limits (whether or not those limits are expressly provided within the Contract itself).

In addition to the above, the Contract may also provide for the Contractor, after he has been awarded the Contract (and the price has been agreed) to prepare a Priced Bill of Quantities. The Priced Bill of Quantities is usually prepared to assist the valuation of progress claims, variations, and other assessment purposes.

Payment for Offsite Goods

The Contract will usually expressly provide whether the Contractor is entitled to include, in progress claims, an amount for goods which have been either ordered, or supplied, but for particular reasons not yet delivered to the site.

Such items might include, for example, bulk steel where that steel has to be purchased and then shipped to a fabrication site prior to delivery to the construction site.

The Principal is potentially exposed to loss where goods are to be paid for which have not yet been delivered to the site (for example, if the goods are lost, stolen, or damaged while offsite and out of the Principal's control, or alternatively if the goods are not adequately identified and the Contractor, having received payment for the goods, then goes into liquidation, thereby exposing the Principal to a potential dispute over ownership of the goods).

AS2124-1992 Clause 42.4 Alternative A provides:

> *If the Contractor claims payment for plant or materials intended for incorporation in the Works but not incorporated the Principal shall not be obliged to make payment for such plant or materials but the Principal may make payment, if the Contractor establishes to the satisfaction of the Superintendent that -*
> *(a) such plant or materials have reasonably but not prematurely been delivered to or adjacent to the Site;*
> *(b) ownership of such plant and materials will pass to the Principal upon the making of the payment claimed; and*
> *(c) such plant or materials are properly stored, labelled the property of the Principal and adequately protected.*
> *Upon payment to the Contractor of the amount claimed, the plant or materials the subject of the claim shall be the property of the Principal free of any lien or charge.*

AS4000-1997 Clause 37.3 provides:

> *The Principal shall not be liable to pay for unfixed plant and materials unless they are listed in Item 29 and the Contractor:*
> *a) provides the additional security in Item 13(e); and*
> *b) satisfies the Superintendent that the subject plant and materials have been paid for, properly stored and protected, and labelled the property of the Principal.*
> *Upon payment to the Contractor and the release of any additional security in paragraph (a), the subject plant and materials shall be the unencumbered property of the Principal.*

The Contract should always expressly provide for, at the minimum, the following where payment is to be made for offsite goods:

- adequate written evidence of the passing of title in the goods to the Principal, upon payment for those goods;
- adequate identification of the particular goods, appropriate labelling, and separation of those goods from other goods not within the ownership of the Principal, at all times;
- adequate insurance of those goods while out of control of the Principal, so as, in the event of their loss, to enable Principal to have, at a minimum, a good claim against an insurer for the cost of those goods.

In the absence of any of the above, the Superintendent should not certify for payment of goods which have not yet been delivered to the site.

6.4 VARIATIONS

Whether Work Constitutes a Variation

The usual area in which the Superintendent is required to regularly exercise legal judgments under the Contract is in the authorisation and valuation of variations.

These are two separate issues.

The Contractor may assert from time to time that particular works which he has been required to perform (either in accordance with the contract documents, or alternatively pursuant to a direction of the Superintendent) constitute a Variation. The test applied by the Courts is, in substance, that particular work constitutes a variation if it is work outside the works upon which the Contractor tendered/contracted, having regard to the terms of the Contract.

A number of issues regularly arise in relation to whether or not work constitutes a variation, including:

- whether work subsequently performed by the Contractor is or is not included in the contract documents
- whether particular work to be performed by the Contractor is, in accordance with the terms of the Contract, to be inferred from the contract documents
- whether the circumstances in which work properly described in the contract documents is to be performed are different from the circumstances described in the tender/contract documents.

These types of variations differ from the easy to understand type of variation, namely where the Principal wishes to change the work described in the original contract documents and seeks a quotation from the Contractor prior to that work being performed, which quotation the Principal then accepts and orders the variation or not.

The Superintendent's assessment of whether or not work constitutes a variation is more than a technical assessment. It requires skills in interpreting contract documents, a judicial impartiality in listening to the views of the Principal and the Contractor, and an ability to interpret documents which often are non-specific in relation to the subject matter of the asserted variation.

As was the case in relation to the assessment of complex claims under the Contract in certification of progress claims, the Superintendent is appointed by both parties to the contract to make this assessment. The choice of the Superintendent is, in theory, a matter for the parties at the time of entering into the Contract, but is, in practice, a matter which is usually decided solely by the Principal.

Payment for Variations without Written Instruction

The Contract will usually provide that the Contractor is not entitled to payment for variations unless the Principal/Superintendent has given the Contractor a written instruction.

In fact, there are several cases where the Contractor will be entitled to additional payment, albeit that he has not been given a written instruction. Those examples include:

- where the work required to be performed by the Contractor is beyond the scope of the Works described in the contract documents
- where work is wrongly rejected by the Principal/Superintendent, and is therefore re-performed/rectified by the Contractor
- where there is a separate agreement to pay for the additional work, or to waive the requirements for the written instruction

The basis for claiming additional payment in these circumstances is not to be found in the Contract Conditions. The basis for the claim would be that the Contractor was directed to perform extra work, beyond that which was included in the Contract. In such circumstances, the Contractor’s claim is based in restitution rather than (or even despite) the express contract provisions.

Valuation of Variations

The second complex area of assessment for the Superintendent in relation to variations is in the **valuation of variations**.

The common contract regime for valuing variations is, generally, as follows:

- the Principal (usually through the Superintendent acting as agent of the Principal) and the Contractor attempt to agree on the value of the approved variation;

- failing such agreement, the Superintendent assesses the value of the variation in accordance with any pre-agreed (at the time of entering into the Contract) rates which may be applicable for such variations;
- where there is no such applicable pre-agreement, the Superintendent determines a "reasonable sum", including an amount for the builders on-costs and profit (but, depending in all circumstances, on the express language of the contract).

This regime cannot be avoided. In practice, the tiered analysis of the valuation of variations is set out in detail.

AS2124-1992 Clause 40.5 provides:

> ***40.5 Valuation***
> *Where the Contract provides that a valuation shall be made under Clause 40.5, the Principal shall pay or allow the Contractor or the Contractor shall pay or allow the Principal as the case may require, an amount ascertained by the Superintendent as follows -*
> *(a) if the Contract prescribes specific rates or prices to be applied in determining the value, those rates or prices shall be used;*
> *(b) if Clause 40.5(a) does not apply, the rates or prices in a Priced Bill of Quantities or Schedule of Rates shall be used to the extent that it is reasonable to use them;*
> *(c) to the extent that neither Clause 40.5(a) or 40.5(b) apply, reasonable rates or prices shall be used in any valuation made by the Superintendent;*
> *(d) in determining the deduction to be made for work which is taken out of the Contract, the deduction shall include a reasonable amount for profit and overheads;*
> *(e) if the valuation is of an increase or decrease in a fee or charge or is a new fee or charge under Clause 14.3, the value shall be the actual increase or decrease or the actual amount of the new fee or charge without regard to overheads or profit;*
> *(f) if the valuation relates to extra costs incurred by the Contractor for delay or disruption, the valuation shall include a reasonable amount for overheads but shall not include profit or loss of profit;*
> *(g) if Clause 11(b) applies, the percentage referred to in Clause 11(b) shall be used for valuing the Contractor's profit and attendance; and*
> *(h) daywork shall be valued in accordance with Clause 41.*
> *When under Clause 40.3 the Superintendent directs the Contractor to support a variation with measurements and other evidence of cost, the Superintendent shall allow the Contractor the reasonable cost of preparing the measurements or other evidence of cost that has been incurred over and above the reasonable overhead cost.*

AS4000-1997 Clause 36.4 provides:

> ***36.4 Pricing***
> *The Superintendent shall, as soon as possible, price each variation using the following order of precedence:*
> *a) prior agreement;*
> *b) applicable rates or prices in the Contract;*
> *c) rates or prices in a priced bill of quantities, schedule of rates or schedule of prices, even though not Contract documents, to the extent that it is reasonable to use them; and*
> *d) reasonable rates or prices, which shall include a reasonable amount for profit and overheads,*
> *and any deductions shall include a reasonable amount for profit but not overheads.*

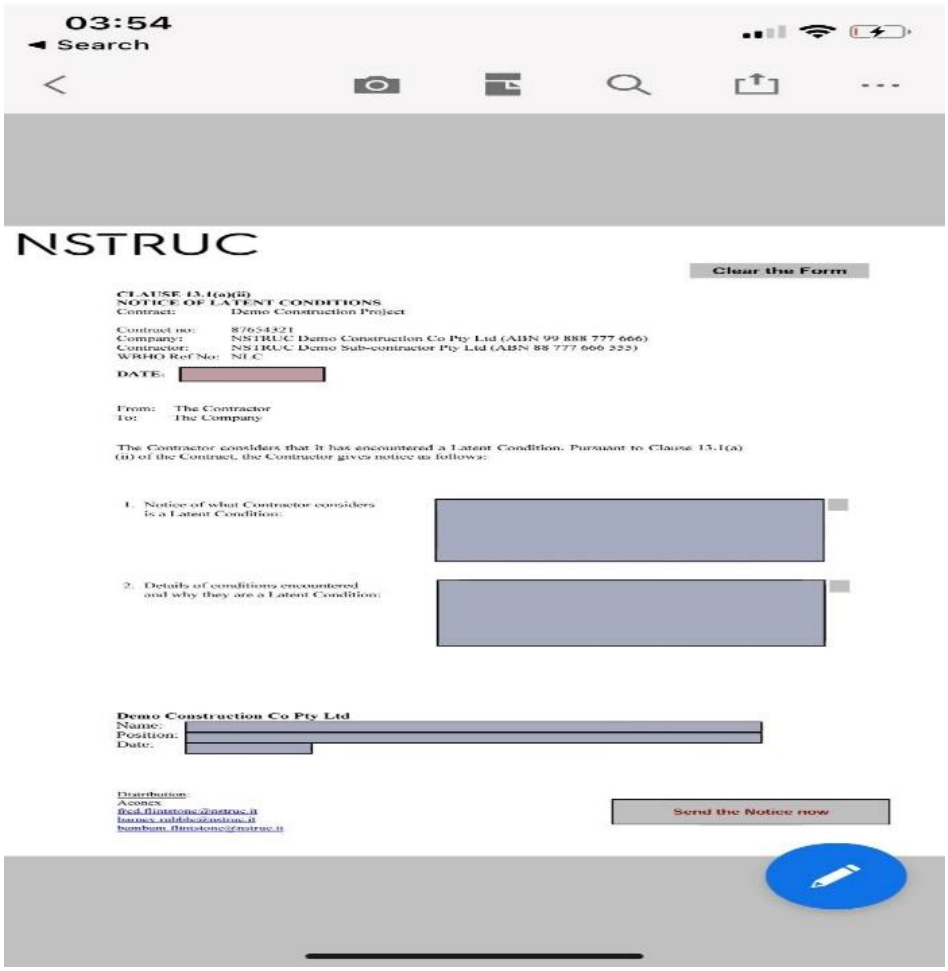
Effectively, the Superintendent is being asked to put a valuation on works which, by definition, was not agreed between the parties at the time of entering into the Contract. It is work which the Contractor is obliged to perform (the Contractor bound himself to do this by entering into a contract which included a variation clause). The parties did not agree, at the time of entering into the Contract, on how much the Contractor would be paid for such work. They merely agreed on the valuation regime.

It is a contractual term, therefore, between the parties, decided upon at the time of entering into the Contract, that the Superintendent is to have the last word on the valuation of variations. This valuation, however, as in the case of the valuation of progress claims, is “on account” (either party may still refer that valuation to the dispute process under the Contract).

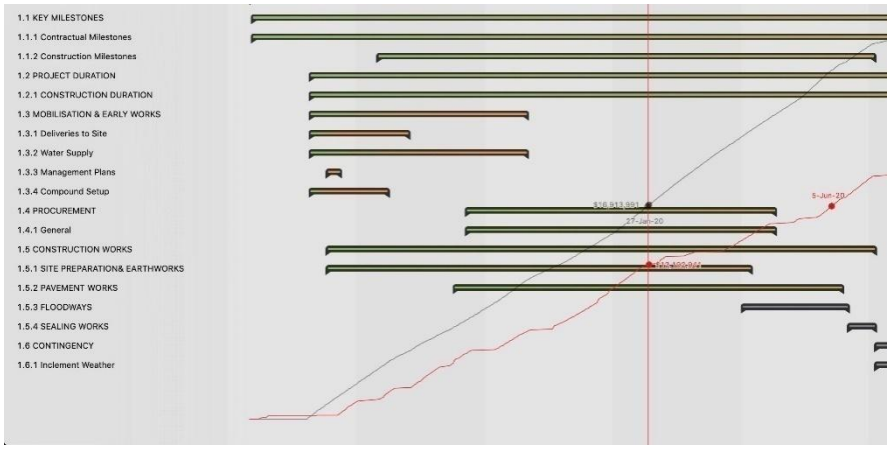
Contract Management Tools:

The tools to monitor progress on construction projects are extremely good.

For example, this type of edit-able pdf Notice can be conveniently launched from a mobile phone, on-site:

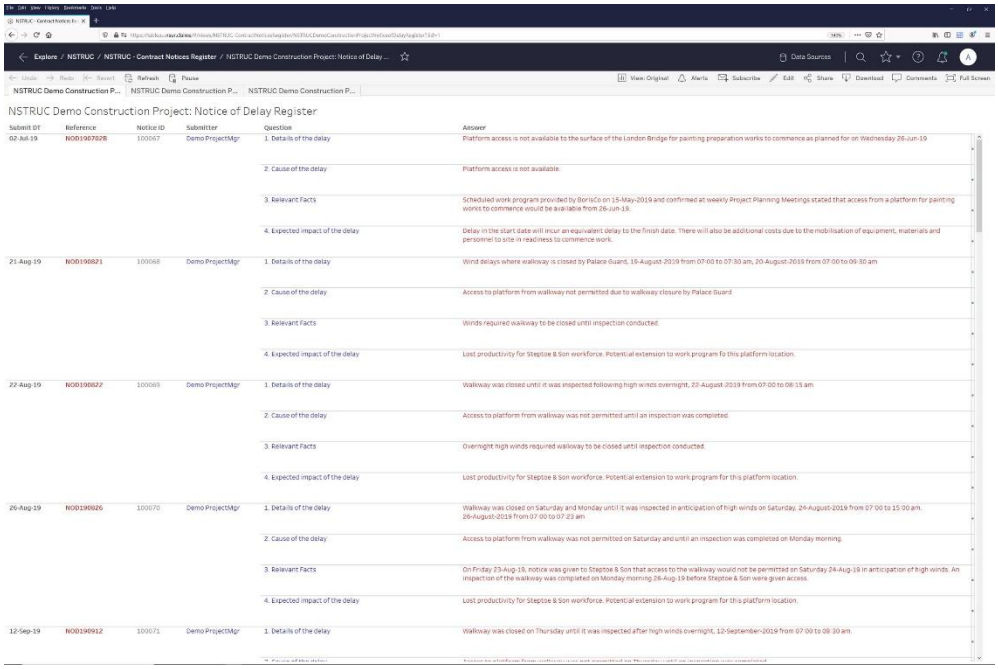


And, for example, this type of drag-able Gantt chart can be conveniently launched from a mobile phone, on-site, showing the effect of a particular Variation on the overall program:



I predict that updated overall programs may soon become an attachment to every Notice of Potential Variation and Variation Claim.

Then, for example, that edit-able pdf Notice of Potential Variation and/or Variation Claim can be conveniently, automatically, included in an automatically updated Register of Notice of Potential Variation and a Variation Register (automatically included in every Progress Claim), for example:



NSTRUC Demo Construction Project: Notice of Delay Register

Submit DT	Reference	Notice ID	Submitter	Question	Answer
02-Jul-19	NOD1907028	100067	Demo ProjectMgr	1. Details of the delay	Platform access is not available to the surface of the London Bridge for painting preparation works to commence as planned for on Wednesday 26-Jun-19
				2. Cause of the delay	Platform access is not available.
				3. Relevant Facts	Scheduled work program provided by BorisCo on 15-May-2019 and confirmed at weekly Project Planning Meetings stated that access from a platform for painting works to commence would be available from 26-Jun-19.
				4. Expected impact of the delay	Delay in the start date will incur an equivalent delay to the finish date. There will also be additional costs due to the mobilisation of equipment, materials and personnel to site in readiness to commence work.
21-Aug-19	NOD190821	100068	Demo ProjectMgr	1. Details of the delay	Wind delays where walkway is closed by Palace Guard, 19-August-2019 from 07:00 to 07:30 am, 20-August-2019 from 07:00 to 09:30 am
				2. Cause of the delay	Access to platform from walkway not permitted due to walkway closure by Palace Guard
				3. Relevant Facts	Winds required walkway to be closed until inspection conducted.
				4. Expected impact of the delay	Lost productivity for Steptoe & Son workforce. Potential extension to work program fo this platform location.
22-Aug-19	NOD190822	100069	Demo ProjectMgr	1. Details of the delay	Walkway was closed until it was inspected following high winds overnight, 22-August-2019 from 07:00 to 08:15 am
				2. Cause of the delay	Access to platform from walkway was not permitted until an inspection was completed.
				3. Relevant Facts	Overnight high winds required walkway to be closed until inspection conducted.
				4. Expected impact of the delay	Lost productivity for Steptoe & Son workforce. Potential extension to work program for this platform location.
26-Aug-19	NOD190826	100070	Demo ProjectMgr	1. Details of the delay	Walkway was closed on Saturday and Monday until it was inspected in anticipation of high winds on Saturday, 24-August-2019 from 07:00 to 15:00 am. 26-August-2019 from 07:00 to 07:23 am
				2. Cause of the delay	Access to platform from walkway was not permitted on Saturday and until an inspection was completed on Monday morning.
				3. Relevant Facts	On Friday 23-Aug-19, notice was given to Steptoe & Son that access to the walkway would not be permitted on Saturday 24-Aug-19 in anticipation of high winds. An inspection of the walkway was completed on Monday morning 26-Aug-19 before Steptoe & Son were given access.
				4. Expected impact of the delay	Lost productivity for Steptoe & Son workforce. Potential extension to work program for this platform location.
12-Sep-19	NOD190912	100071	Demo ProjectMgr	1. Details of the delay	Walkway was closed on Thursday until it was inspected after high winds overnight, 12-September-2019 from 07:00 to 08:30 am.

I predict that this type of notice/update to program/register process, launched from a mobile phone, on-site, may soon become the go-to process on major projects, firstly, to comply with the contract requirements of a particular contract, but secondly, more importantly, to assist in the actual management of the construction project.

6.5 LATENT CONDITIONS

In certain circumstances, the Contract will expressly provide an entitlement to extension of time and/or additional payment where the Contractor encounters site conditions that differ from those upon which the tender was based.

For example, Clause 12.1 of AS2124-1992:

> *Latent Conditions are -*
> *(a) physical conditions on the Site or its surroundings, including artificial things but excluding weather conditions, which differ materially from the physical conditions which should reasonably have been anticipated by the Contractor at the time of the Contractor's tender if the Contractor had -*
> *(xv) examined all information made available in writing by the Principal to the Contractor for the purpose of tendering; and*
> *(xvi) examined all information relevant to the risks, contingencies and other circumstances having an effect on the tender and obtainable by the making of reasonable enquiries; and*
> *(xvii) inspected the Site and its surroundings; and*

Clause 26.1 of AS4000-1997 provides:

> *Latent conditions are physical conditions on the site and its near surrounds, including artificial things but excluding weather conditions, which differ materially from the physical conditions which should reasonably have been anticipated by a competent Contractor at the time of the Contractor's tender if the Contractor had inspected:*
>
> *a) all written information made available by the Principal to the Contractor for the purpose of tendering;*
>
> *b) all information influencing the risk allocation in the Contractor's tender and reasonably obtainable by the making of reasonable enquiries; and*
>
> *c) the site and its near surrounds.*

In *BMD Major Projects Pty Ltd v Victorian Urban Development Authority* [2009] VSCA 221 (7 October 2009), the Victorian Court of Appeal considered a latent conditions claim in relation to a contract in which a contractor was to excavate, fill and rehabilitate reclaimed land in a quarry for a residential development. The latent conditions clause provided as follows:

> *physical conditions on the Site or its surroundings, including artificial things but excluding weather conditions, which differ materially from the physical conditions which should reasonably have been anticipated by [BMD] at the time of [BMD's] tender …*

The Court of Appeal made general observations, to the effect that:

1. The test (under the particular Clause) was to be determined objectively; that is, that what should reasonably have been anticipated by the contractor at the time of tender is to be determined by an objective assessment of the facts rather than by what the particular contractor may have done or not have done.

2. The enquiry required a determination of questions of fact, namely:
   a. what conditions had been encountered;
   b. whether they were physical conditions;
   c. whether they differed materially from those ascertainable; and
   d. what could have reasonably been anticipated.

3. The effect of a latent condition clause is to:

   > *shift to the principal the economic burden of a risk which had been contractually assumed by the contractor. It is fundamental to the shifting of that risk that the occasion for the shift be, as much as possible, beyond the control or fault of the parties but be determined by, and be dependent upon, objective criteria and measures.*

4. Though the particular principal had clearly excluded any warranty as to the accuracy of its documents, even so, the fact that it gave out the documents as the basis for a fixed-price tender was something significant to weigh in the balance in determining how far a reasonable contractor should be expected to go in comprehending the effects of any other possibly relevant material in its possession or which it might obtain on reasonable inquiry.

In *Glenorchy City Council and Tasmania v Tacon Pty Ltd trading as Tacon Civil Construction* [2000] TASSC 51 (26 May 2000), the Tasmanian Supreme Court upheld an arbitrator's decision on a latent conditions claim under a contract for the construction of a sewer outfall pipe (the contract included Clause 12.1 of AS2124-1992). The Court (Cox CJ) said as follows:

> *The definition contemplates a difference of conditions between what are in fact encountered and what the contractor should reasonably have expected if he had examined the relevant information, rather than between what are encountered and what the contractor, having examined the information, did reasonably expect. ..... ……(the Arbitrator's) conclusion that the contractor could not reasonably have anticipated the conditions encountered was a determination of fact which this Court has no jurisdiction to review.*
>
> (emphasis added)

In *Ryde City Council v Transfield Pty Ltd t/as Transfield Tunnelling and Anor* [2002] NSWSC 1037 (7 November 2002), the NSW Supreme Court upheld an arbitrator's[10] decision on a latent conditions claim, under a contract for the construction of a major storm water drainage tunnel. The particular contract defined Latent Conditions, so far as relevant:

> *sub-surface physical conditions, including artificial obstructions, encountered by the Contractor at the Site during the execution of the Work, which differ materially … but does not include …. any conditions …… should reasonably have foreseen as likely to be encountered during the execution of the Works .*

The arbitrator (and ultimately the Court) was persuaded to some extent as to what "should reasonably have been foreseen", by the extent to which the actual work ultimately differed from the work originally intended.

6.6 "TOTAL COSTS CLAIMS"

From time to time, construction contractors will have multiple claims for extension of time and/or additional payment that are so inter-connected that separating each claim, and complying strictly with the particular requirements of the construction contract, is impractical. Contractors will often present their claim in that circumstance as a single, all-encompassing. "total costs claim".

The courts, however, have universally concluded that the total cost method is an improper, and invalid method because, inter alia, that methodology did not take into account such factors as:

a) errors in the original estimate;
b) risks with respect to programming;
c) risks with respect to:
    i) design development;
    ii) design errors;
    iii) design growth;
    iv) design changes; and
    v) design management;
d) risks with respect to management of procurement;
e) potential inefficient production practices;
f) quality and management of the workforce; and
g) additional costs caused by the work being behind schedule through causes for which J C Reid is responsible.

The Australian courts (consistent with the English and USA courts) have adopted a view towards total costs claims as follows:

1. The total cost/time method is a less reliable manner of assessing extra cost flowing from an event than proof of direct cost so incurred.

2. It will be adopted only if:
    (a) a more reliable method is impossible or highly impracticable or where the plaintiff's inability to prove its claim by more conventional means is not due to its own failure to maintain proper records;
    (b) the contract price is realistic;
    (c) the actual costs are reasonable;
    (d) the claimant is not responsible for any of the added costs.

[10] The arbitrator was Mr T McDougall.

These issues were reviewed in a 1995 article by the Hon Mr Justice David Byrne in a 1995 article entitled, "Total Costs and Global Claims", (1995) 13 BCL 397[11]. Mr Justice Byrne considered, among other things:

> *The question here is whether it is legitimate for a claimant to present a global claim or for a tribunal which has heard the claim to give judgment for a global sum or a global time extension without allocating any part of that sum or any part of that time to any particular claim.*

His Honour considered 2 English authorities and concluded:

> *....These two English cases stand as authority for the proposition that it is legitimate for a tribunal to make a global award of a sum of money payable under a contract, notwithstanding that:*
> *(a) the events which give rise to the entitlement are numerous and differ;*
> *(b) the contractual provisions under which the entitlement arises are various, provided that the contractual requirements for each have been satisfied; and*
> *(c) no specific amount has been proved to flow from any one of these events.*
> *But, in them, the court emphasises' the right of the tribunal to make such an award arises where and only where:*
> *(i) the loss and expense attributable to each head of claim cannot in reality be disentangled;*
> *(ii) there is a complex interaction between the consequences of the events; and*
> *(iii)the inability to disentangle the consequence of these events is not the result of delay on the part of the contractor in making the claim.*

His Honour reviewed a substantive body of USA cases and drew the following principles (respectfully set out above as the correct legal position):

> *The cases suggest.... that these claims are considered more benevolently where they are brought, not for damages for breach of contract, but for a contractual adjustment of the agreed price. They have, however, laid out a series of strict principles for their disposition.*
> *(1) The total cost/time method is a less reliable manner of assessing extra cost flowing from an event than proof of direct cost so incurred. It will be adopted only if a more reliable method is impossible or highly impracticable" or where the plaintiff's inability to prove its claim by more conventional means is not due to its own failure to maintain proper records.'[4]*
> *(2) The contract price is realistic.*
> *(3) The actual costs are reasonable.*
> *(4) The claimant is not responsible for any of the added costs.*

His Honour concluded:

> *It is clear from the US cases that total cost/time claims are acceptable only as a last resort'[32] when more orthodox claim methodology based on direct evidence of loss or some variant of this is unavailable or impracticable. It has been said that these claims are never favoured by the Court," available only "in an extreme case and under proper safe-guards", where no alternative method is available, as a last resort and "a rare case". These observations have been based on the logical and practical deficiencies of the method which have already been discussed and have, in many cases in the US, led to the wholesale rejection of claims based on this methodology.*
> *Nevertheless, having said this, it does appear that the Court has accepted total cost/time claims where the conditions have been met, and more readily, modified total cost/time claims, particularly in claims for the adjustment of contractual price or time. .....*

It seems to me that, though our systems are substantially better and more capable of breaking out the individual claims and delays, so that strict compliance with the requirements of the construction contract may be more possible, in the right circumstances, allowances can be incorporated into the particular claims to address the concerns expressed above, and it may be that a court/arbitrator/expert determination may be persuaded to

[11] "*Total Costs and Global Claims*", the Hon Mr Justice David Byrne, (1995) 13 BCL 397. His Honour was the Victorian Supreme Court Building Cases Judge for several years.

7. QUALITY

7.1 REQUIREMENTS UNDER THE CONTRACT

Quality Requirements in Contract Documents

The provisions, historically, which set out the quality requirements are non-comprehensive', the Contract usually relies on the subjective assessment of a person such as the Superintendent. Accordingly, when one looks at the standard form such as, for example, AS2124-1992, there is little or no guidance as to what is to be suitable in defining the standard of quality. The Contract merely states that the quality of the Work shall be in accordance with the contract documents.

AS2124-1992 Clause 30.1 provides:

> ***30.1 Quality of Materials and Work***
> *The Contractor shall use the materials and standards of workmanship required by the Contract. In the absence of any requirement to the contrary, the Contractor shall use suitable new materials.*

AS4000-1997 Clause 29.1 provides:

> ***29.1 Quality of material and work***
> *Unless otherwise provided the Contractor shall use suitable new materials and proper and tradesmanlike workmanship.*

There is a comprehensive regime, however, of assessment as to quality by, for example, the Superintendent, and then the giving of directions to rectify defective work. In modern times, this position has been changed by the introduction of quality assurance systems. The substantive content of a quality assurance system relates to procedures whereby quality of work is checked, discussed, certain certificates are required to be completed by particular parties, and generally the procedures are set out which will ensure the delivery of appropriate quality on a contract. Essentially, therefore, the determination of quality remains a subjective assessment by particular persons nominated under the particular contract.

Implied Terms

Most contracts will expressly provide that works are to be performed to achieve certain performance criteria, in particular that the work is to be:

1. fit for the purpose for which it was intended;
2. merchantable quality;
3. unless otherwise specified, new;
4. performed with reasonable care and skill....

These pre-requisites, usually expressly included in the contract, are common to many contracts, not merely engineering contracts. In fact, were these requirements not to be expressly included in the contract, it would be likely that they would be implied into the Contract in any event.

There are a number of reasons why such terms as set out above are usually implied, (if not expressly included) in engineering contracts, including:

- such terms are likely to pass the implied term tests;
- such terms are, from time to time implied into such contracts by legislation (for example, the *Competition and Consumer Act 2011 (Cth)*[12];
- common usage (it is usual, in such engineering contracts, that such terms are accepted amongst members of the industry, though, in particular cases, depending on the nature of the particular work to be performed, one could imagine circumstances where the terms would not be implied...)

Accordingly, in most engineering contracts, in addition to the express specification of the works required to be performed and set out in detail in the Drawings and Specifications, there will usually be a number of implied terms that the works be fit for the purpose for which are intended, that the goods be of merchantable quality, that

[12] Prior to the *Competition and Consumer Act 2011 (Cth),* renaming and re-structuring the *Trade Practices Act 1974 (Cth),* this was contained in several Acts, including the *Trade Practices Act 1974 (Cth), Goods Act 1958, Fair Trading Act...*

the materials, unless otherwise specified, be new, and that the workmanship be performed to a standard of reasonable care and skill.

Codes

The nature of engineering contracts is such that a number of Standards Australia (Standards Australia) Codes and usually be expressly included in the specification, or where no express inclusion is made, may be implied into the Contract. For example, where structural steel work is required, one would expect that the code on structural steel work would be either expressly referred to in the specification, or if not expressly included, that there would be an implied term that all work conform to that Code.

A difficulty arises from time to time in preparing those contracts. On one hand, the natural intention of draftsman of such contracts, when preparing the Drawings and Specifications, is to expressly refer to particular Standards Australia Codes, particularly related to the area of work to be performed under the Contract. (For example, if there is to be structural steel work, the tenancy is to expressly refer to the Standards Australia Code on structural steel work.) On the other hand, however, there is an interesting contract interpretation issue, namely that where particular codes are expressly referred to in the specification, one could infer that other codes, not expressly included, do not need to be complied with.

The likelihood is, however, that in the absence of expressly excluding an obligation to comply with any particular code, that a Court if it ever needed to do so, would interpret any contract as to include an implied term, at least, that Codes, where relevant, were to be complied with.

There is a view (wrongly) expressed from time to time that as a matter of law all Codes be complied with. In fact an examination of the Codes in most instances, indicates an obligation to exercise an engineering judgment. Further, there is, in fact, rarely any express obligation pursuant to legislation and/or any building regulations that particular Standards Australia Codes be complied with. In all those circumstances, therefore, it is unlikely that one could simply presume that, as a matter of law, all Standards Australia Codes must be complied with. They do not have the force of legislation.

Having regard to the common usage of such Codes, however, and the usual practice of requiring, as a minimum, compliance with particular codes in relation to particular such work, it is likely, it seems that the engineering contracts would usually be interpreted as including, at least, an implied term that codes were generally to be complied with.

7.2 **DEFECTS**

Judgment of the Superintendent

In most engineering contracts there is a person in the role of the Superintendent (whether it be a Superintendent or the principal himself performing the same role). The test on quality, historically, in engineering contracts, is exercised by that person subjectively.

The identification of defects in engineering works can be complex. It will usually require a personal engineering skill on the part of the person making the assessment. Further, such judgments are often the subject of bitter disputes. For example, a contractor may take the view that work has been satisfactorily completed, albeit that some minor defects are apparent (for example rough fabrication on steel work, or inaccuracies in fabrication elements), those minor defects being capable of easy rectification. Accordingly, therefore, the Superintendent when making an assessment as to quality, will usually be required to exercise engineering judgment, and contract judgment. The determination by a Superintendent that work is “defective” will usually have serious consequences and it is likely, perhaps, that this will colour the Superintendent’s subjective engineering judgment.

The test remains, however, under most engineering contracts, as to whether work meets the relevant quality standards, a subjective assessment by the Superintendent.

Direction to Remedy

Where the Superintendent concludes that work is defective, there is a usual regime which the Superintendent can follow to procure compliance by the Contractor with the quality standards under the Contract. The first step which

the Superintendent should follow is to give the Contractor formal notice, in writing, that particular work is defective, and that such work is to be remedied.

AS2124-1992 Clause 30.3 provides that the Superintendent may give the Contractor a notice to rectify defective work, at the contractor's expense:

> ***30.3 Defective Materials or Work***
> *If the Superintendent discovers material or work provided by the Contractor which is not in accordance with the Contract, the Superintendent may direct the Contractor to -*
> *(a) remove the material from the Site;*
> *(b) demolish the work;*
> *(c) reconstruct, replace or correct the material or work; or*
> *(d) not to deliver the material or work to the Site.*
> *The Superintendent may direct the times within which the Contractor must commence and complete the removal, demolition, replacement or correction.*
> *If the Contractor fails to comply with a direction issued by the Superintendent pursuant to Clause 30.3 within the time specified by the Superintendent in the direction and provided the Superintendent has given the Contractor notice in writing that after the expiry of 7 days from the date on which the Contractor receives the notice the Principal intends to have the work carried out by other persons, the Principal may have the work of removal, demolition, replacement or correction carried out by other persons and the cost incurred by the Principal in having the work so carried out shall be a debt due from the Contractor to the Principal.*

AS4000-1997 Clause 29.3 provides:

> ***Defective work***
> *If the Superintendent becomes aware of work done (including material provided) by the Contractor which does not comply with the Contract, the Superintendent shall as soon as practicable give the Contractor written details thereof. If the subject work has not been rectified, the Superintendent may direct the Contractor to do any one or more of the following (including times for commencement and completion):*
> *a) remove the material from the site;*
> *b) demolish the work;*
> *c) reconstruct, replace or correct the work; and*
> *d) not deliver it to the site.*
> *If:*
> *a) the Contractor fails to comply with such a direction; and*
> *b) that failure has not been made good within 8 days after the Contractor receives written notice from the Superintendent that the Principal intends to have the subject work rectified by others,*
> *the Principal may have that work so rectified and the Superintendent shall certify the cost incurred as moneys due from the Contractor to the Principal.*

The effect of that notice is to require the contractor to rectify those works within a reasonable time. Failing this, the Superintendent may choose to give a further notice threatening to take those works out of the contractor's hands and rectified, at the contractor's expense, by others.

The notice requiring that rectification should be clear and should expressly refer to the clause pursuant to which the notice is being made. In particular, the Superintendent should be careful to ensure that the direction is clear that the works are required because the contractor has failed to comply with the contract. There is a common dispute where the Superintendent gives such a direction. The contractor will usually assert that the work is either not defective, or that he will carry out the necessary rectification at a more convenient time, that necessary rectification being minor and more conveniently performed as a final clean up. Further, in some cases, the notice if not clearly given might be construed (usually wrongly) as a direction to perform additional works as a variation.

For example, the form of the Notice under AS2124-1992 Clause 30.3 might be as follows:

NOTICE PURSUANT TO AS2124-1992 CLAUSE 30.3

PROJECT:
CONTRACT NO:
PRINCIPAL:
CONTRACTOR:

DATE ISSUED:

TO: The Contractor

Pursuant to Clause 30.3 of the General Conditions of Contract, the Superintendent notifies the Contractor that the following materials or work are not in accordance with the Contract:

[[insert details]]

The Superintendent directs the Contractor to reconstruct, replace or correct the material and/or work set out above ("the rectification work") and directs that the Contractor complete the rectification work within [[ ]] days of the date upon which the Contractor receives this notice

AND TAKE NOTICE THAT if the Contractor fails to comply with this direction within the time specified in this direction then after the expiry of [[ ]] days from the date on which the Contractor receives this notice the Principal intends to have the rectification work carried out by other persons, and the cost of that rectification incurred by the Principal shall be a debt due from the Contractor to the Principal.

……..
Superintendent

To complicate matters further, from time to time, the contractor might conclude that the works may require rectification, but that the performance of that rectification would be outside the terms of the contractor upon which he tendered. Again, in that circumstance, even if the Superintendent clearly required the works to be rectified, those works would be performed as a variation.

7.3 QUALITY ASSURANCE PROGRAMS

Nature of Programs

In the last 20 years or so, major construction contract works have tended to be performed pursuant to, amongst other things, Quality Assurance Programs. Quality Assurance Programs are, by nature, a structured method of the parties agreeing on procedures to test, record, certify, and if necessary, rectify, all relevant aspects of quality on a particular contract. Accordingly, programs usually require matters such as:

- the provision of particular forms recording test results
- the completion of forms and signing off of test result forms by each of the parties
- the preparation of lists of items requiring rectification
- the correction of those defective work items
- schedules of items requiring signing off by the Superintendent/Principal (as the case may require)

Such programs are, by their nature, preventative measures aimed at preventing the works being completed with defects. They are pro-active in nature.

Contractual Requirement to Comply

Quality Assurance Programs have only been used in Australia, substantively, in the last 20 years or so. For this reason, the major standard form contracts in Australia are still to embrace Quality Assurance Programs completely. To the extent that such major standard forms currently envisage the use of Quality Assurance Programs, they tend towards requirements to the effect that Quality Assurance Programs shall be complied with "if" such programs are provided for in the contract documents (i.e. the major standard forms do not require Quality Assurance Programs, merely compliance with such programs if they are provided elsewhere).

AS2124-1992 Clause 30.2 (an optional clause) provides:

> ***30.2 Quality Assurance***
> *The Contractor shall, if requirements are so stated in the Contract -*
> *(a) plan, establish and maintain a quality system which conforms to those requirements;*
> *(b) provide the Superintendent with access to the quality system of the Contractor and each of the subcontractors of the Contractor to enable monitoring and quality auditing.*
> *Any such quality system shall be used only as an aid to achieving compliance with the Contract and to document such compliance. Such system shall not relieve the Contractor of the responsibility to comply with the Contract.*
> ***NOTE:** The inclusion of Quality Assurance requirements in a contract will require detailed clauses in the Specification or elsewhere in the Contract which have regard to the Quality Standard selected for the work.*

AS4000-1997 Clause 29.2 provides:

> ***29.2 Quality assurance***
> *If the Contract elsewhere requires further quality assurance, the Contractor shall:*
> *a) plan, establish and maintain a conforming quality system; and*
> *b) ensure that the Superintendent has access to the quality system of the Contractor and subcontractors so as to enable monitoring and quality auditing.*
> *Any such quality system shall be used only as an aid to achieving compliance with the Contract and to document such compliance. Such system shall not discharge the Contractor's other obligations under the Contract.*

In addition, the major standard forms have tended to expressly provide that the mere compliance with a Quality Assurance Program does not, in itself, satisfy totally the Contractor's obligations of vis-a-vis quality under the Contract.

To date, therefore, the compliance with the quality requirements of the Contract still remains a subjective assessment for the Superintendent albeit that the likelihood of achieving such quality objectives is enhanced by reason of complying with any required Quality Assurance Programs.

7.4 DEFECTS LIABILITY PERIOD

Obligation and Privilege of the Contractor

Once the Contractor achieves practical completion, the Defects Liability Period will commence.

Typically, on major engineering contracts, there will be a 12 months Defects Liability Period within which defects which become apparent are to be rectified, upon the Contractor being given reasonable notice, by the Contractor at his expense.

The Defects Liability Period may extend for any time, that being a matter for the parties to negotiate under the Contract, however the convention is for the Defects Liability Period on major works to be of the order of 12 months. The period might be as little as, for example, 12 weeks on a minor residential building contract, or as long as several years on a major industrial equipment contract.

The critical obligation throughout the Defects Liability Period on the Contractor is that upon being given reasonable notice he attends the site (remembering that by this time he has left the site), within a reasonable period, and rectifies the defect.

There is a fundamental misconception as to the nature of this obligation. In fact, the Defects Liability Period provisions constitute **both** a **right** and an **obligation**.

For example, clause 37 of AS2124-1992 provides:

> ***37. DEFECTS LIABILITY***
> *…… As soon as possible after the Date of Practical Completion, the Contractor shall rectify any defects or omissions in the work under the Contract existing at Practical Completion.*
> *At any time prior to the 14th day after the expiration of the Defects Liability Period, the Superintendent may direct the Contractor to rectify any omission or defect in the work under the Contract existing at the Date of Practical Completion or which becomes apparent prior to the expiration of the Defects Liability Period. The direction shall identify the omission or defect and state a date by which the Contractor shall complete the work of rectification and may state a date by which the work of rectification shall commence. ……*
> *If the work of rectification is not commenced or completed by the stated dates, the Principal may have the work of rectification carried out at the Contractor's expense, but without prejudice to any other rights that the Principal may have against the Contractor with respect to such omission or defect and the cost of the work of rectification incurred by the Principal shall be a debt due from the Contractor.*

It is the privilege of the Contractor to be entitled to return to the site and rectify defects as they appear during the Defects Liability Period. The alternative would be for the Principal to have the defects rectified by others, at the Contractor's expense, and to deduct the costs of that rectification from the security money still being withheld by the Principal throughout the Defects Liability Period. It would be substantially cheaper, as a rule, for the Contractor to attend the site and rectify the Works himself.

In addition, it is also the obligation of the Contractor to return to the site within the period specified under the Contract (or where such a period is not specified, within a reasonable period) to rectify those defects. In this respect, the provisions constitute an obligation on the Contractor to attend and rectify.

Failure to Rectify/Rectification by Principal

In the same manner that the Contract usually provides that, where the Contractor fails to rectify defects, the Principal may take those works out of the hands of the Contractor and perform those Works at the Contractor's expense, similar provisions apply to a failure by the Contractor to rectify defects throughout the Defects Liability Period.

Where the Contractor fails to attend within a reasonable time throughout the Defects Liability Period and rectify such defects, the Principal becomes entitled to have those works rectified by others, and to deduct the cost of that rectification from the monies presently held by the Principal as security for that purpose.

For example, a possible format for a Clause 37 Notice:

> ***NOTICE PURSUANT TO AS2124-1992 CLAUSE 37***
>
> *PROJECT:*
> *CONTRACT NO :*
> *PRINCIPAL:*
> *CONTRACTOR:*
> *SUPERINTENDENT:*
>
> *DATE ISSUED:*
>
> *TO: The Contractor*
>
> *Pursuant to Clause 37 of the General Conditions of Contract, the Superintendent notifies the Contractor that the work contains omissions or defects ("the defective work") as follows:*

[[insert details]]

The Superintendent directs the Contractor to commence to rectify the defective work within [[]] days of the date of this notice, and to complete the work of rectification within [[ ]] days of the date of this notice.

The Superintendent directs that in respect of the work of rectification there shall be a separate Defects Liability Period of 12 calendar months which separate Defects Liability Period shall commence on the date the Contractor completes the work of rectification.

AND TAKE NOTICE THAT if the work of rectification is not commenced or completed by the stated dates, the Principal may have the work of rectification carried out at the Contractor's expense, but without prejudice to any other rights that the Principal may have against the Contractor with respect to such omission or defect and the cost of the work of rectification incurred by the Principal shall be a debt due from the Contractor.

……..
Superintendent

Liability for Defects after Defects Liability Period

The Contract will usually expressly provide that, upon the completion of the Defects Liability Period, and upon the issue of the Final Certificate, the Contractor shall make no further claim under the Contract against the Principal. The rationale for this limitation is that, by that time, the Contractor will have had time to sufficiently calculate any entitlement to which he claims to be entitled and to give notice of such a claim, and for the Superintendent to deal with all such claims under the Contract. In some cases, where the parties so negotiate, a similar exclusion on making claims may be imposed on the Principal. This, however, is rare and there is no logical reason why this should be so.

8. INSURANCE

8.1 CARE AND CONTROL OF THE WORKS

Care of the Works

The Contractor, from the date that it is given access to the site by the Principal until the date that it achieves practical completion and returns the site to the Principal, has the care and control of the site. The Contractor is required to protect the Works during this period, and, if necessary, reinstate the works, at the Contractor's expense, where they are damaged during this period, and, in addition, indemnify each other in respect of their obligations.

AS2124-1992 Clause 16 provides:

> ***16. CARE OF THE WORK AND REINSTATEMENT OF DAMAGE***
> ***16.1 Care of the Work Under the Contract***
> *From and including the earlier of the date of commencement of work under the Contract and the date on which the Contractor is given possession of the Site to 4 p.m. on the Date of Practical Completion of the Works, the Contractor shall be responsible for the care of the work under the Contract.*
> *Without limiting the generality of the Contractor's obligations, the Contractor shall be responsible for the care of unfixed items the value of which has been included in a payment certificate under Clause 42.1, things entrusted to the Contractor by the Principal for the purpose of carrying out the work under the Contract, things brought on the Site by subcontractors for that purpose, the Works, the Temporary Works and Constructional Plant, and the Contractor shall provide the storage and protection necessary to preserve these items and things, and the Works, the Temporary Works and Constructional Plant.*
> *After 4 p.m. on the Date of Practical Completion the Contractor shall remain responsible for the care of outstanding work and items to be removed from the Site by the Contractor and shall be liable for damage occasioned by the Contractor in the course of completing outstanding work or complying with obligations under Clauses 30.6, 31.1 and 38.*
>
> ***16.2 Reinstatement***
> *If loss or damage (except loss or damage which is a direct consequence, without fault or omission on the part of the Contractor, of an Excepted Risk defined in Clause 16.3) occurs to anything while the Contractor is responsible for its care, the Contractor shall at the Contractor's own cost promptly make good the loss or damage.*

AS4000-1997 Clause 14 provides:

> ***14.1 Care of WUC***
> *Except as provided in subclause 14.3, the* Contractor *shall be responsible for care of:*
> *a) the whole of* WUC *from and including the date of commencement of* WUC *to 4:00 pm on the* date of practical completion*, at which time responsibility for the care of* the Works *(except to the extent provided in paragraph (b)) shall pass to the* Principal*; and*
> *b) outstanding* work *and items to be removed from the* site *by the* Contractor *after 4:00 pm on the* date of practical completion *until completion of outstanding* work *or compliance with clauses 29, 30 and 35.*
> *Without limiting the generality of paragraph (a), the* Contractor *shall be responsible for the care of unfixed items accounted for in a* progress certificate *and the care and preservation of things entrusted to the* Contractor *by the* Principal *or brought onto the* site *by subcontractors for carrying out* WUC.
> ***14.2 Reinstatement***
> *If loss or damage, other than that caused by an* excepted risk*, occurs to* WUC *during the period of the* Contractor's *care, the* Contractor *shall, at its cost, rectify such loss or damage.*
> *In the event of loss or damage being caused by any of the* excepted risks *(whether or not in combination with other risks), the* Contractor *shall to the extent directed by the* Superintendent*, rectify the loss or damage and such rectification shall be a deemed* variation. *If loss or damage is caused by a combination of* excepted risks *and other*

risks, the Superintendent *in pricing the* variation *shall assess the proportional responsibility of the parties.*

Excepted risks

The obligation to care and be responsible for the works is usually qualified for certain (principal-related) "Excepted" risks.

AS2124-1992 Clause 16.2 provides:

> ***16.2 Excepted Risks***
> *The Excepted Risks are -*
> *(a) any negligent act or omission of the Principal, the Superintendent or the employees, consultants or agents of the Principal;*
> *(b) any risk specifically excepted in the Contract;*
> *(c) war, invasion, act of foreign enemies, hostilities, (whether war be declared or not), civil war, rebellion, revolution, insurrection or military or usurped power, martial law or confiscation by order of any Government or public authority;*
> *(d) ionising radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel not caused by the Contractor or the Contractor's employees or agents;*
> *(e) use or occupation by the Principal or the employees or agents of the Principal or other contractors to the Principal (not being employed by the Contractor) or a Nominated Subcontractor engaged by the Principal pursuant to a prior contract the benefit of which has been assigned to the Contractor pursuant to the Contract) of any part of the Works or the Temporary Works;*
> *(f) defects in the design of the work under the Contract other than a design provided by the Contractor.*

AS4000-1997 Clause 14.3 provides:

> ***14.3 Excepted risks***
> *The excepted risks causing loss or damage, for which the Principal is liable, are:*
> *a) any negligent act or omission of the Superintendent, the Principal or its consultants, agents, employees or other contractors (not being employed by the Contractor);*
> *b) any risk specifically excepted elsewhere in the Contract;*
> *c) war, invasion, acts of foreign enemies, hostilities (whether war be declared or not), civil war, rebellion, revolution, insurrection or military or usurped power, martial law or confiscation by order of any Government or public authority;*
> *d) ionising radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel not caused by the Contractor or its subcontractors or either's employees or agents;*
> *e) use or occupation of any part of WUC by the Principal or its consultants, agents or other contractors (not being employed by the Contractor); and*
> *f) defects in the design of WUC, other than design provided by the Contractor.*

Indemnity of the Principal/Indemnity of the Contractor

In addition, the Contract will usually provide that the Contractor and the Principal will indemnify each other in respect of certain risks.

AS2124-1992 Clause 17 provides:

17. DAMAGE TO PERSONS AND PROPERTY OTHER THAN THE WORKS

18.1 Indemnity by Contractor

The Contractor shall indemnify the Principal against -

(a) loss of or damage to property of the Principal, including existing property in or upon which the work under the Contract is being carried out; and

(b) claims by any person against the Principal in respect of personal injury or death or loss of or damage to any property,

arising out of or as a consequence of the carrying out by the Contractor of the work under the Contract, but the Contractor's liability to indemnify the Principal shall be reduced proportionally to the extent that the act or omission of the Principal or employees or agents of the Principal may have contributed to the loss, damage, death or injury.

Clause 18.1 shall not apply to -

(xviii) the extent that the liability of the Contractor is limited by another provision of the Contract;

(xix) exclude any other right of the Principal to be indemnified by the Contractor;

(xx) things for the care of which the Contractor is responsible under Clause 16.1;

(xxi) damage which is the unavoidable result of the construction of the Works in accordance with the Contract; and

(xxii) claims in respect of the right of the Principal to construct the work under the Contract on the Site.

18.2 Indemnity by the Principal

The Principal shall indemnify the Contractor in respect of damage referred to in Clause 18.1(iv) and claims referred to in Clause 18.1(v).

AS4000-1997 Clause 15 provides:

15.1 Indemnity by Contractor

Insofar as this subclause applies to property, it applies to property other than WUC. *The* Contractor *shall indemnify the* Principal *against:*

a) loss of or damage to the Principal's *property; and*

b) claims in respect of personal injury or death or loss of, or damage to, any other property,

arising out of or as a consequence of the carrying out of WUC*, but the indemnity shall be reduced proportionally to the extent that the act or omission of the* Superintendent*, the* Principal *or its consultants, agents or other contractors (not being employed by the* Contractor*) may have contributed to the injury, death, loss or damage.*

This subclause shall not apply to:

a) the extent that the Contractor's *liability is limited by another provision of the* Contract*;*

b) exclude any other right of the Principal *to be indemnified by the* Contractor*;*

c) things for the care of which the Contractor *is responsible under subclause 14.1;*

d) damage which is the unavoidable result of the construction of the Works *in accordance with the* Contract*; and*

e) claims in respect of the Principal's *right to have* WUC *carried out.*

15.2 Indemnity by Principal

The Principal *shall indemnify the* Contractor *in respect of damage referred to in paragraph (d) of subclause 15.1 and claims referred to in paragraph (e) of subclause 15.1.*

Contractually, therefore, the Principal need not insure the works during the period that the Contractor is responsible. That reinstatement obligation, however, in the absence of insurance, would rely upon the financial capacity of the Contractor to reinstate any damage. In fact, the Principal, as well as the Contractor, the subcontractors, the consultants, and all stakeholders in the project, will wish to be covered by insurance for the varying risk areas.

8.2 TYPES OF CONSTRUCTION INSURANCE

There are three major construction insurances on an engineering project:

Contractors All Risk

Contractors all risk insurance covers loss caused to the works which may occur between the commencement of the project and the handing over of the works by the Contractor to the Principal at practical completion. Such losses might include, for example:

- damage caused to part completed works by severe weather conditions
- damage caused by accidents on site

The insurance of such risks is usually required under the Contract to be effected by either the Principal or the Contractor.

The loss covered, on its face, is one which would normally be borne by the Contractor. The Contractor is given access (usually, for all practical purposes, exclusive access) of the site at the commencement of the works. From that moment the Contractor, under the Contract, has the "care and responsibility" for the Works. Accordingly, if, for example, part completed works are damaged by severe weather conditions, the Contractor would usually be required to restore the works to that condition without entitlement to payment from the Principal. This, however, would be a hollow remedy for the Principal if, for example, after such damage, the Contractor did not have sufficient funds to complete that reinstatement work.

For that reason, it is equally critical for the Principal and the Contractor that such potential losses be covered by the Contractors All Risk Insurance.

Public Liability/Third Party Liability

The Contract will usually also require the Principal or the Contractor to effect public liability/third party insurance. The losses which might usually be covered by such insurance include, for example, claims by persons who suffer injury or property loss because of defective equipment on the site or defective works.

The Contractor has the care and responsibility for the works. He also has the control of the Site. If, for example, a crane was to tip over while working on the site and fall across the fence onto parked cars in the adjacent street, those property owners might typically sue either the Contractor or the Principal or both. A more critical example might be personal injury claims from workers injured on the site, asserting that their injury was somehow caused by the Principal's failure (for example, to require better safety precautions, to ensure that the site does not collapse….).

The Contractor might be sued, in negligence, for his failure to properly secure the site, ensure that the equipment did not fall onto adjoining land...the Principal might be sued in negligence (in previous years this might have been generally referred to as "occupiers liability") on the basis that a danger associated with his occupation of the land has caused damage to people on adjoining land. Again, the Contractor will typically have given an indemnity to the Principal in respect of such losses caused by the negligence of the Contractor or those for whom the Contractor is responsible. For the same reasons as above, however, this may be a hollow remedy for the Principal if, in fact, the Contractor does not have sufficient funds to meet any such claims.

Further, some events will not be caused by the negligence of any person (for example, accidental damage). In those circumstances, it will be necessary for both the Principal and the Contractor to have such potential claims and/or losses covered by insurance.

Workers Compensation

The Contract will usually require that the Contractor effect all necessary and relevant workers compensation insurances.

In modern times, this provision has been a mere contractual obligation imposed on the Contractor to comply with the relevant workcare legislation. To the extent that any workman employed on the site is injured or becomes ill the workman would usually have his normal remedies under the workcare legislation against his employer.

Again, however, in the event that the Contractor fails to effect the relevant workcare insurances, there is a potential claim made by a workman employed on the site against the Principal in negligence (although, under the workcare legislation itself, it would be a failure by the Contractor to effect necessary insurances would not necessary dis-entitle such workman).

The Principal is usually satisfied, therefore, with merely imposing the obligation on the Contractor and, from time to time making cursory checks that this has, in fact, been complied with by the Contractor.

In addition to these three major insurances, from time to time the Contract may impose an obligation on either the Principal or the Contractor to effect other insurances including, possibly:

- motor vehicle insurance
- marine insurance (where goods are to be supplied from overseas)
- environmental insurance (although, in fact, the environmental insurance market in Australia is extremely limited)

8.3 INSURANCE - PRINCIPAL OR CONTRACTOR?

The Contract will usually provide **either** that the Principal is to effect the Contractors all risk and/or the public liability insurance, and the Contractor is to effect the workers compensation insurance **or** that the Contractor is to effect all of those insurances.

The Contract could provide, either, that the Contractor effect the insurances, and include the cost of the insurances in the Contract Sum, or alternatively, the Principal effect the insurances. Where the Contractor is to effect the insurances, it is necessary for the Contract to specify the types and extent of the insurances, the deductibles, and other details of the insurances to be effected and maintained by the Contractor, for the Contract Sum. Where the Principal is to effect the insurances, it will be necessary for the Contractor to carefully review the insurances, to see whether the Contractor should effect other additional insurances to cover the risks for which the Contractor is potentially liable under the Contract.

AS2124-1992 Clause 18 provides both alternatives:

> *18A*
> *Before the Contractor commences work, the Contractor shall take out an insurance policy covering all the things referred to in Clause 16.1 against loss or damage resulting from any cause whatsoever until the Contractor ceases to be responsible for their care.*
> *Without limiting the generality of the obligation to insure, the policy shall cover the Contractor's liabilities under Clause 16.2 and things in storage off Site and in transit to the Site.*
> *The insurance cover may exclude -*
> *(a) the cost of making good fair wear and tear or gradual deterioration but shall not exclude the loss or damage resulting therefrom;*
> *(b) the cost of making good faulty design, workmanship and materials but shall not exclude the loss or damage resulting therefrom;*
> *(c) consequential loss of any kind, but shall not exclude loss of or damage to the Works;*
> *(d) damages for delay in completing or for the failure to complete the Works;*
> *(e) loss or damage resulting from ionising radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel resulting from any cause;*
> *(f) loss or damage resulting from the Excepted Risks (b) and (c) in Clause 16.3.*
> *The insurance cover shall be for an amount not less than the sum of -*
> *(i) the Contract Sum;*
> *(ii) the amount stated in the Annexure to provide for costs of demolition and removal of debris;*
> *(iii) the amount stated in the Annexure to cover fees of consultants;*
> *(iv) the value stated in the Annexure of any materials or things to be supplied by the Principal for the purposes of the work under the Contract; and*
> *(v) the additional amount or percentage stated in the Annexure of the total of the items referred to in sub-paragraphs (i) to (iv) of this paragraph.*
> *The insurance policy shall be in the joint names of the Principal and the Contractor, and shall cover the Principal, the Contractor and all subcontractors employed from time to time in relation to the*

work under the Contract for their respective rights, interests and liabilities and, unless otherwise specified elsewhere in the Contract, shall be effected with an insurer and in terms both approved in writing by the Principal which approvals shall not be unreasonably withheld. The policy shall be maintained until the Contractor ceases to be responsible under Clause 16.1 for the care of anything.

18B
On or before the Date of Acceptance of Tender, the Principal shall effect a policy of insurance in relation to the work under the Contract in the terms of the policy or proposed policy included in the documents on which the Contractor tendered. The policy or proposed policy shall include the name of the insurer. The Principal shall maintain the policy while ever the Contractor has an interest therein and the Principal shall pay all premiums.

AS4000-1997 Clause provides:

Alternative 1: Contractor to insure
Before commencing WUC, the Contractor shall insure all the things referred to in subclause 14.1 against loss or damage resulting from any cause until the Contractor ceases to be responsible for their care.
Without limiting the generality of the obligation to insure, such insurance shall cover the Contractor's liability under subclause 14.2 and things in storage off site and in transit to the site but may exclude:
a) the cost of making good fair wear and tear or gradual deterioration, but shall not exclude the loss or damage resulting therefrom;
b) the cost of making good faulty design, workmanship and materials, but shall not exclude the loss or damage resulting therefrom;
c) consequential loss of any kind, but shall not exclude loss of or damage to the Works;
d) damages for delay in completing or for the failure to complete the Works;
e) loss or damage resulting from ionising radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel resulting from any cause;
f) loss or damage resulting from the excepted risks referred to in paragraphs (b) and (c) of subclause 14.3.
The insurance cover shall be for an amount not less than the aggregate of the:
a) contract sum;
b) provision in Item 20(b) to provide for costs of demolition and removal of debris;
c) provision in Item 20(c) for consultants' fees;
d) value in Item 20(d) of any materials or things to be supplied by the Principal for the purposes of WUC; and
e) additional amount or percentage in Item 20(e) of the total of the items referred to in sub-paragraphs (a) to (d) of this paragraph.
Insurance shall be in the joint names of the parties, shall cover the parties and all subcontractors whenever engaged in WUC for their respective rights, interests and liabilities and, except where the Contract otherwise provides, shall be with an insurer and in terms both approved in writing by the Principal (which approvals shall not be unreasonably withheld).
The insurance shall be maintained until the Contractor ceases to be responsible under subclause 14.1 for the care of anything.
Alternative 2: Principal to insure
Before the date of acceptance of tender, the Principal shall insure WUC in the terms of the policy included in the tender documents and nominating or stating the insurer. The Principal shall maintain such insurance while ever the Contractor has an interest in WUC.

Where the Principal is to effect those insurances, of course, one would expect lower tender prices (to reflect the cost of that insurance). Accordingly, therefore, it is a cost neutral issue to the Principal as to whether the Principal effects the insurance or the Contractor effects the insurance.

A modern trend has been for Principals to effect a project insurance on major projects. In that way, the Principal can have the benefit of potential cost economies for its insurance requirements on the projects, and the Principal can be comfortable that the insurances have, in fact, being effected.

The Contractor would usually, however, be required under the Contract to do all of the work of arranging the relevant insurances and providing evidence to the Principal that those insurances have been effected.

On first principles, one would expect the Contractor to effect the insurances. The Principal, typically, will be less - resourced than the Contractor, the Contractor will be aware of the dates proposed for the construction works, the nature of those works, details such as the number of men to be employed on site, the machinery involved, and the nature of the work, all of which will be relevant to one or other of the insurances to be effected.

Nevertheless, under the Contract, it is either the Principal or the Contractor who will usually be required to effect the above insurances.

Project Insurance

In the last 20 years or so, on major projects, the trend has been for the Principal to effect projects insurance to cover all of the various kinds of insurance over the entire project.

Such project insurances are usually placed with one insurer and include:

- Contractors All Risk
- Public Liability
- Workcare Compensation
- Motor Vehicle Insurance
- Any other insurances relevant to the particular project

The rationale for this has been economy of scale and the desire to ensure, for the Principal, that all relevant insurances have been effected and that no particular losses might fall between the gaps of the respective insurances.

Professional Indemnity Insurance?

A more complex issue relates to whether the Principal should require professional indemnity insurance to be effected by the Contractor and/or others. Historically, the Contractor did not carry professional indemnity insurance, the Contractor has been a construction Contractor rather than a professional adviser. In modern times, however, major construction contractors have tended to include, on their staff, a number of professional people, including engineers, architects, project managers and other such professionals. Further, such Contractors have tended to become involved in design and construct contracts whereas, in previous times, their role related to construction only.

In all of those circumstances, therefore, the service has been provided by major contractors have included in modern times from time to time, professional services. Accordingly, professional indemnity insurance has become a regular requirement of Principals of such Contractors on projects where professional services are being provided by the Contractor.

This is an expensive type of insurance. It is not an insurance which Principals will necessarily wish to pay for in the absence of a good reason to do so. On balance, however, wherever the Principal is relying on the professional expertise of the Contractor in addition to his contracting obligations, the Principal may choose to require (as it would do normally in respect of its own professional consultants) the Contractor to effect and provide evidence of professional indemnity insurance for the project.

From time to time, the Principal will, in effecting a project insurance, include professional indemnity insurance in respect of all of the professional consultants employed on the project.

Cross-Liability

The insurance policies will usually be required to include provisions that the insurer will waive its rights of subrogation against each of the respective insureds.

AS2124-1992 Clause 21.6 provides:

> *Any insurance required to be effected by the Contractor in joint names in accordance with the Contract shall include a cross-liability clause in which the insurer agrees to waive all rights of subrogation or action against any of the persons comprising the insured and for the purpose of which the insurer accepts the term "insured" as applying to each of the persons comprising the insured as if a separate policy of insurance had been issued to each of them (subject always to the overall sum insured not being increased thereby).*

AS4000-1997 Clause 19.6 provides:

> *Any insurance required to be effected in joint names in accordance with the* Contract *shall include a cross liability clause in which the insurer agrees to waive all rights of subrogation or action against any of the persons constituting the insured and for the purpose of which the insurer accepts the term 'insured' as applying to each of the persons constituting the insured as if a separate policy of insurance had been issued to each of them (subject always to the overall sum insured not being increased thereby).*

Liability of Sub-contractors

In *Erect Safe Scaffolding (Australia) Pty Ltd v Sutton* [2008] NSWCA 114, the New South Wales Court of Appeal restricted the operation of indemnity and insurance clauses that were included in the sub-contract for the benefit of the head contractor. The court held that the indemnity did not cover the head contractor for its own negligence, even where the danger or hazard was created by the sub-contractor. The court also found that the obligation to obtain insurance was limited to obtaining cover for the indemnity.

9. SECURITY

9.1 CASH RETENTION/BANK GUARANTEE

Provision of Security

The Contract will usually provide that the Contractor will be required to provide security for the performance of its obligations under the Contract.

AS2124-1992 Clauses 5.1-5.2 provide:

> ***5.1 Purpose***
> *Security, retention moneys and performance undertakings are for the purpose of ensuring the due and proper performance of the Contract.*
>
> ***5.2 Provision of Security***
> *If it is provided in the Annexure that a party shall provide security then the party shall provide security in the amount stated in the Annexure and in accordance with this Clause.*

AS4000-1997 Clauses 5.1-5.2 provide:

> ***5.1 Provision***
> *Security shall be provided in accordance with Item 13 or 14. All delivered security, other than cash or retention moneys, shall be transferred in escrow.*
>
> ***5.2 Recourse***
> *Security shall be subject to recourse by a party who remains unpaid after the time for payment where at least 5 days have elapsed since that party notified the other party of intention to have recourse.*

That security, historically, was provided by cash retention. The Principal would deduct an amount (usually of the order of 5% of the value of the works completed) from each progressive progress claim from the commencement of the works up until practical completion. At practical completion, usually, part of that cash retention would be returned to the Contractor if it was not required for any reason under the Contract). Typically, the Principal would retain, say, 2.5% of the total Contract sum throughout the Defects Liability Period.

In the last 25 years or so, the provision of bank guarantee security has tended to be preferred by contractors in lieu of cash retention. The attraction of providing a bank guarantee, for the contractor, is that (providing the contractor has sufficient credit at its bank) the cost of the bank guarantee to the Contractor (typically of the order of 2% per annum of the sum involved) is negligible (and can be added to the tender price) compared to having cash flow.

The amount provided by way of bank guarantee will usually mirror the amount which would otherwise have been provided by way of cash retention. For example, typically, on smaller projects, the Contractor provides one bank guarantee for amount equal to 2.5% of the contract sum at commencement of the works, a second bank guarantee for 2.5% of the contract sum half way through the completion of the works, the first bank guarantee is returned at practical completion, and the second bank guarantee is returned at the end of the Defects Liability Period.

The critical issue in relation to the form of a bank guarantee is that the bank guarantee (so far as the Principal is concerned) be as good as cash.

Security by Principal?

The convention has always been to require the Contractor to provide security to the Principal.

In fact, the Principal always has the advantage of the Contractor having completed part of the works prior to becoming entitled to receive payment for that work. (For example, where the Contract commences at the start of month one, submits its progress claim at the end of that month one, receives that progress payment towards the end of month two, then, at all times, the Contractor has completed at least 1-2 months of work for which he has not yet been paid.)

From time to time, however, the Principal has been requested to give security to the Contractor. This is not usual. (In fact, the annexure to AS2124 includes a place for the parties to indicate whether the Principal is to provide security or not.) Where the Principal is to provide security, again, that security will usually be provided by way of bank guarantee.

One could envisage circumstances in which the Principal might provide security where, for example:
1. the company with which the Contractor was contracting was **not** the registered proprietor of the land, and
2. the Principal was a company with minimal assets.

Alternatively, there may be some issue about the financial security of the Principal. Alternatively, the Principal might be a foreign corporation and there may be concerns as to the ability of the Contractor to obtain payment were enforcement proceedings ultimately became necessary.

In practice, however, the Principal rarely provides security to the Contractor.

Protection for Principal

The Principal has substantial security under the Contract to protect it from any failure to complete the works by the Contractor.

That security consists of any or all of the following:
- the value of the works completed by the Contractor, for which the Contractor has not yet been paid (this will, typically, at any time, be of the order of 1-2 months of works completed by the Contractor);
- the value of any cash retention or bank guarantee provided by way of security by the Contractor to the Principal.

Accordingly, at any time, if the Contractor fails to complete the works, the Principal will have a substantial amount of money with which to step into the shoes of the Contractor and complete the works.

Such circumstances might arise when, for example:
- the Contractor goes into liquidation during the progress of the works;
- the Contractor, because of a contractual dispute with the Principal, terminates the Contractor and leaves the site;
- the Contractor, for reasons of the Principal, is terminated by the Principal.

In each of these circumstances, irrespective of the Contractor's right to sue for damages if it has a claim against the Principal, the Principal will in fact typically be holding sufficient funds to re-start the work with another Contractor and complete the works at the Contractors expense.

9.2 SECURITY TO REMEDY DEFAULT/DEFECTIVE WORK

The Principal, at any time, is holding substantial security to enforce compliance with the Contract/ the rectification of defective work.

There are a number of potential circumstances when the Principal may seek to have recourse to the securities.

For example, under AS2124-1992 :
- protection of people or the works (clause 15)
- effecting insurance policies not properly effected (clause 21.3)
- rectifying defective work prior to practical completion (clause 30.3)
- rectifying defective work during the Defects Liability Period (clause 37)
- performing cleaning up not properly performed (clause 38)
- performing urgent protection work not properly performed (clause 39)
- where a party fails to pay monies due (clause 42.11)
- paying unpaid subcontractors (clause 43)
- recovering any shortfall where the works are taken out of the contractor's hands (clause 44.6)

Where the Contractor performs defective work, and fails upon the Principals or the Superintendents instruction to rectify that defective work, at some point the Principal will become entitled to step into the shoes of the Contractor,

rectify that defective work at the Contractor's expense, and deduct the cost of that rectification from monies otherwise due to the Contractor.

Accordingly, where defective works is not remedied by the Contractor, the Principal will usually deduct the cost of that rectification from the next progress payment or, failing that, from subsequent progress payments and any cash retention or bank guarantee security as presently held by the Principal.

9.3 CONVERSION OF BANK GUARANTEES

Ability to Convert to Cash: Form of Guarantee

The rationale for providing security to the Principal is to put the Principal in the position where, irrespective of any contractual entitlement, it can complete the works if necessary, or rectify defective works if necessary, using funds provided by the Contractor.

The modern use of bank guarantees as an alternative to cash retention should have simply substituted a form of security which was equivalent to cash for that cash retention. For various reasons, however, the form of bank guarantee has tended to include, on occasion, certain restrictions on the Principal's ability to present that bank guarantee and convert it to cash.

For example, typical conditions might include:

- notification of the Contractor with sufficient time, if necessary, for the Contractor to be able to commence Court proceedings to restrain the presentation of the guarantee;
- the need to obtain a judgment from a Court or an Arbitrator entitling the Principal to convert the bank guarantee to cash.

These conditions will, potentially, have the effect of removing the efficacy on the bank guarantee altogether.

The form of the bank guarantee will, therefore, be a commercial issue. The restrictions on presenting the bank guarantee will not diminish the security value of the bank guarantee, but may make presentation more inconvenient.

A draft form of unconditional undertaking is provided in AS2124-1992. Annexure Part provides:

> ***APPROVED FORM OF UNCONDITIONAL UNDERTAKING***
>
> *(Clause 5.3)*
>
> *At the request of ..... ("the Contractor") and in consideration of ..... ("the Principal") accepting this undertaking in respect of the contract for ..... ("the Financial Institution") unconditionally undertakes to pay on demand any sum or sums which may from time to time be demanded by the Principal to a maximum aggregate sum of*
> *$.....*
> *The undertaking is to continue until notification has been received from the Principal that the sum is no longer required by the Principal or until this undertaking is returned to the Financial Institution or until payment to the Principal by the Financial Institution of the whole of the sum or such part as the Principal may require.*
> *Should the Financial Institution be notified in writing, purporting to be signed by ..... for and on behalf of the Principal that the Principal desires payment to be made of the whole or any part or parts of the sum, it is unconditionally agreed that the Financial Institution will make the payment or payments to the Principal forthwith without reference to the Contractor and notwithstanding any notice given by the Contractor not to pay same.*

Provided always that the Financial Institution may at any time without being required so to do pay to the Principal the sum of $..... less any amount or amounts it may previously have paid under this undertaking or such lesser sum as may be required and specified by the Principal and thereupon the liability of the Financial Institution hereunder shall immediately cease.

DATED:

The obligation to give notice of intention to present a bank guarantee could, conceivably, be seen as preventing a mad scramble to the Courts by a Contractor where it simply guessed that the bank guarantee was to be presented. Accordingly, one could possibly justify the inclusion of a condition requiring formal notice to be given a certain number of days prior to presentation of a bank guarantee. Even that, however, will seemingly introduce the additional legal hurdle of, in appropriate circumstances, having to defend a Supreme Court injunction application prior to the Principal's ability to complete the project using the Contractors security monies.

The second condition, however completely removes the advantage of the security. The obligation to obtain a judgment from a Court or an Arbitrator will, typically, involve the Principal in many months of protracted and expensive litigation as a pre-condition to being able to complete the works using the Contractor's money. This seems an unnecessarily expensive condition to impose on the security to be provided by the Contractor to the Principal.

In fact, the more common convention is that where cash retention is not to be provided by the Contractor, the form of bank guarantee is to be a condition-free irrevocable direction to the bank requiring the bank to pay the funds to the Principal **without** reference to the Contractor.

Right to Convert to Cash

The Principal will, under the Contract, become entitle to take the cash retention monies and/or convert a bank guarantee to cash and use those funds in limited circumstances only.

Such circumstances might include:
1. the Contractor failing to comply with a notice to rectify defective work and the Principal taking those defective works out of the hands of the Contractor;
2. the Contractor having the whole of the works remaining to be performed under the Contract taking out of its hands, and the Principal completing those works;
3. the Principal becoming entitled to claim, as a debt due, from the Contractor, sums of money relating to the Contractors failure to complete the works by the Date for Practical Completion (including, where provided, the deduction of liquidated damages).

There have been a series of court decisions in modern times as to the right of the Principal to convert securities. The substantive view of the Courts has been that securities are to be the equivalent of cash, and available to the Principal for use on the project, the Contractor having the ability to seek recovery where necessary from the courts or arbitration.

Injunction to Restrain Presentation of Bank Guarantee

The presentation of a bank guarantee at a Contractors bank is a serious financial step for the Contractor.

Accordingly, where the Contractor becomes concerned that the Principal is about to present such a bank guarantee at the Contractor's bank, the Contractor will consider whether it would be in his interest to attempt to have the Courts restrain the Principal from presenting the bank guarantee, by way of injunction.

The Principal, in theory, in holding the bank guarantee, is in the same position as if it were holding cash. In theory, the Principal merely needed to present the bank guarantee at the bank named on the guarantee and the bank, without contacting the Contractor, will simply exchange the bank guarantee for the relevant amount of cash.

In practice, however, the Contractor has, from time to time disputed the right of the Principal to convert the bank guarantee to cash under the Contract (for example, the Contractor and the Principal may be in dispute as to whether the Principal has wrongfully terminated the Contract).

On one view, the Contractor should usually be successful in an injunction application where it can establish a prima face case to be argued in the Courts and a lack of commercial inconvenience being caused to the Principal if the injunction is granted (typically, the Contractor will be required to give an undertaking as to damages should the Contractor ultimately fail in any proceedings against the Principal and the Principal suffer loss as a result of being restrained from presenting the bank guarantee).

On balance, however, the Principal will usually be inconvenienced by being unable to have recourse to the cash (for example, it will need to arrange alternative funds).

The Courts have tended to decide such applications on the balance of convenience. Contract disputes can be complex and the rights of the parties are not always clear at first (they will be necessarily subjected to substantial pre-trial preparation on the documents, and the facts relied upon by the parties will often vary). In those circumstances, where the Contractor is prepared to provide an undertaking as to damages, and where the Principal will not in fact be substantially inconvenienced by the inability to have recourse to the security (for the present), the Contractor will typically obtain an injunction, at least for a short period, restraining the Principal from presenting the bank guarantee while the issues are sorted out in the proceedings.

For this reason, where the Contractor becomes concerned that the Principal is about to present the bank guarantee, there is often a mad scramble to the Courts to obtain that injunction **before** the Principal in fact presents the bank guarantee at the Contractor's bank.

The Federal Court has recently reviewed the circumstances in which a court will prevent a party from calling on a performance guarantee. The case reinforces the general principle that courts are reluctant to interfere except in limited circumstances, such as fraud: *Clough Engineering Limited v Oil & Natural Gas Corporation Limited* [2008] FCAFC 136.

Security Provision Void as against "Public Policy"

In *Materials Fabrication Pty Ltd v Baulderstone Pty Ltd* [2009] VSC 405 (8 September 2009), Mr Justice Vickery (the Judge in charge of the Supreme Court of Victoria Technology, Engineering and Construction (TEC) List) recently considered whether a dispute resolution clause, which required a subcontractor to provide security to the head contractor (to the value of 10% of its claim) before commencing litigation. His Honour noted that the common law enshrines a right to commence legal proceedings and that this right is reinforced by s 24(1) of the Victorian *Charter.* His Honour said that the particular clause in the subcontract may:

> *"severely inhibit, if not preclude, the exercise of a legitimate right for a party to a dispute to conduct a trial of its cause before a court".*

His Honour noted that a prospective litigant would most likely have already expended legal fees on commencing its action, thus the contractual requirement to pay 10% of its claim prior to commencing litigation may act as a deterrent or a disincentive to pursuing the full quantum to which the party may be entitled. His Honour held the clause to be void, on the grounds that it offended public policy.

10. DEFAULT/TERMINATION

10.1 DEFAULT BY THE CONTRACTOR

The nature of default under a construction contract is complex. Those "defaults" comprise failures by the Contractor to perform the works in accordance with the Contractor's obligations under the Contract. It is often a difficult matter to identify when a Contractor is in default. The grounds of default which might, if not rectified, lead to termination of the Contract are, usually, expressly specified.

Default notice/Show cause notice

AS2124-1992 Clause 44.2 provides:

> ***44.2 Default by the Contractor***
> *If the Contractor commits a substantial breach of contract and the Principal considers that damages may not be an adequate remedy, the Principal may give the Contractor a written notice to show cause. Substantial breaches include but are not limited to -*
> *(a) suspension of work, in breach of Clause 33.1;*
> *(b) failing to proceed with due expedition and without delay, in breach of Clause 33.1;*
> *(c) failing to lodge security in breach of Clause 5;*
> *(d) failing to use the materials or standards of workmanship required by the Contract, in breach of Clause 30.1;*
> *(e) failing to comply with a direction of the Superintendent under Clause 30.3, in breach of Clause 23;*
> *(f) failing to provide evidence of insurance, in breach of Clause 21.1; and/or*
> *(g) in respect of Clause 43, knowingly providing a statutory declaration or documentary evidence which contains a statement that is untrue.*

AS4000-1997 Clause 310.2 provides:

> ***310.2 Contractor's default***
> *If the* Contractor *commits a substantial breach of the* Contract*, the* Principal *may, by hand or by certified post, give the* Contractor *a written notice to show cause.*
> *Substantial breaches include, but are not limited to:*
> *a) failing to:*
> *i) provide* security*;*
> *ii) provide evidence of insurance;*
> *iii) comply with a* direction *of the* Superintendent *pursuant to subclause 210.3; or*
> *iv) use the materials or standards of* work *required by the* Contract*;*
> *b) wrongful suspension of* work*;*
> *c) substantial departure from a* construction program *without reasonable cause or the* Superintendent's *approval;*
> *d) where there is no* construction program*, failing to proceed with due expedition and without delay; and*
> *e) in respect of clause 38, knowingly providing documentary evidence containing an untrue statement.*

In addition to the express termination rights provided under the Contract, any party to a contract will also have common law rights of termination.

Delayed Progress

The Contractor's primary obligation, in relation to time, is to bring the works to practical completion by the Date for Practical Completion. In theory, if he so desired, the Contractor could leave the works until near the end of the Contract and then bring extra resources onto the works so as to complete by the Date for Practical Completion. In practice, however, the Contract will usually provide that **after** the execution of the Contract, the Contractor is to provide, to the superintendent, a programme for the performance of the works, and then to comply with that programme. The significance of providing the programme **after** execution of the Contract, is that the programme itself is **not** a Contract document. A minor failure to comply with the programme will not usually, in itself, either put the Contractor in default, or entitle the Principal to sue for damages and/or terminate the Contract.

The provisions of the Contract, however, usually provide that the works are to be performed generally in accordance with the programme prepared by the Contractor.

The primary purpose of the programme is to provide a benchmark to measure the progress of the Contractor during the Contract but prior to the Date for Practical Completion.

The failure of the Contractor to bring the works to practical completion by the Date for Practical Completion is easy to establish. Such a failure (to bring the works to practical completion by the Date for Practical Completion) will usually entitle the Principal to take steps towards termination of the Contract, and will certainly entitle the Principal to sue for damages, (usually pre-agreed damages, referred to as "liquidated damages").

It is substantially more complex to establish that the Contractor is late in the progress of the works, **prior to** the Date for Practical Completion. The consequence of such a lack of progress, or "delayed progress", where it occurs, is, again, complex. If a Contractor has provided a programme, and is failing to perform the works in accordance with that programme, he will usually be instructed by the principal/superintendent to bring the works back into compliance with that programme. If he fails to do so, he would usually be directed to provide a new programme showing how the works will, ultimately, be brought to practical completion by the Date for Practical Completion. If the Contractor is substantially behind the programme, then, in theory, it will be in default under the Contract, which could lead to the Principal becoming entitled to exercise the remedies of taking part of or all of the works out of his hands, or terminating the Contract.

The consequences of a wrongful termination, (where termination is not in accordance with the Contract), are extremely serious. Further, there is usually substantial difficulty in identifying whether the Contractor is in fact, so behind in his performance of the works as to put in doubt his ability to bring the works to practical completion by the Date for Practical Completion. In combination, these factors tend to discourage the Principal from exercising contractual remedies based on delayed progress.

Delayed progress alone, therefore, though potentially a serious default, is rarely the basis for termination unless the delayed progress is so substantial as to make it obvious that the Contractor will be unable to complete the works by the Date for Practical Completion.

Defective Work/Failure to Rectify

Where the Principal/Superintendent conclude that the works, as completed are defective, they will usually direct the Contractor to repair, remove, and rectify those defective works. Where the Contractor fails to rectify those works, in accordance with that direction, he will be in default, and serious consequences may follow.

Defective work might include any or all the following:

- in providing works to a lesser quality than that specified in the Contract documents;
- completing works in accordance with the specification, but which have defects for example, cracks or corrosion in components);
- completing works intended to have a particular function, but which do not ultimately perform that function (for example, supplying equipment/machinery which does not operate, or does not operate in accordance with the required performance specifications).

The Contractor will usually, where work is obviously defective, prefer to remedy that work, rather than face the potential consequences of such defective work. In fact, the Contractor has the **right**, as well as the **obligation**, to rectify defective work, rather than have the Principal simply rectify the defective work and deduct the cost of that rectification.

The usual regime available to the Principal/Superintendent under the Contract, where work is defective, is as follows:

1. direct the Contractor, in writing, to rectify the defective work within a specified period;
2. where the Contractor fails to rectify that work, direct the Contractor to rectify the work within a specified period, failing which the Principal will take all or part of that defective work out of the hands of the Contractor, rectify that work himself, and deduct the cost of that rectification from the Contractor's entitlements under the Contract;
3. remove all or part of the defective work from the Contractor's hands, have it rectified himself, and deduct the cost of that rectification from the monies owing to the Contractor under the Contract.

Where the defective work is serious enough, and where the Principal has been through the regime set out above but this is still not adequate, such a default would be sufficient potentially for the Principal to terminate the Contract (subject to the Principal acting strictly in accordance with the termination provisions of the Contract).

10.2 DEFAULT BY THE PRINCIPAL

The Principal is usually only in default where he fails to make a payment due under the Contract by the due date.

AS2124-1992 Clause 44.7 provides:

> ***44.7 Default of the Principal***
> *If the Principal commits a substantial breach of contract and the Contractor considers that damages may not be an adequate remedy, the Contractor may give the Principal a written notice to show cause. Substantial breaches include but are not limited to -*
> *(a) failing to make a payment, in breach of Clause 42.1;*
> *(b) failure by the Superintendent to either issue a Certificate of Practical Completion or give the Contractor, in writing, the reasons for not issuing the Certificate within 14 days of receipt of a request by the Contractor to issue the Certificate, in breach of Clause 42.5;*
> *(c) failing to produce evidence of insurance, in breach of Clause 21.1;*
> *(d) failing to give the Contractor possession of sufficient of the Site, in breach of Clause 27.1, but only if the failure continues for longer than the period stated in the Annexure; and/or*
> *(e) failing to lodge security in breach of Clause 5.*

AS4000-1997 Clause provides:

> ***310.7 Principal's default***
> *If the* Principal *commits a substantial breach of the* Contract*, the* Contractor *may, by hand or by certified post, give the* Principal *a written notice to show cause.*
> *Substantial breaches include, but are not limited to:*
> *a) failing to:*
> *i) provide* security*;*
> *ii) produce evidence of insurance;*
> *iii) rectify inadequate* Contractor's *possession of the* site *if that failure continues for longer than the time stated in* Item *31; or*
> *iv) make a payment due and payable pursuant to the* Contract*; and*
> *b) the* Superintendent *not giving a* certificate of practical completion *or reasons as referred to in subclause 34.6.*

In theory, the Principal can be in default in a number of other ways, for example:

- failing to provide the access to the site on the specified date;
- failing to provide the necessary Contract drawings/specifications by the date required under the Contract;
- failing to provide some matter (for example, water/electricity) as required under the Contract;
- failure to make a payment by the due date.

In practice, wherever there is any failure by the Principal, the Contractor will simply make a claim for additional payment/time and be satisfied with that claim.

The most critical default, therefore, which a Principal can make is a failure to make a payment by the date due under the Contract.

Where the Principal fails to make such a payment by the date due under the Contract, the Contractor will usually have serious remedies available to him, in order:

1. the right to suspend the works, with all necessary adjustments on time and cost which flow from that suspension, until the payment is made;
2. the right to terminate the Contract.

10.3 REMEDIES

10.3.1 Notice to Comply/Default Notice/Show Cause Notice

Where the Contractor is in default, the Contract will usually provide that the Principal may give a notice to the Contractor setting out the default and requiring the Contractor to comply. For example, in AS2124-1992, the Superintendent may give a direction to the Contractor pursuant to Clause 30.1 to repair defective work. That Contract provides that where such a notice is given, the Contractor is to comply with that notice, failing which he will be in "substantial default" for the purpose of the provisions of Clause 44. The procedure, therefore, for the principal/superintendent where the Contractors in default is to give the Contractor a Notice to Comply. The failure to comply with such a notice is, itself, a default under the Contract.

10.3.2 Take Works Out of the Contractor's Hands

The failure of the Contractor to comply with a notice to comply will usually entitle the Principal, under the Contract, to remove that part of the works which are the subject of the notice from the Contractor's hands, to have those works performed by others at the Contractor's expense, and to deduct that cost from monies otherwise due to the Contractor under the Contract. Further, if necessary, the Contract will usually provide that the Principal may deduct such costs from the securities held under the Contract (if the monies owing to the Contractor under the Contract are not sufficient).

This is an extremely serious remedy for the Contractor.

It is a pre-cursor to termination of the Contract. Further, it will usually be substantially more expensive for the Contractor to have such works rectified by others at his expense, then it would have been had the Contractor himself been able to go back and re-perform that defective work.

10.3.3 Termination

Where the Contractor is in default, in a manner expressly set out in the Contract, the Principal may obtain the right to terminate the Contract altogether. (In addition to the express rights of termination provided in the Contract, the parties both have their common law rights of termination.) For example, in Clause 44 of AS2124-1992, the Contract expressly defines "substantial default", sets out the express notice provisions which must be given to the Contractor, and brings up a show cause notice procedure which must be followed, prior to the Principal obtaining the right of termination.

The **consequences** of termination are extremely severe.

For example, again in AS2124-1992, those consequences include:
1. removing the Contractor from the site;
2. making no further payment to the Contractor (until the notice as to the final cost of the works referred to below);
3. retaining any constructional plant which may be on the site which may be necessary for the principal to complete the works;
4. having the works completed by others;
5. upon the superintendent, the works having been completed, providing a notice as to the final cost of the works, setting out any surplus or shortfall owing to the Contractor, the Contractor then may or may not become entitle to payment of any surplus, or (more usually) the principal becomes entitled to claim as a debt due the amount of any shortfall from the Contractor.

Accordingly, once the Contract has been terminated, the Contractor will receive no further money and, in fact, usually, becomes liable at the end of the job for a shortfall. In practice, therefore, termination is usually hotly contested.

For example, a possible form of a Clause 44.2 Notice might be:

NOTICE PURSUANT TO AS2124-1992 CLAUSE 44.2
PROJECT: *CONTRACT NO:*

PRINCIPAL:
CONTRACTOR:

DATE ISSUED:

TO: The Contractor

Pursuant to Clause 44.2 of the General Conditions of Contract, the Principal notifies the Contractor as follows :

This notice is a notice under Clause 44 of the General Conditions of Contract.

The Contractor has committed the following substantial breach of contract:

1. *failing to proceed with the works with due expedition and without delay, in breach of Clause 33.1;*
   PARTICULARS

2. *failing to use the materials or standards of workmanship required by the Contract, in breach of Clause 30.1;*
   PARTICULARS

3. *failing to comply with a direction of the Superintendent under Clause 30.3 in breach of Clause 23;*
   PARTICULARS

TAKE NOTICE THAT the Contractor is required to show cause in writing why the Principal should not exercise a right referred to in Clause 44.4. The time and date by which the Contractor is to show cause is 5pm on the date which is 14 days from the date on which the Contractor receives this notice. The place at which the Contractor is to show cause is at the office of the Principal, [ ]

Dated:

……..
Principal

In *Diploma Construction Pty Ltd v Marula Pty Ltd* [2009] WASCA 229 (18 December 2009), the Western Australian Court of Appeal reviewed the requirements for repudiation arising from a subcontract for plastering work that had been terminated by the Appellant before the plastering work had been completed by the Respondent. The Court of Appeal held (dismissing the appeal):

1. A notice of default must bring sufficiently to the attention of the recipient what the default is alleged to be. The notice must "*direct the contractor's mind to what is said to be amiss*".
2. In order to be a valid notice under the present contract, all that was required was for the Appellant to inform the respondent subcontractor "*of the details of the default*" alleged. The appellant had to clearly direct the Respondent's attention to the alleged default with sufficient specificity that the default was capable of being readily identified by the Respondent.

Where the Principal terminates the Contract, on the basis of the default of the Contractor, the Contractor will usually dispute that it is in default and/or will dispute that the Principal has correctly followed the procedure set out in the termination provisions. Should the Contractor be correct in such an assertion, namely that he has been

wrongly terminated under the Contract, the potential damages which the Contractor might obtain against the Principal in a court action are substantial.

For this reason, the consequences of wrongful termination being so severe for the Principal, such a remedy is usually taken only as a last resort and must be taken strictly in accordance with the express termination provisions of the Contract.

10.3.4. Conversion of Security to Cash

The Contractor would usually provide security to the Principal under the Contract. In modern times, the usual form of security provided is by way of bank guarantee security. Where the Principal terminates the Contract, the Contract would usually expressly provide that, so far as is necessary to give effect to the termination provisions, the Principal may convert the security to cash and use those funds to perform the works. This is a key right of the Principal and, again, will usually result in the Contractor disputing, in Court if necessary, the right of the principal to convert the security to cash.

Wrongful Termination

For the reasons set out above, the Contractor will usually dispute the termination of the Contract by the Principal on the grounds that the Contractor is in default. Where the Principal terminates the Contract, the Contractor if he wishes to contest this will usually say that the Principal has unlawfully terminated the Contract and, by the Principal's conduct, has evidenced an intention to repudiate the Contract and to no longer be bound by it. The effect of this is that the Contractor will not attempt to stay on the site but will leave the site and sue for damages.

11. CLAIMS

11.1 TYPES OF CLAIMS

Claims occur on every project. Possible claims might include any or all of the following:[13]

- Lack of possession
- Lack of information
- Errors on drawings
- Frequent amendment of drawings
- "Design as you go"
- Inconsistencies in documents
- Errors in survey information
- Changes in statutory requirements
- Late approvals by outside bodies
- Injunction proceedings
- Latent conditions on site
- Problems with designated materials
- Suspension of works
- Programme changes
- Unreasonable administration
- Late or inconsistent decisions
- Measurement of quantities
- Large quantity changes
- Variations, extra works
- "Fiddling" with quantities
- Principal's failure to make tests
- Opening up and testing work
- "Excepted risks"
- Late payments
- Bankruptcy of NSC
- Inclement weather
- Strikes
- Delay in contractor supplied materials
- Interface or interference problems – other contractors
- Acceleration

This list suggests the many events which occur during a construction project which potentially result in a claim for additional payment, extension of time and/or delay cost.

Types of claims might include any or all of the following:

Administrative Based

1. Errors in interpretation of the contract language.
2. Changes to previously unspecified administrative requirements.
3. Government interference and revised statutory requirements.
4. Changed industrial guidelines and limitations including hours of work.
5. Suspension of work.
6. Unreasonable and inflexible contract administration, considering normal engineering/architectural practice and criteria on which the construction would have been based.
7. Inconsistent decisions by the Principal or Superintendent.
8. Interpretation and implementation of rise and fall provisions.
9. Quantum deficiencies in owner supplied material and its effect.
10. Late progress payments.
11. Effects of bankruptcy of a nominated sub-contractor.
12. Non provisions of facilities in a timely fashion.
13. Unilateral site agreement negotiations and amendments.

[13] This list of claims is set out in a thorough article by Mr Max McDougall.

Technical Based

1. Defective plans and specifications i.e. Engineers/Architects should show due care and accuracy.
2. Drawing discrepancies and errors.
3. Revisions to Specifications.
4. Non disclosure of technical information.
5. Higher standards of performance.
6. Prototype “design as you go approach”.
7. Design versus faulty workmanship.

Performance Based

1. Late access to site or inadequate possession.
2. Late order to proceed.
3. Late issue of initial “For Construction” drawings.
4. Late inspections.
5. Late material and equipment supplies subject to defined responsibility.
6. Unreasonably delayed instructions, replies and information.
7. Late or frequent revisions to drawings.
8. Delays and interference by the Sub-contractors.
9. Delayed set out in survey.
10. Delays due to strikes – an area of responsibility often hotly disputed due to interplay with, and interference of, the Superintendent.
11. Delays outside the Contractor’s control but within his responsibility.
12. Late approval of submitted drawings.
13. Delays due to the weather.

Site Based

1. Relocation of existing work.
2. Working out of sequence.
3. Limitations on methods to be used and changes in methods.
4. Over inspection whereby unreasonable interference is experienced.
5. Improper inspection and changes to inspection methods.
6. Unreasonable punchlists on Contract completion.
7. Increased safety requirements.
8. Improper rejections.
9. Improper testing methods.
10. Frustrated performance due to changed circumstances.
11. Impracticability or impossibility of performance at a reasonable cost due to changed circumstances.
12. Latent conditions of site differing from what was expected.
13. Programme changes including differing priorities required by the Principal or Superintendent.
14. Failure of the Facilities Officer to carry out tests specified as his responsibility in the Contract.
15. Instructions to accelerate the works by the setting of dates inside those reasonably expected, taking into account circumstances and extensions of time.

11.2. QUANTIFICATION OF CLAIMS

The key heads of claim are set out below. The heads of claim in paragraphs 1 and 2, unlike paragraphs 3 and 4, are able to be calculated precisely. The heads of claim in paragraphs 3 and 4, in contrast, are hypothetical, they must only be based on assumptions which may or may not be valid.

The heads of claim are as follows:

1 Direct Costs

This is the total of the additional materials and labour attributable to the claim. This is calculated by collating each item of material and labour which can be allocated, in whole or in part, to the claim. It will include, for example:

- sub-contractors
- suppliers
- equipment
- labour

This head of claim requires no more than detailed record collection and collation of each item.

2 Job-Related Overheads

This head of claim relates to overheads specifically related to this project. It excludes items in paragraph 1 above. It requires the pro-rata allocation, in whole or in part (usually in part), of overhead items relating to this particular claim. It will include, for example, the fair share of the following items, able to be allocated to this particular claim:

- site shed hire
- supervisor salaries
- site security
- electricity, and other services
- crane usage (unlike the item in paragraph 1 above, this would apply where there is no particular allocation of a crane to this particular item, but rather the shared use of a crane across many jobs on the site, without particular allocation to this claim)

This head of claim, like paragraph 1, should require no more than detailed record collection and collation of each item.

3 Non-Job Related Overheads

This head of claim relates to the fair share of organisation-wide overheads which should be allocated to each claim on a particular project. Items under this head would include the fair share of the following (attributable to this claim):

- contribution to organisation head office costs
- profit (return to shareholders)

This head of claim requires a series of hypothetical assumptions in its calculation. In theory, the best way to calculate such items is to apply, pro-rata, the organisation-wide turnover against overhead costs and profit over the past few years (say, 3-5 years), to the period of the particular claim. The method of calculation, which would need to be proved if the claim was not settled, requires the contractor to calculate (and disclose) over the arbitrarily chosen period (the contractor would be better to select a more profitable period) the following:

- total organisation overheads, profit, against turnover over the chosen period
- project turnover over the period of the claim

to determine, ultimately, an organisation-wide percentage of overheads to turnover.

This requires certain hypothetical assumptions. It presumes that:

1. the profitability of the organisation during the period of the claim is the same as occurred over the past 3 years, 5 years, or whatever arbitrary sample is taken, and that the profitability of the organisation remains constant throughout the period of the particular project
2. the particular project, and claim period, is typical (i.e. that the particular project or claim period is not unusually profitable or non-profitable)
3. that the particular claim item is typical on the project (that the particular claim item is not likely to have not unusually high or unusually low overheads associated with it, relative to other items on the particular project).

From this, the percentage of organisation overheads and profit to turnover is determined, and applied to the particular claim period, to produce a daily non-job-related overhead cost. This can then be multiplied by the number of additional days caused to the project by each claim.

The calculation should, theoretically, be applied to determine the non-job-related overhead applicable to claim which do not, in fact, delay the total project. Arguably, the non-job-related overheads referable to the particular claim item, should be a pro-rata share of the total overheads to the project, based on the value of the claim relative to the total project costs, even where there is no delay caused to the project.

The above method is the basis for several commonly cited "formulae", used in the calculation of non-job-related overheads. Those formulae include (there may be others):

- the Hudson formula[14];
- the Emden formula[15];
- the Eichleay formula[16].

Given the hypothetical assumptions which go to making the analysis of non-job related overheads at any time, it seems unnecessary to make the distinction between the respective formulae mentioned above. In fact, the analysis being hypothetical, one would normally opt for a more simple formula.

The likelihood is that if this head of claim is to be calculated (I refer to this further below), the contractor should choose a convenient period for the organisation (say 3 years) to determine a percentage of total non-job related overheads and profit to turnover. This percentage should be applied (reduced to a daily rate on the project) pro-rata to the claim period.

4 Loss of Productivity

This head of claim refers to the additional cost caused to a contractor, where the contractor is delayed in performing work on the basis that the work was tendered.

For example, where a contractor is meant to have sole access to a work area, but finds that there are other contractors on that site, and this has the effect of increasing the duration which might be expected for a particular task, the contractor will have a claim, for extension of time and delay costs, to reflect that loss of productivity.

Losses of productivity can arise from a number of areas including:

- Increased labour or additional crews arising from acceleration or increased work scope.
- Trade Stacking.
- Overtime.
- Adverse weather.
- Out of sequence work.
- Disruption or remobilisation to alternate workfaces due to holds placed on the works.
- Contract changes.
- Restricted access.

The usual method of calculating such claims is to compare the actual time for completion of the work with the tendered time for completion of that work. Again, this requires certain hypothetical assumptions:

1. that the real rate of work would have accorded with the rate of work presumed for the purpose of preparing the tender
2. that there were no intervening reasons why this activity would have been able to occur more quickly or more slowly
3. that the tender was properly estimated

Again, the method of calculation is hypothetical. It requires the contractor to determine, and potentially prove if the claim is not settled, theoretical activity times (whether at the time of tender, or in preparing the claim), for comparison with the actual activity time.

The calculation of construction cost claims, therefore, is, in part, mere record collection and collation of recordable data (heads of claim 1 and 2) plus certain hypothetical calculations (heads of claim 3 and 4).

In practice, the contractor usually calculates heads of claim 1 and 2, and simply adds a percentage for "margin" in respect of heads of claim 3 and 4. Often, that percentage is included in the contract (for example, the item in Annexure Part A of AS2124-1992, in which a percentage is inserted to represent the contractor's margin for overheads and profit on daywork under clause 41). In practice, this is the most convenient method and is likely to be as accurate as a more complicated mathematical assessment.

[14] Hudson formula refers to the pro-rata formula to be found in the classic constructional text *Hudson on Building Contracts*.
[15] The formula to be derived from the text *Emden on Building Contracts*.
[16] This refers to a USA Board of Arbitrators decision in the 1960's.

In the absence of such an agreed margin, or where the claim is large enough, however, the methods outlined briefly in paragraphs 3 and 4 above need to be followed.

11.3 RESTITUTION CLAIMS – CLAIM FOR A "REASONABLE SUM"

In some cases, a contractor may have a claim in restitution for a "quantum meruit" (the better term for this type of claim is "*restitutionary quantum meruit*").

This type of claim is sometimes referred to as a "quantum meruit" claim. The words "quantum meruit" means, simply, "so much as he has earned". The cause of action, however, is in restitution.

The categories of circumstances where a restitutionary quantum meruit claim might come up:[17]
1. no genuine agreement between the parties
2. work is done in expectation of the contract
3. termination of the contract by repudiation
4. termination of the contract by frustration
5. an unenforceable contract
6. work done outside the contract

The ability to recover reasonable remuneration for work carried out pursuant to an ineffective contract, or where there is no contract at all, but where justice demands that compensation be paid, was confirmed authoritatively by the High Court of Australia in *Pavey and Matthews Pty Ltd v Paul* [18]. The court identified the elements required for this type of claim as follows:
1. no subsisting valid and enforceable contract between the parties;
2. a claimant has performed work conferring a benefit without being paid remuneration as agreed;
3. the benefits conferred were not intended as a gift or done gratuitously; and
4. the benefit has been actually or constructively accepted by the other party at the expense of the claimant ("unjust" factor).

In *Pavey and Matthews Pty Ltd v Paul*, a builder claimed payment for work done on a residential building project pursuant to an oral contract entered into with the owner. Under Victorian legislation then in force, contracts for residential building work were unenforceable unless in writing. The owner relied on the statute in defence of the builder's claim. The High Court held that, independently of the unenforceable contract, the law recognised that a claim would lie for reasonable remuneration for the benefits conferred upon the owner by the builder and accepted by the owner. The court found that the owner had been **unjustly enriched** by the builder's work and was liable to make restitution for that benefit by paying the builder compensation representing the reasonable value of the benefit conferred.

The High Court stated the general principle that an action will lie where a person actually or constructively accepts a benefit in circumstances where the recipient would be unjustly enriched at the expense of the plaintiff if recovery were not permitted. At page 227 of the report, Mason J (later the Chief Justices) and Wilson J concluded:

> *Deane J., whose reasons for judgment we have had the advantage of reading, has concluded that an action on a quantum meruit, such as that brought by the Appellant, rests, not on an implied contract, but on a claim to restitution or one based on unjust enrichment, arising from the Respondent's acceptance of the benefits accruing to the Respondent from the Appellant's performance of the unenforceable oral contract. This conclusion does not accord with acceptance by Williams Fulligar and Kitto JJ. Turner v Bladin of the views expressed by Lord Denning in his articles....basing such a claim in implied contract. These views were a natural reflection of prevailing legal thinking as it had developed to that time. The members of this Court were then aware that his Lordship had....disregarded his early views in favour of the restitution or unjust enrichment theory. Since then the shortcomings of the implied contract theory have been rigorously exposed....and the virtues of an approach based on restitution and unjust enrichment...widely appreciated...we are therefore now justified in recognising, as Deane J. has done, that the true foundation of the right to recover on a quantum meruit does not depend on the existence of an implied contract.*

[17] These categories are described in a 1992 article, D. S. Jones and R. T. Varghese, "*Quantum Meruit in Australia - How the Rules Calculating Value for Work Done are Changing*", [1992] 9 BCL 101.
[18] (1988) 164 CLR 221.

> *Once the true basis of the action on a quantum meruit is established, namely execution of work for which the unenforceable contract provided, and its acceptance by the Defendant, it is difficult to regard the action as one by which the Plaintiff seeks to enforce the oral contract*.
> (emphasis added)

His Honours were concluding, there, contrary to earlier authority, that the true basis for an action in restitution lay in **unjust enrichment**, not implied contract.

Deane J considered the circumstances in which such a remedy would become relevant. At page 256:

> *The quasi/contractual obligation to pay fair and just compensation for a benefit which has been accepted will only arise in a case where there is no applicable genuine agreement or where such an agreement is frustrated, avoided or unenforceable. In such a case it is a very fact that there is no genuine agreement or that the genuine agreement or that the genuine agreement is frustrated, avoided or unenforceable that provides the occasion for (and part of the circumstances giving rise) the imposition by the law of the obligation to make restitution).*

This remedy has been considered regularly by the Australian courts. For example:

- In *Haxton & Ors v Equuscorp Pty Ltd* [2010] VSCA 1 (29 January 2010), a number of investors had invested in a series of blueberry farm projects. Equuscorp sought to recover from the investors as a debt, or alternatively in restitution, the outstanding principal and interest claimed under the loan agreements they had each entered into. The Victorian Court of Appeal considered the remedy in restitution (before finding, on the specific facts, that Equuscorp could not recover here).

- In *Hughes v Molloy* & anor [2005] VSC 240 (29 June 2005), Mr Hughes bought a house as an investment in 1990. A year later he allowed the house to be rented to the Molloys for $130 per week rent; there was no formal agreement involved in the transaction. The Molloys, over a number of years, built extensions and additions to the home. Hughes knew about this but once again there was no formal agreement. The magistrate in the case accepted that the Molloys were entitled to an award of restitution under the principles set out in *Pavey & Matthews v Paul*. Hughes appealed. In the Victorian Supreme Court, Byrne J concluded that the measure of the damages was to be the enhanced value of the property as the measure of compensation, rather than a calculation of the cost of the work.

- In *Intertransport International Private Ltd & Anor v Donaldson & Anor* [2005] VSCA 303 (15 December 2005), the Victorian Court of Appeal was considering an appeal against the decision of a judge of the County Court dismissing a claim for recovery of money paid for the manufacture and delivery of specialised heat pads and other equipment that, in the event, the manufacturer never supplied. The manufacturer said that the purchaser did not request delivery of the 56 undelivered heat pads, notwithstanding that they had ordered and paid for them, because they had sold the business for which the heat pads were required, though the manufacturer was at all times willing and able to supply them. The court considered the legal basis for the purchaser's argument as follows:
  > *In broad terms, the essential question raised by their claim was whether, by retaining the money in question, the respondents have been unjustly enriched or, put another way, whether it would be unconscionable for them to retain it. To put this criteria in context, it should be noted that in Pavey & Matthews Pty Ltd v Paul, Deane, J. cautioned that "to identify the basis of such actions as restitution and not genuine agreement is not to assert a judicial discretion to do whatever idiosyncratic notions of what is fair and just might dictate". Moreover, Deane, J. did not treat unjust enrichment as a legal requirement or basis for restitutionary claims. Rather, his Honour put forward unjust enrichment as a conceptual framework for analysing at least some restitutionary claims within which the ultimate question is whether it would be fair and just for the defendant to make restitution of the benefit sought to be recouped by the plaintiff.*
  > *…… The likelihood is that however, it is doubtful whether such mere breach of a contract in the circumstances of this case can amount to a total failure of consideration. Ordinarily, where a contract remains to some extent executory, there can be no total failure of consideration….*

- In the High Court decision of *Lumbers v W Cook Builders Pty Ltd (in liquidation) [2008]* HCA 27, the High Court held that the respondent, W Cook Builders Pty Ltd (Builders), had no right to claim payment from Lumbers for work done or money spent where there was no contract between them. In essence, the High Court found that unjust enrichment (which is a type of restitution) will not arise if

there is a contract. This is the case even if the contract reflects a bad deal and unjust enrichment would cure a problem caused by imperfect documentation (together with evidentiary and practical problems in the litigation).

- In *Sopov & Anor v Kane Constructions Pty Ltd (No 2)* [2009] VSCA 141 (15 June 2009), the Victorian Court of Appeal followed authority to conclude that the right of a builder to sue on a quantum meruit following a repudiation of the contract has been part of the common law of Australia.

Work performed outside the Contract

The more complex issue will be where a contractor, having entered into a contract to perform certain works, is ultimately requested to perform work which is so different from that upon which it tendered, that it is entitled to be paid on a quantum meruit.

The principal authority for this proposition is said to be the *Sir Lindsay Parkinson* case[19]. In that case, there was a contract to perform works, on a cost plus with a cap basis, to a value of £5M. The ultimate cost of the works was around £6.68M. The court concluded that the work executed was so far outside the scope of the original contract works that the contractor was entitled to be paid a reasonable sum for the work on a quantum meruit basis.

In *Update Constructions Pty. Ltd. v Rozelle Child Care Centre Ltd*.[20] the New South Wales Court of Appeal was considering additional structural works performed as a result of subsurface conditions without the builder giving the required written notice to the proprietor of the variations. The architect authorised the construction of the additional work.[21] Kirby P (later High Court Justice Kirby) repeated the conclusion of the High Court in *Pavey* at page 227:

> *... (the builder's remedy) rests, not on implied contract, but on a claim to restitution based on unjust enrichment, arising from the respondent's acceptance of benefits accruing to the respondent from the appellant's performance of the unenforceable oral contract ...*

Kirby P then returned the case to the arbitrator for decision.

In practice, it will be difficult for parties who continue to perform the work which is the subject matter of the request, without objection, and who subsequently claim to be entitled to a quantum meruit on this basis (that the work is so different to the originally contracted work that it is no longer covered by the contract).

11.4 CORONA VIRUS COVID 19

The position under existing standard form construction contracts

Parties to construction contracts entered into recently before early 2020 have been affected by restrictions associated with the Corona Virus COVID 19, some of those restrictions prescribed by various government authorities, and some restrictions the natural result of time and cost over-runs on construction contracts caused by the Coronavirus COVID 19 generally.

Where an existing construction contract is affected by things arising out of or in connection with Coronavirus COVID 19, that construction contract is likely to result, in the best cases, in the Contractor having an entitlement to an extension of time but no entitlement to additional payment under the particular construction contract, and in the worst cases, to that construction contract being frustrated. The general position is that delays which occur through no fault of either party but are referred to, from time to time as “force majeure” delays or events (for example, inclement weather, industrial stoppages, Acts of God, civil wars...). The likelihood is that delays associated with Coronavirus COVID 19 are in this category.

For example, AS2124-1992 Clause 35.5 provides:

[19] *Sir Lindsay Parkinson & Co. Ltd. v Commissioner of Works* [1949] 2 KB 632.
[20] (1990) 20 NSWLR 251.
[21] The total amount in dispute was less than $20,000. The dispute proceeded through an arbitration then to Rogers CJ in the Commercial Division and then onto the Court of Appeal on a legal point.

35.5 Extension of Time for Practical Completion

.....

If the Contractor is or will be delayed in reaching Practical Completion by a cause described in the next paragraph and within 28 days after the delay occurs the Contractor gives the Superintendent a written claim for an extension of time for Practical Completion setting out the facts on which the claim is based, the Contractor shall be entitled to an extension of time for Practical Completion.

The causes are -

(g) events occurring on or before the Date for Practical Completion which are beyond the reasonable control of the Contractor including but not limited to -

industrial conditions;

inclement weather;

(h) any of the following events whether occurring before, on or after the Date for Practical Completion -

(vi) delays caused by -

the Principal;

the Superintendent;

the Principal's employees, consultants, other contractors or agents;

(vii) actual quantities of work being greater than the quantities in the Bill of Quantities or the quantities determined by reference to the upper limit of accuracy stated in the Annexure (otherwise than by reason of a variation directed under Clause 40);

(viii) latent conditions;

(ix) variations directed under Clause 40;

(x) repudiation or abandonment by a Nominated Subcontractor;

(xi) changes in the law;

(xii) directions by municipal, public or statutory authorities but not where the direction arose from the failure of the Contractor to comply with a requirement referred to in Clause 14.1;

(xiii) delays by municipal, public or statutory authorities not caused by the Contractor;

(xiv) claims referred to in Clause 17.1(v);

(xv) any breach of the Contract by the Principal;

(xvi) any other cause which is expressly stated in the Contract to be a cause for extension of time for Practical Completion.

.....

AS4000-1997 Clause 34.3 provides:

34.3 Claim

The Contractor shall be entitled to such extension of time for carrying out WUC (including reaching practical completion) as the Superintendent assesses ('EOT'), if:

the Contractor is or will be delayed in reaching practical completion by a qualifying cause of delay; and

the Contractor gives the Superintendent, within 28 days of when the Contractor should reasonably have become aware of that causation occurring, a written claim for an EOT evidencing the facts of causation and of the delay to WUC (including extent).

If further delay results from a qualifying cause of delay evidenced in a claim under paragraph (b) of this subclause, the Contractor shall claim an EOT for such delay by promptly giving the Superintendent a written claim evidencing the facts of that delay.

"*Qualifying cause of delay*" is defined, in Clause 1, to mean:

any act, default or omission of the Superintendent, the Principal or its consultants, agents or other contractors (not being employed by the Contractor); or

other than:

a breach or omission by the Contractor;

industrial conditions or inclement weather occurring after the date for practical completion;

……

The likelihood is that however, delays associated with Coronavirus COVID 19 do not entitle the Contractor to additional payment.

For example, AS2124-1992 Clause 36 provides for the Contractor to be entitled to additional payment for delays caused by the Principal:

> ***36. DELAY OR DISRUPTION COSTS***
> *Where the Contractor has been granted an extension of time under Clause 35.5 for any delay caused by any of the events referred to in Clause 35.5(b)(i), the Principal shall pay to the Contractor such extra costs as are necessarily incurred by the Contractor by reason of the delay.*
> *.....*

AS4000-1997 Clause 34.9 provides for the Contractor to be entitled to additional payment for delays caused by the Principal:

> ***34.9 Delay damages***
> *For every day the subject of an EOT for a compensable cause and for which the Contractor gives the Superintendent a claim for delay damages pursuant to subclause 41.1, damages certified by the Superintendent under subclause 41.3 shall be due and payable to the Contractor.*

Frustration of the construction contract

The likelihood is that the effect of Coronavirus COVID 19 (if substantive) would entitle either party to treat the construction contract as frustrated.

In *Codelfa Construction Pty Ltd v State Rail Authority of NSW* [1982] HCA 24, the High Court was considering a construction project in which the State Rail Authority of NSW) accepted a tender by Codelfa to excavate tunnels for a railway line in NSW. Codelfa commenced work, three shifts a day, seven days a week. However, local residents subsequently obtained an injunction that reduced working hours to six days a week, two shifts a day. Codelfa claimed delay costs and extensions of time. The High Court concluded that the construction contract was frustrated.

> *38. ....my conclusion is that, if Codelfa is entitled to any relief in respect of the changed circumstances, that relief is more appropriately founded on the doctrine of frustration than on the implication of a term. ....*
> *39. In Brisbane City Council v. Group Projects Pty. Ltd. (1979) 145 CLR 143, at pp 159-163 , Stephen J. discussed the authorities. The more recent authorities, National Carriers Ltd. v. Panalpina (Northern) Ltd. (1981) AC 675 and Pioneer Shipping v. B.T.P. Tioxide (1982) AC 724 , do not call for any revision of that discussion. I agree with Stephen J.'s acceptance of the approach adopted by Lord Reid and Lord Radcliffe in Davis Contractors. Lord Reid said that the task of the court is to determine "on the true construction of the terms which are in the contract read in light of the nature of the contract and of the relevant surrounding circumstances", "whether the contract which they did make is . . . wide enough to apply to the new situation: if it is not, then it is at an end" (1956) AC, at pp 720-721 . Later he described frustration as "the termination of the contract by operation of law on the emergence of a fundamentally different situation" (1956) AC, at p 723 . (at p357)*
> *40. Lord Radcliffe (1956) AC, at p 729 said:*
> *". . . frustration occurs whenever the law recognizes that without default of either party a contractual obligation has become incapable of being performed because the circumstances in which performance is called for would render it a thing radically different from that which was undertaken by the contract. . . . It was not this that I promised to do."*
> *His Lordship, noting that special importance attaches to an unexpected event, observed "There must be as well such a change in the significance of the obligation that the thing undertaken would, if performed, be a different thing from that contracted for". (at p357)*
> *41. It is implicit, if not explicit, in the judgment of Stephen J., as in the speeches of Lord Reid and Lord Radcliffe in Davis Contractors, that to express a preference for this view of frustration as against the theory of the implied condition and other suggested bases is not to cast doubt on the authority of earlier decisions. This is of critical importance because the earlier cases provide many illustrations of the proposition that a contract will be frustrated*

when the parties enter into it on the common assumption that some particular thing or state of affairs essential to its performance will continue to exist or be available, neither party undertaking responsibility in that regard, and that common assumption proves to be mistaken - ....

42. The first is that the common assumption must be found in the contract itself. The answer to this objection is that, granted that the assumption needs to be contractual, in the case of frustration, as with the implication of a term, it is legitimate to look to extrinsic evidence in the form of relevant surrounding circumstances to assist us in the interpretation of the contract, unless its language is so plain that recourse to surrounding circumstances would amount to no more than an attempt to contradict or vary the terms of the contract. .....

44. The second objection is that the proposition does not sufficiently acknowledge the fact that the event which generally, if not universally, works a frustration, is an event which supervenes after the making of the contract, viz. a change in the law which makes it impossible for the parties to execute the contract. It is not surprising that the cases commonly throw up situations of supervening impossibility caused by a change in the law - they are the more common instances of the unforeseen or unexpected occurrence. But in principle there is no reason why a mutual assumption arising from a mistaken view that an activity is immune from injunctive relief should not attract the principle of frustration. No doubt it is more difficult in such a case to show that the grant of injunctive relief was not foreseen or could not reasonably have been foreseen, but if that can be shown then the doctrine of frustration should apply. The injunction is a supervening event though it does not stem from any alteration in the law. (at p359)

…….

47. The critical issue then is whether the situation resulting from the grant of the injunction is fundamentally different from the situation contemplated by the contract on its true construction in the light of the surrounding circumstances. The contract itself did not require that the work be carried out on a three shift continuous basis six days a week without restriction as to Sundays. But it required completion of the works within 130 weeks. And Codelfa with its tender had submitted a construction programme which involved a three shift continuous basis six days a week. By cl. S.6 of the specifications Codelfa was required to submit a revised programme of work to the Engineer for his determination within thirty calendar days of the issue of a notice to proceed under the contract. This Codelfa did. Again it made provision for the method of operation already mentioned. It was accepted by the Engineer. (at p360)

55 .... come to the conclusion that the performance of the contract in the events which have occurred is radically different from performance of the contract in the circumstances which it, construed in the light of surrounding circumstances, contemplated.

The likelihood is that restrictions associated with Coronavirus COVID 19 would mean that a construction contract would meet the test of "frustration" as articulated by the High Court in *Codelfa*. For that reason, rather than see a construction contract terminated on this basis, leaving the Principal to have to re-tender, with a likely delay, and cost increase, principals have usually preferred to negotiate a delay cost payment mechanism with the construction contractor.

12 CONSTRUCTION CONTRACT DISPUTE MECHANISMS

12.1 EXPERT DETERMINATION

Expert determination has been used, successfully, regularly in modern times, in construction disputes. The advantage is that the process is cheap, quick, and final. The disadvantage is that the parties need to forgo the full legal processes (pleadings, discovery, evidence, cross-examination, appeal rights). On one view, giving up the full legal processes is may be of little disadvantage (especially in the lower money disputes), and that the cost and time saved in avoiding the protracted legal process has more commercial value.

Where the parties have agreed to go to expert determination (usually, as in commercial arbitration, this agreement is contained in the original contract), the expert and/or the person to nominate the expert, is set out in that agreement. Alternatively, the parties agree to refer their dispute to expert determination, pick an expert, and the parties execute an Expert Determination Agreement.

The process is up to the parties, but would usually follow this general approach:
1. The Claimant submits written submissions (including any documents Claimant relies on) to the Expert and to the other party.
2. The Respondent submits written submissions (including any documents Claimant relies on) to the Expert and to the other party.
3. The Claimant submits a reply (if any).
4. The parties have a meeting/conference/make submissions before the Expert, and make any further submissions.
5. The Expert delivers a written determination.

The legal standing of expert determination is complex. The parties are contractually bound by their agreement to refer the dispute to expert determination. The court will look to the contract (for example: "the parties agree to be bound") and, accordingly, be slow to overturn the determination of the Expert, in the absence of some factor that goes beyond the contract that the parties bound themselves to (eg fraud, collusion, or some substantive total factual error, …). In substance, it will usually be difficult (but not impossible) to persuade a court to set aside a determination of the Expert.

Mr Justice McHugh identified 3 key legal issues in a paper[22]. His Honour reviewed the historical development of the court's approach to reviewing errors of the Expert in the determination.

The cases suggest the more universal approach taken by the courts will be that parties, except in extreme circumstances, are generally to be held to their agreement to be bound by the determination of the Expert).

In *Firedam Civil Engineering Pty Ltd v Shoalhaven City Council* [2010] NSWCA 59 (19 April 2010), the NSW Court of Appeal made a declaration that an expert determination was not binding on the parties. MacFarlan J, in the principal judgment, reasoned that, there being an inconsistency in the reasoning of the expert, in making the determination he had made, and determining that the Principal had, in making variations, delayed completion, thereby entitling the Contractor to an extension of time, yet failing to give the Contractor delay costs:

> *"the Contractor can fairly say, as it does, that it has not been told by the Expert why it is not entitled to delay costs"*.

Macfarlan J concluded that, the expert, in failing to give reasons, had gone outside the expert determination agreement, accordingly:

> *"A departure from the Contract having been demonstrated by the Contractor, the whole of the Expert Determination must therefore be regarded as being outside the contemplation of the Contract. The Contractor is thus entitled to a declaration that the Expert Determination is not binding upon the parties to these proceedings."*

In *TX Australia Pty Limited v Broadcast Australia Pty Limited* [2012] NSWSC 4 (16 January 2012), the NSW Supreme Court (Brereton J) was considering a challenge to an expert determination by a party to a broadcast

[22] The Hon Michael McHugh AC, "Expert Determination", paper delivered to the Chartered Institute of Arbitrators (Australia), 30 June 2007.

infrastructure contract. The contract included an expert determination clause in relation to the fee, failing agreement, to be included in licence renewals. Broadcast Australia Pty Limited (BA) held a licence to use broadcast transmission towers owned by TX Australia Pty Limited (TXA), a joint venture of the Seven, Nine, and Ten, networks, which enabled BA to provide stand-by digital television transmission services to the Australian Broadcasting Corporation (ABC). TXA disagreed with the valuations made by the expert appointed pursuant to the contract, and argued:

1. The expert erred in adopting an objective "market value" assessment to ascertain fee as opposed to a subjective "fair value" approach (the contract referred to 'fair market value').
2. The expert did consider the special value of the contract to BA ("fair value" was inconsistent with TXA's position as a monopolist), (the contract referred to "willing but not anxious and involuntary purchaser").
3. The expert erred in failing to give weight to current fees under original contract.
4. The expert erred in using incorrect comparator in assessing "reasonable fee" (in comparing digital audio broadcasting to digital television broadcasting to assess cost recovery and profit margin).
5. The expert erred in failing to give detailed reasons.
6. The expert erred in that the decision was "manifestly unreasonable".

Brereton J concluded, in upholding the expert's determination:

1. The expert was correct in adopting an objective "market value" assessment.
2. The expert did consider the special value of the contract to BA.
3. The expert did give weight to current fees under original contract (he gave them little weight, the fees were 10 years old, but he did consider them).
4. The expert did not err in comparing digital audio broadcasting to digital television broadcasting to assess cost recovery and profit margin, errors in methodology employed by an expert valuer do not constitute errors of law. Further, expert evidence adduced in attempt to illustrate manifest error indicated that there was no "manifest error".
5. The expert did not err in failing to give detailed reasons, the reasons provided were sufficient.
6. The court did not agree that the decision was "manifestly unreasonable".

In summary, it seems that the court will look to the contract (for example: "the parties agree to be bound") and, except in extreme cases, decline to overturn the determination of the Expert, in the absence of some factor that goes beyond the contract that the parties bound themselves to (eg fraud, collusion, or some substantive total factual error, …).

Trend towards expert determination in construction contracts?

In recent years, certain factors have suggested that expert determination clauses in construction contracts may become the preferred option:

1. The cost and management time involved in litigation and commercial arbitration have become progressively higher relative to the amounts in dispute.
2. The increased influence of adjudication under security of payment legislation has made the parties to construction contracts more used to expert determination as a process.

In addition, in Victoria, under Section 10A, where a contract sum exceeds $5 million, and the Contract provides a "*method of resolving disputes under the contract*", then an adjudicator is not to take into account Class 2 Claimable Variations.

Section 10A(3)(d)(ii) of the *Building and Construction Industry Security of Payment Act 2002 (Vic)* provides that Class 2 Claimable Variations are not able to be claimed in adjudication where the Contract Sum is over $5 million and the Contract includes a "*method of resolving disputes under the contract*" for the purpose of Section 10A(3)(d)(ii). In *SSC Plenty Road v Construction Engineering (Aust) & Anor* [2015] VSC 631 (13 November 2015), the Victorian Court of Appeal confirmed the trial judge (Vickery J, the Victorian Judge in Charge of the Technology and Construction List of the Supreme Court of Victoria) in finding that a dispute resolution clause providing for mediation, and/or litigation, was not a "*method of resolving disputes under the contract*" for the purpose of Section 10A(3)(d)(ii). Accordingly, in Victoria, on contracts exceeding $5 million, the likelihood is that the Contract will now include a dispute resolution clause requiring all disputes to be resolved by expert determination or commercial arbitration.

12.2 DISPUTE REVIEW BOARDS/DISPUTE AVOIDANCE BOARDS

A Dispute Review Board (DRB) or Dispute Avoidance Board (DAB) is, generally, created by the parties to the contract, at the start of the contract, to meet regularly, (irrespective of whether any dispute has been referred to it), to regularly review the progress of the project, and, where requested, to provide a binding and/or non-binding report in relation to disputes referred to it by either or both of the parties.

There are at least 21 major projects in Australia where there is a DAB in place.

The statistics on the minimal number of disputes coming out of projects with a DRB is compelling. A number of academic studies have been published in this area. The substantive conclusion from the above is that DRBs are used widely on major projects, and reduce construction contract disputes on those projects.

The process, generally, is as follows:
1. Board members are selected by and approved by both parties (usually one board member from the Principal, one board member from the Contractor, the third chosen by those 2 board members) soon after award of the Contract.
2. Board members are provided with all contract documents and copies of construction progress reports and minutes of weekly project meetings
3. Brief status meetings and site tours are held periodically (monthly) at the job site, board members confer with the Principal's and the Contractor's representatives, become familiar with project procedures and participants, and are informed of progress and potential disputes.
4. Disputes may be referred to the DRB by either party for a hearing (informal) and written report, then the DRB makes a fast, non-binding recommendation, including reasons.
5. Parties may proceed to the dispute resolution procedures if still dissatisfied,

Many major world-wide standard form agreements now include DRB clauses. For example, Clause 20.2-20.4 of the *FIDIC Conditions of Contract for Construction* provides:

> ***20.2 Appointment of the DAB***
> *Disputes shall be adjudicated by a DAB in accordance with sub-clause 20.4 [Obtaining DAB's Decision]. The parties shall jointly appoint a DAB by the date stated in the Appendix to Tender.*
> *– DAB comprises 1 or 3 members (default 3).*
> *– Appointment process for 3 person DAB.*
> *– Selection from list of potential members if included in the Contract.*
> *– Tripartite Agreement(s) to incorporate by reference General Conditions of Dispute Adjudication Agreement [Appendix].*
> *– Remuneration of DB member(s).*
> *– Matter can be referred to DB for opinion only if parties agree.*
> *– Appointment of replacement DB member.*
> *– Termination of DB member's appointment by mutual agreement of parties.*
> **…….**
>
> ***20.4 Obtaining DAB's decision***
> *If a dispute (of any kind whatsoever) arises between the Parties in connection with, or arising out of, the Contract or the execution of the Works, including any dispute as to any certificate, determination, instruction, opinion or valuation of the Engineer, either Party may refer the dispute in writing to the DAB for its decision, with copies to the other Party and the Engineer. Such reference shall state that it is given under this Sub-Clause.*

The FIDIC Conditions provide for:
1. Time of receipt for 3 person DAB.
2. Parties to make available information, site access and facilities requested
3. by DAB.
4. DAB not acting as Arbitrators.
5. DAB to give reasoned decision within 84 days.
6. Decision binding on both parties unless and until revised in amicable

7. settlement or arbitral award.
8. Either Party may give notice of dissatisfaction (with reasons) of DAB
9. decision within 28 days of receiving decision.
10. Notice of dissatisfaction condition precedent to entitlement to commence
11. arbitration.
12. Decision is final and binding unless notice of dissatisfaction given within 28 days

The likelihood is that, in Australia, it will become a government and/or financier requirement that a major project include one form or another of DAB.