

incentive to control costs and time.

Whether it was a valid perception or not, research project participants felt that the amount of disputed claims in the U.K. was probably on about the same level as Australia, but that this was not considered out of the ordinary and was regarded simply as business as usual. U.K. developments would seem to indicate that the U.K. is ahead of Australia in responding to the problems of claims and disputes.

#### The United States

In many areas of the United States of America, disputed claims have reached epidemic proportions.

According to the Associated General Contractors of America, the current claims/disputes situation in Australia parallels what was happening in the United States in the early to mid-Seventies, i.e. up to 18 years ago.

Competitive pressures on designers over the last decade or so has resulted in a diminution in the standard of design and documentation produced by architects and engineers. The result has been the development of an environment which is prone to claims and disputes.

In response to the claims and disputes environment, in the private sector, clients have moved to Design + Build contracts, Construction Management and to negotiated, rather than low bid contracts. However, AGC continues to promote its policy of open tendering, with the contract award going to the low bid tenderer.

Arbitration is bypassed by many clients as a means of resolving disputes, due to a perception that the system favours the contractor in decisions by some arbitrators to decide in favour of both parties, rather than on the basis of a strict assessment of entitlement.

In response to arbitration apparently breaking down as an efficient method of dealing with disputes, due to increases in costs, managerial impact and the time required, there have been moves to develop an expedited arbitration system involving one day proceedings for small matters and a simplified arbitration system for more complex cases. There has also been a development and use of mediation. There have also been efforts to set up a mediation panel for particular contracts along the lines of the Disputes Review Board outlined in the Report.

## 5. SUMMARY OF THE FINDINGS OF THE RESEARCH PROJECT

As perhaps could have been expected, there were no magic solutions. However, the research revealed that there are available a range of changes to policies, contracts and practices, which should assist to increase the efficiency of the industry and to address the problem of claims and disputes.

Recommendations under each subject heading are set out in bold type.

### PROBLEM AREAS AND RECOMMENDATIONS

#### Selection of Contractors

##### Recommendations

**Clients should use a system of prequalification to select competent tenderers to tender for their projects and, for clients who regularly operate across a spectrum of construction, to select tenderers for particular categories of construction.**

**There is no recommendation to change in Australia to a median system of selection from the system of acceptance of the lowest bid by a prequalified competent contractor.**

**However, bids which are apparently low, say 15% below a properly prepared estimate or the next lowest tender price, should be rejected, unless the contractor is able to establish that the price is not unrealistically low and that the work can be properly carried out at this price.**

**There should be developed a concept of selection on the basis of the lowest "acceptable" price, rather than selection simply on the basis of low bid. Factors which might be considered in determining the lowest "acceptable" price include:**

- **conformance with the tender documents;**
- **tender qualifications;**
- **technical adequacy of the offer, where this is an applicable factor;**
- **adequacy of the tendered price;**
- **technical and financial capacity of the tenderer;**
- **the form and adequacy of security offered;**
- **the tenderer's track record, including relevant experience and capacity;**
- **the tendered programme and its implications;**
- **any exposure which might be created through the tendered rates and prices, e.g. in relation to subsequent variations or liquidation of the contractor;**
- **claims history of the tenderer, particularly regarding unreasonable, spurious, factored or frivolous claims.**

#### Quality Of Documentation

The comment was made repeatedly around the world, including Asia, that the greatest cause of claims and disputes in the construction industry is related to problems in contract documentation, including errors, contradiction, ambiguity and late supply of documents, which gives rise to delays and inefficiencies and hence claims.

##### Recommendations

**Attention should be directed at ensuring that the client's objectives and requirements have been adequately defined in the brief to the designers.**

**Sufficient time should be permitted to ensure that design and documentation are properly carried out and that they meet the client's objectives and requirements.**

**Responsibility should be allocated to ensure that documentation is properly coordinated.**

**Consultants should be paid on a realistic level of fees for the work which they are required to undertake.**

**Action should be taken to coordinate the design and construction phases of complex projects, by construction industry involvement in the design process.**

**Consideration should be given to the development of contract packages which minimise flow on effects of problems and, where applicable, assist fast tracking.**

**Consideration should be given to reducing design fees in relation to cost increases during the construction period for which the design consultant is responsible.**

#### Contingency Allowances

Construction involves unforeseeable events, problems, errors and omissions in the construction of, in effect, prototypes. Unfortunately, problems, claims and disputes are to some degree a natural consequence of construction activity, particularly if there is any element of fast-tracking in the project.

##### Recommendations

**In budgeting and planning for projects, clients and their consultants should make reasonable contingency allowances in relation to both time and money for problems which might**

occur in design and construction, foreseeable or otherwise.

In some instances, it may be preferable not to signal the existence of these contingency allowances to the contractor, or the quanta involved.

#### **Risk Allocation**

There is a tendency on the part of clients and consultants to respond to problems, claims and disputes by attempting in future contracts to allocate the risk for the events encountered to the contractor, which often leads to dispute and attempts at creative legal solutions.

If risk allocation is identified, there is often a reluctance or failure by tenderers to price the risk involved.

#### **Recommendations**

**The party best equipped to control a particular risk should be allocated that risk.**

**Care should be taken to allocate risk in a clear and simple fashion.**

**There should not be a "blurring" of risk allocation and control of those risks between the parties.**

**Despite difficulties which may arise in relation to competitive tendering, tenderers must make an assessment of risk allocation and price the risks which they are obliged to assume accordingly.**

#### **Role of the Superintendent/Architect**

The involvement of designers in contract administration contains the potential for conflict of interest and results in dispute.

The role of the contract administrator under many industry contracts in reaching preliminary decisions on contractors' claims and disputes can also involve a conflict of interest, in the event that the claim or dispute relates back to actions or inaction by the architect/superintendent in contract administration.

#### **Recommendations**

**Clients, consultants and employees should ensure that they understand the nature of the role of the architect/superintendent and the respective duties and obligations of both client and the architect/superintendent to ensure that the role is performed independently without interference, particularly in the event that an employee is appointed to perform the role.**

**In order to avoid conflicts of interest and resultant claims and disputes in relation to design and design documentation, the designer should not administer the construction contract - a separate person should be engaged to do so; the interests of the designer in ensuring that the project is properly realised can be adequately protected through a quality assurance programme.**

**In order to ensure that conflicts of interest do not develop in the initial determination of disputes which relate back to decisions made in contract administration, the contract administrator should not be responsible for the resolution of disputes. This role should be performed by an independent contract "Adjudicator".**

#### **Bills of Quantities**

The common practice in Australia of providing Bills of Quantities to tenderers for building projects involves a "blurring" of responsibilities. Instead of the contractor's obligation being to construct the project in accordance with the drawings and specification for the price tendered, the obligation becomes to construct the project in accordance with the drawings and specification as described in the Bill of Quantities. Claims and

disputes then frequently arise as to errors and omissions in the Bill when compared to the drawings and specification and the method of measurement by which the Bill was prepared.

Errors, omissions, misdescriptions and ambiguities in Bills of Quantities are a significant cause of friction, claim and dispute in Australia.

On occasions, Bills of Quantities are taken off earlier versions of documentation, rather than from the finalised documentation provided to tenderers.

It is often impractical for tenderers to determine whether anything is missing from the Bill during the tender period; missing items often only become apparent when the job is under construction.

Contractors experienced in employing quantity surveyors to prepare Bills for their own Design and Construct projects, including high rise buildings, have found it unnecessary to prepare a Bill to the detail provided for in the Australian Standard Method of Measurement for Building Works, Fourth Edition. The Standard Method requires examination, with the intention of reducing the detail required of a Bill of Quantities. This should have the effect of reducing the potential for claims and disputes over errors and omissions.

A frequent source of contention is as to the applicability or otherwise of the rates and prices in the Bill of Quantities to the valuation of variations.

#### **Recommendations**

**Clients should desist from providing tenderers with a Bill of Quantities and from using a client prepared Bill of Quantities during construction for pricing purposes; as to do so involves a shift in or "blurring" of the contractor's responsibility which results in claims and disputes.**

**Sufficient time should be allowed to enable tenderers to take off their own quantities.**

**In situations where it is regarded as desirable to provide tenderers with a Bill of Quantities, e.g. in relation to very complex projects or in an overheated market, then sufficient time and money should be allotted and care taken to ensure that the Bill is prepared to the requisite quality to avoid claims.**

**Where a Bill of Quantities is provided to tenderers, tenderers should provide all relevant material from the Bill, together with all relevant drawings, specification and contractual provisions to subcontract and supply tenderers.**

**Consideration should be given to requiring tenderers to provide a priced schedule of activities and to put forward rates and percentages for agreement for subsequent use as a basis for pricing variations.**

**The Standard Methods of Measurement by which Bills of Quantities are prepared should be simplified; the present level of detail is unnecessary and counterproductive. It is likely that a simplified method of measurement will involve some review of NATSPEC (the National Specification) to ensure compatibility between the Bill and the Specification.**

**In preparation of simplified Standard Methods of Measurement, or review of the existing Standards for civil engineering and building works, care should be taken to remove ambiguities and the potential for conflicts and differences in interpretation.**

#### **Schedule of Rates Contracts**

Schedule of Rates contracts, predominantly used in engineering construction, contain the potential for either side to suffer loss or windfall gain, in the event that the expected quantities increase or decrease substantially.

### Recommendation

Schedule of Rates contracts should provide for an order of accuracy, applied to expected quantities, beyond which either contracting party may seek adjustment of rates.

### The Nominated Subcontract System

The NSC system results in considerable complication in Australian contracts in the provisions necessary to deal with the system and causes conflict and dispute. It also causes significant friction in relationships, problems, claims and disputes. It is time to consider whether the system is an anachronism, which causes more problems than it is worth.

It is salient to note that the Nominated Subcontract system is not universal. There are many parts of the world where the concept is not used and is virtually unknown. Construction proceeds in these countries without any apparent difficulty. It should also be noted that there is a distinct movement away from the use of NSCs in the countries where the system has been traditionally used.

#### Recommendations

Clients should avoid using the Nominated Subcontract system.

Wherever possible, clients should avoid any involvement in the selection of subcontractors, but where there are compelling reasons for involvement, it is recommended that consideration be given to the use of alternatives to nomination, such as:

- i. Provision to the head contractor of lists of acceptable specialist contractors (or approval of lists submitted by the head contractor) from which the head contractor can select and negotiate price, conditions, program etc. in the knowledge that the specialist contractor will be acceptable to the client/consultant and will be approved as a subcontractor.
- ii. Joint selection by the head contractor and client/consultant of specialist contractors, with ultimate appointment by the head contractor as an ordinary subcontractor.
- iii. Separate engagement by the client of the specialist contractor, with a co-ordination and integration responsibility placed on the separate contractor and the head contractor. This co-ordination and integration responsibility would usually be assumed at a price by both contractors and usually with some provision for relief for delays and disruption caused by one to the other.
- iv. The use of alternative contract strategies to the traditional head contract system, whereby a construction manager or project manager acts as agent for the client in the engagement and management of trade contractors for both specialist and ordinary trade work.

### Ground Conditions

Disputes over latent conditions are common in relation to major construction works such as roads, airports, bridges, earthworks reclamation, dams, shafts and tunnels. Underground construction is particularly problematic, due to the sensitivity of the process to ground conditions and the difficulty of obtaining accurate geotechnical information. Latent condition disputes have been frequently referred to arbitration and have been the

subject of litigation, involving in some instances appeal to the High Court.

There is a strong case to support the view that the risk of the contractor encountering adverse ground conditions, which could not reasonably have been foreseen, should be borne by the client.

#### Recommendations

Site investigations should be carried out for small and medium size projects, as well as for major projects, due to the incidence of latent condition claims and disputes.

Since it is impractical to expect tenderers to carry out site investigations during the tender period, adequate investigations should be carried out by the client and the results supplied to tenderers.

Risk management for both design and construction should be addressed in site investigations and in the preparation and provision of site information.

These recommendations are supported by and set out in far more detail in *The Institution of Engineers' Guidelines On the Provision of Geotechnical Data In Construction Contracts*.

### Prolongation Costs

Claims for prolongation costs have become a common source of disputation in the industry in relation to both entitlement and quantification. The determination of prolongation costs causes friction and dispute. It can be difficult to calculate the cost effects of delay and to establish such costs to the satisfaction of the client or consultant.

#### Recommendations

Contractors', sub-contractors' and, where applicable, consultants' and suppliers' entitlements to delay costs should be quantified and pre-stated in the respective contracts, provided a proper assessment is made of the likely consequences of delay.

### Variations

A major source of claims and disputes relate to variations. There are variations which are required to overcome unforeseen problems. There are variations which result from errors in and late provision of documents in relation to both fast-track and normal projects. Variations also arise as a result of changes in client requirements.

Attempts to use traditional lump sum contracts in relation to fast track projects, where the design is not finalised and fully documented at tender time, are likely to be disastrous with respect to variations; it is unreasonable to expect that fast tracking can be done under a traditional contract without claims and disputes over variations.

There is a problem in relation to the lack of contractual provisions requiring the contractor and subcontractors to provide estimates of the likely costs and effects of proposed variations to enable proper assessment whether to proceed with the variation and as to whether there are more efficient alternatives.

#### Recommendations

Traditional general conditions of contract are not suitable for fast-tracking and should be avoided, unless supplemented by appropriate special conditions of contract.

Greater focus needs to be placed on the quality of documentation to avoid variations.

Every effort should be made to make clients aware of the implications of varying the work.

Contracts should contain a procedure for dealing with variations such as that contained in the the British Property Federation's Manual of the BPF System.

### Submission of Claims

On occasions, site operational staff mount claims and pursue them at least through the preliminary dispute procedures in the contract without management knowledge and control.

### Recommendations

Management of contractors, sub-contractors and supply organisations should establish internal reporting procedures and require that management approval be granted prior to the initiation of claims and disputes. Sufficient investigations and analysis of the position should be carried out prior to granting such approval.

Similarly, management of client organisations should control what is allowed to go into dispute.

Consideration should be given in contracts to a requirement that a Director of the company sign the notices required to implement disputes as a condition precedent to contractual effect.

Action should be taken to develop reasonable and workable contractual provisions to achieve the timely submission, adequate presentation and timely consideration of claims. The contractual framework for presentation and consideration of claims should be compatible with the dispute resolution provisions of the contract.

### Claims Consultants

There are claims consultants practising in Australia who provide a very valuable service to the industry in preparing claims for contractors in such a way that clients are able to make a proper assessment of the facts upon which the claim is based, the basis of liability which the client has in relation to the claim and which contain justification of the quantum claimed. However, there are also claims consultants who are bad at what they attempt to do.

### Recommendations

Contractors and subcontractors should maintain managerial control over the activities of claims consultants.

The industry should attempt to assess the claims consultants who provide a valuable service and avoid using those who do not.

Claims consultants should not be engaged on a contingency fee basis.

## DISPUTE RESOLUTION

The widespread use of arbitration clauses in construction contracts and the dispute prone nature of the industry results in a greater use of commercial arbitration in the construction industry than in any other industry in Australia.

The rhetoric is that arbitration is the system for the resolution of disputes in the industry and that it provides cheap, efficient and speedy resolution of construction industry disputes.

However, it is a reasonable perception that arbitration has broken down as a cheap and efficient means of resolving construction disputes, albeit that the cause may be the strenuously adversarial manner in which the disputants themselves pursue the arbitral process. The increasing extent of arbitrations which involve a determination of the parties' legal rights and obligations, rather than a determination of matters such as quality is an important factor in the deterioration of the efficiency of the arbitral process in the industry.

The problems of arbitration have led to the development and use of alternative dispute resolution procedures in Australia and elsewhere.

### Recommendations

As a general principle, Alternative Dispute Resolution procedures should be attempted prior to and, hopefully, in lieu of arbitration.

### Contract Adjudicator

A person other than the person administering the contract should be appointed in the contract as an Adjudicator to ensure that no conflicts of interest arise and that disputes are dealt with on their merits, prior to referral to arbitration or litigation.

### Binding Interim Decisions

Industry contracts of all types should provide for binding interim decisions by an independent third party, with the potential for this decision to be overturned after the stage of Practical Completion by an arbitral or court decision, if either party chooses to challenge it.

### Mediation

The industry should make greater use of mediation, due to its cost effectiveness.

Industry contracts of all types should contain provision for mediation as a preliminary step in the dispute resolution process.

### Expert Appraisal

Greater industry use should be made of non-binding Expert Appraisal, due to the success to date in use of this system, particularly where there is a management need for a written third party assessment to underpin negotiated settlement.

The use of a combined mediation/Expert Appraisal system should be used, where appropriate.

### Disputes Board of Review

Consideration should be given to the establishment of a Board of Review for major projects and for contracts involving considerable complexity or potential for dispute.

### Arbitration

The concept of including arbitration clauses in the standard industry contracts should be reviewed, as arbitration is not necessarily the most efficient method of resolving disputes.

A "neutral" organisation, such as The Institute of Arbitrators, Australia or the Australian Commercial Disputes Centre, should be chosen to nominate the arbitrator, in the event of failure of disputants to agree upon an appropriate person or persons to arbitrate a dispute.

In selection or nomination of arbitrators, careful consideration should be given to the qualifications and experience required to efficiently determine the dispute.

If the arbitrator is to be called upon to resolve the parties' legal rights and obligations, rather than to determine matters such as quality, defective work, industry standards and practices, technological adequacy or performance, then an appropriate lawyer, such as a retired judge, Q.C., or appropriate building construction law specialist, should be selected to arbitrate.

If the issues involve determinations of legal rights as well as matters of quality etc., then serious consideration should be given to the use of industry experts to advise legal arbitrators or to sit with them as co-arbitrators.

The industry should take steps to re-orient the process of arbitration to its original purpose as a speedy, cost efficient method of resolving disputes.

Disputants should seriously consider expedited arbitration on the basis of an agreement developed specifically by the parties.

#### ALTERNATIVE CONTRACT STRATEGIES

##### Contractor As Cooperative Team Member

Steps have been taken in the private sector in a number of countries including Australia to involve the builder as an equal team member and to break down the potential for adversarial relationships.

The approaches taken, although differing in detail, involved the engagement of the contractor as a consultant during the design stage. The contractor's role is to provide input on buildability, advice on methods of construction including the use of alternative methods or materials to overcome problems or to improve efficiency, to provide estimates of cost and time for construction and assistance in selection of specialist contractors.

##### Recommendations

The design of projects, particularly those of a complex nature, would benefit from the availability of an experienced constructor's knowledge and expertise, which is largely unavailable and unsought in traditional contracts.

##### Design And Construct

Late provision of design documentation is a most significant cause of claims and disputes.

There is also the potential for claim and dispute as to whether documents provided for construction involve variations from the documents tendered upon.

There are variations of design and construction contracts, which can be employed to address these problems, by placing responsibility on the construction company for the provision of design.

##### .1 Detail Design And Construct

Detail design and construct contracts are reasonably common overseas and have been used to a lesser extent in Australia, in response to these problems. In this approach, the contractor assumes the responsibility of detailing the design, based on a schematic design by others and a detailed specification, subject to an approval process and quality assurance program.

The tenderers produce their own design to enable assessment of methods of construction, take-off of quantities and pricing. Tenderers often submit architectural design alternatives to simplify construction, e.g. to enable slip-forming. Any assertion that the client's requirements are not well defined must be made prior to contract.

##### Recommendations

Greater use of detail design and construct contracts should be made in both the private and public sectors, provided that the client's requirements in terms of performance and standards are sufficiently specified to avoid dispute as to whether or not they have been satisfied.

##### .2 Design And Construct

The most significant advantage of full design and construct is the sole responsibility for delivery. The system solves the interface problems of design and construction. The design and construct contractor is responsible for the design and, as a consequence, places more focus than is usually the case on cost

implications of design including the assessment of buildability and alternatives, coordination of design and timely provision of design documentation. As constructor, the company is only too aware of the cost, time and disruption implications of errors, variations and late supply of documentation. From the client's point of view these problems lie with the design and construct company and are not a source for claim.

The system overcomes the problems of traditional construction contracts in claims and disputes as to whether the contract documents involve variations as against the documents tendered upon and claims in relation to delay and disruption in late provision of documents.

Design and construct contracts permit an overlapping of design and construction and fast tracking, without creating exposure to claims, as there is little potential for the D+C contractor to claim, except in relation to changes in the client's requirements.

On the negative side, it must be considered that there is a very significant potential in design and construct contracts for dispute as to whether the project satisfies the client's requirements. There is also the potential for failures of communication. The client may respond to design and construct proposals with expectations which are not fulfilled. The benefits of claims and disputes minimisation, as compared with a traditional construction contract, could be surpassed by the potential for problems in satisfaction of the brief and client's expectations.

Consequently, preparation of the brief to set out a clear and detailed definition of the client's requirements is most important. Required standards of design, materials, finishes and construction must also be set out sufficiently to ensure that the client's requirements and expectations are identified and understood by both client and D+C contractor and further that the contractor has a clearly expressed obligation to provide the project in conformity with these requirements.

##### Recommendations

Greater use of design and construct contracts should be made in both the private and public sectors, provided a firm and detailed client brief can be prepared for the project.

There is a need to develop an acceptable standard Design and Construct contract.

##### Project Management

The major benefits of project management lie in the control and coordination of design and construction, improved planning, fast tracking and flexibility to alter requirements. To a considerable extent these are factors which will avoid claims, but the system is not necessarily the solution to the claims and disputes problem. Problems in design and management will still generate claims and disputes from the trade contractors carrying out construction.

##### Recommendations

Greater use of project management should be made in both the public and private sectors.

Consideration should be given to the preparation of a standard project management contract for use in both public and private sector construction throughout Australia. To allow for the diversity of projects and client requirements, this agreement may need to take the form of core provisions with additional optional provisions or schedule items to be completed.

##### Construction Management

There are a number of advantages in construction management. The system is sufficiently flexible to accommodate ill

defined client requirements and fast tracking. The system overcomes the adversarial relationships which often occur with traditional contracts. The construction manager, often a traditional head contractor performing a different role, is on the client's team.

Importantly, claims from the head contractor (replaced by the construction manager) are avoided, as the construction manager is usually on a reimbursement of costs and expenses, plus fee basis. However, claims and disputes with the trade contractors are not avoided.

The problem of construction management is the uncertainty of the end cost of construction, due largely to the sensitivity of the process to design and the construction manager's lack of control over or input into the design process. There may be solutions to this problem in providing for the construction manager to have an input into the buildability and cost of design and in the inclusion of cost control objectives in the terms of the construction management contract, e.g. the inclusion of a guaranteed maximum price requirement on the construction manager.

There is no uniform basis for construction management in this country. There would be advantages in the development of a recognised system of construction management, which is reasonable and fair to all concerned.

#### **Recommendations**

**The construction manager should be required to advise on the buildability and cost of design and should have an input into design decisions.**

**Construction management agreements should include cost control objectives and incentives.**

**Consideration be given to the preparation of a standard form of construction management for use throughout Australia.**

#### **New U.K. Contract Strategies**

The Report sets out in some detail the features of the British Property Federation's Manual of the BPF System and the more recent Institution of Engineers' "Specification" for a New Style Contract For Engineering Projects.

Both documents have been developed to promote greater efficiency in the construction industry and, in part at least, to address the problems of claims and disputes in the industry.

#### **Recommendations**

**In the preparation of any revisions to existing contracts or new contracts in Australia, serious consideration should be given to the key features of the BPF system and to the concepts in the Institution of Engineer's Specification for a New Style Contract.**

#### **QUALITY ASSURANCE**

Australian Standard AS2990-1987 Quality Assurance For Engineering And Construction Projects has recently been introduced into the industry. There is currently some uncertainty in the industry over the implementation of the Standard. In the context of this Report, there is some concern that it will not be properly implemented and that it could result in dispute.

#### **Recommendations**

**The National Public Works Conference, the National Building and Construction Council and the Australian Federation of Construction Contractors should jointly examine Australian Standard AS2990-1987 Quality Assurance For Engineering And Construction Projects and develop recommendations and guidelines for its efficient implementation.**

#### **IMPLEMENTATION**

**It is recommended that the National Public Works Conference, the National Association of Australian State Roads Authorities, the National Building and Construction Council and the Australian Federation of Construction Contractors develop a collective strategy to implement the recommendations contained in this Report. □**