recover quantum meruit for work performed prior to frustration of the contract. Frustration does not nullify the contract. It terminates the contract, but the contract and the contract rates still apply to work performed prior to frustration.

An example may assist in demonstrating the risk posed to a contractor in the absence of a clause to protect the contractor. Imagine that, upon discovery of a sacred burial site, work must permanently cease and the contract is held to be frustrated. In the absence of a Frustrated Contracts Act, the common law would apply. It seems that the contractor could recover any moneys due under the contract prior to the date of frustration, e.g. a progress payment where the date for payment preceeds the date of frustration, but could not recover payment for work done since the last progress payment, or for the cost of materials purchased for the works, or for the costs of demobilisation, or loss of profit on the uncompleted work or retention moneys. The contractor may have manufactured or fabricated off site very expensive items for which no progress payment is due until delivery to site. If the contract is frustrated before delivery to site, the common law provides no recompense for the contractor.

Recognising the unsatisfactory situation under common law, Victoria and NSW passed legislation. The legislation in Victoria (S.3(2) of the Frustrated Contracts Act, 1959) firstly provides that the contractor must repay all moneys received under the contract, but the Court may, if it considers it just to so do, allow the contractor to retain the whole or any part of the moneys, not exceeding the expenses incurred by the contractor in performance of the contract. This provides little protection for the contractor and no protection at all where no progress payments have fallen due prior to the date of frustration.

If upon frustration, the principal has received work of some value, the Victorian Act (Section 3(3)) also enables the Court to award to the contractor an amount not exceeding the value of the benefit obtained by the principal, less any payments made by the principal. This is not quantum meruit for the work done by the contractor. For example, at the date of frustration, it may have cost the contractor $8M to build half a building, but the half may only be worth $4M. Under Section 3(3), the contractor only receives $4M. If the principal has paid $6M in progress payments, then Section 3(2) would enable the contractor to retain the $6M. However, if the contractor's expenses had been $5M and not $8M, the contractor would have to repay $1M of the $6M progress payment.

The NSW Frustrated Contracts Act 1978 has a more complicated formula, which endeavours to share the losses of the parties. In the preceding example, where the contractor's costs are $8M and the value received by the principal is $4M, the NSW Act may allow the contractor to recover from the principal an extra $2M, being half the difference between the contractor's costs and the value received by the principal. There are a number of qualifications (including, in the NSW Act but not in the Victorian Act, an overriding discretion given to the Court to make such adjustments in money or otherwise as it considers proper), but the important point is that neither the Victorian nor the NSW Frustrated Contracts Act gives the Contractor the protection which the contractor can obtain, if the contractor has the good fortune or the foresight to have included in the contract a provision for payment in full for work done to the date of frustration, costs reasonably incurred in expectation of completing the work, retention moneys, security and costs of demobilisation. These are the matters covered by Clause 45 of AS2124-1986, but it would be possible to provide in a contract for additional or other remuneration in the event of frustration. The Victorian and NSW acts do not prevent the parties from agreeing upon what adjustments will be made if the contract is frustrated.

To summarize, there is little the parties can do to prevent frustration, except to ensure that the time extension, latent condition and variation provisions of the contract are as broad as possible, but there is something that can be done to protect contractors when a contract is frustrated. Including in the contract a "Termination by Frustration" clause such as that in Clause 45 of AS2124-1986 will provide a measure of protection.

- Philip Davenport

13. GEOTECHNICAL INFORMATION

Although published in 1987, the Institution of Engineers, Australia's Guidelines For The Provision Of Geotechnical Information In Construction Contracts is still not sufficiently well known or used by the industry. This is an excellent document which should be examined in detail and acted upon; there really is nothing better on the subject available elsewhere in the world. The Guidelines are available from EA Bookshops, P.O. Box 588, Crows Nest 2065 at the price of $9.00, or $6.00 a copy for bulk purchases.

Disputes over changed or "latent" ground conditions are relatively common and present a major problem in engineering 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.

Where a contractual remedy is difficult or impossible, claims have been made on other legal bases. Examples include: actions for negligence in the site investigations carried out, in the analysis or description of data, or with respect to relevant information withheld; actions for negligent misstatement or misrepresentation in relation to site information provided or withheld; and actions for negligent information or advice. Action has also been taken under Section 52 of the Trade Practices Act on the basis that, in issuing an inaccurate report, the principal and its consulting engineers were alledgedly engaging in conduct in trade or commerce which was deceptive or misleading or likely to mislead or deceive.

Although there has been a significant amount of litigation over latent condition problems, the case law on this subject is really only an indicator of the extent of the problem. The majority of latent condition claims, which are not settled, are resolved by the process of arbitration, due to the contracts in common use in the industry.

As a result of the concern in the industry at the problems involved in the preparation and provision of geotechnical information for construction contracts and the high incidence of latent condition disputes, the Institution of Engineers, Australia convened a committee to examine the issues involved and to prepare guidelines to assist the industry deal with the problem. The Committee comprised the following organisations:

- Association of Consulting Engineers, Australia

- Association of Australian Port and Marine Authorities
- Australian Federation of Construction Contractors
- Australian Geomechanics Society
- Australian National Committee on Large Dams
- Australian Underground Construction and Tunnelling Association
- Law Institute of Victoria
- Law Society of New South Wales
- Local Government Engineers Association
- Master Builders Federation of Australia
- National Association of Australian State Road Authorities
- National Public Works Conference (Observer)
- NSW Committee for Co-ordination of Government Geological Programs
- Standards Association of Australia
- The Institute of Arbitrators, Australia
- The Institution of Engineers, Australia

The results of the Committee's work was published by the Institution of Engineers, Australia in 1987 in a booklet entitled Guidelines for the Provision of Geotechnical Information in Construction Contracts. A brief outline of the Guidelines appears below:

Objectives Of The Guidelines

The objectives of the Guidelines are:

i. To provide bases for a realistic apportionment of responsibility and risk associated with geotechnical matters between the parties to the construction contract;

ii. To establish and define broad categories of geotechnical data for purposes of presentation in contract documents and to define the differences between them;

iii. To discuss what geotechnical data should be provided to contractors at the time of tender and in what manner the data should be qualified;

iv. To describe the possible consequences of different approaches;

v. To establish broad procedures to deal with conditions which vary significantly from those described and for the apportionment of the consequences between the contractor and the principal;

vi. To minimise the risk to the contractor by enabling as informed a decision as possible on construction methods, costs, rates of progress etc.;

vii. To minimise the risk to the principal through delays and claims from contractors for variations or latent conditions;

viii. To promote better contractual practice in relation to geotechnical conditions.

Risk Allocation

The Guidelines recommend a balanced approach to risk allocation between the parties, in the event that latent condition problems are encountered.

The Guidelines make a number of suggestions to minimise risk including:

i. Preliminary works such as stripping overburden, foundation preparation, tunnel portal construction, initial borrow area development etc. should be carried out as an initial stage of construction prior to finalising design and ahead of the main contact. This practice would enable the foundation conditions to be exposed and design solutions reached before the main contract.

ii. Use of pre-stated rates and prices for work associated with uncertain ground conditions to reduce the risks for both parties by relating payment to the conditions actually encountered.

iii. Use of a 'stepped' schedule of rates for particular types of work, so that the rate used for payment is dependant upon the quantity of the particular material encountered. This approach would allow economies or diseconomies of scale to be taken into account, thus reducing the risk to both parties.

iv. Breakdown operations into separate parts in order to reduce risk where there is uncertainty; for example, grouting could have items for set up of equipment, for hook up of lines and for water testing, as well as for drilling and grouting.

v. Schedule or rates to identify excavation in various categories of difficulty, including subdivision of rock into "soft rock" (e.g. "rippable": or "borable") and "hard rock".

Geotechnical Data

The Guidelines note that geotechnical data generally falls into categories of fact, interpretation and opinion. In order to avoid potential for misrepresentation and misinterpretation, it is important that any documents produced for information to tenderers should make a clear distinction between these categories. To this end the Guidelines include definitions of what constitutes fact, interpretation and opinion.

Presentation Of Data

The Guidelines recommend full disclosure of geotechnical data and warn that anything less than full disclosure could leave the principal and possibly the principal's consultants open to actions for negligence, negligent misstatement, negligent misrepresentation or for negligent advice or information.

The Guidelines recommend that information provided should be qualified, where appropriate, e.g. that certain information contains preliminary evaluations based on limited information. The reliance to be placed, or not placed, on different categories of information should be clearly stated. Where areas of significant uncertainty or doubt exists, these should be brought to the attention of tenderers.

A mandatory site meeting of the principal and all tenderers should be held in some circumstances.

In some circumstances, such as building work on the site of an existing building to be demolished, the existence of which precludes any investigation of ground conditions at the appropriate level, the best approach may be to pre-agree the conditions which the contractor expects to encounter and on which its tender price is based.

Most importantly, the Guidelines recommend that site information should be provided to tenderers without disclaimer or

attempts to exclude or limit liability.

It is also recommended that contracts include adequate provision to provide relief for latent ground conditions, where the conditions encountered justify remedy, through the inclusion of a latent condition clause in the contract. The Guidelines include a recommended clause.

Competence

The Guidelines recommend that the most effective way of obtaining competent contractors is to pre-select qualified tenderers for particular projects or types of work. It is recommended that, for important projects, only contractors competent to perform that type of work be considered. It is also recommended that the number of tenderers be restricted to 6 to 10.

Benefits

The benefits of action taken in accordance with the recommendations contained in the Guidelines are:

For the **contractor**:

- Tendering limited to pre-selected competent contractors.
- Full disclosure of geotechnical information, leading to a more informed bid.
- No disclaimers or exclusionary provisions.
- A fair allocation of risk.
- An adequate latent conditions clause.

For the **principal**:

- Reduced likelihood of claims due to full initial disclosure of all geotechnical information.
- Reduced scope for claims on the grounds of negligence or misrepresentation, due to clear distinctions between fact, interpretation and opinion and indications of the relative reliance to be placed on each.
- Qualification of the reports and information presented with a clear statement of the purposes for which they were obtained.
- An adequate latent condition clause.
- Lower price due to the reduced need for tenderers to load prices to cover contingent risks, through the use of scheduled rates for contingent conditions and a latent conditions clause.

From discussions with consultants, there have been instances to date where the Guidelines have been used successfully to convince clients to carry out adequate site investigations, to make full disclosure of the geotechnical information without disclaimers and to include a latent conditions clause in the contract.

14. AFFIRMATIVE ACTION AND THE CONSTRUCTION INDUSTRY

Women now make up almost 40% of the Australian workforce, nearly double the proportion of 40 years ago. This proportion is not reflected in the construction industry, largely due, no doubt, to the nature of the work involved in the actual process of construction. In this article, Larry King looks at the obligations of employers under the Affirmative Action (Equal Employment Opportunity for Women) Act 1986.

1. Introduction.

The Affirmative Action (Equal Employment Opportunity for Women) Act 1986 required companies with 1,000 or more employees at the commencement of 1987, 500 or more employees at the commencement of 1987 and 100 or more employees from 1 February 1989 to begin an Affirmative Action Program.

This paper:

- sets out a company's minimum obligations.
- suggests guidelines for a standard approach to developing and implementing an Affirmative Action Program.
- describes and analyses the penalties for non compliance.
- examines available employment and education statistics to see if a "minimum industry target" is feasible.

2. Keywords.

The key words in the Act are **opportunity** and **merit**.

The central purpose of the Act is to require large employers to promote equal opportunity for women in employment. Nothing in the Act requires an employer to take action incompatible with the principle that employment matters should be dealt with on the basis of merit.

3. Statutory Requirements.

Employers will be required to:

- develop and implement an Affirmative Action Program;
- submit two reports each year to the Affirmative Action Agency.

Section 8 of the Act describes the eight steps required to set up an AA program. Simply stated they are:

1. Issue a statement notifying employees that an AA program has been commenced.
2. Confer resposibility for the AA program on a senior manager.
3. Consult with trade unions - when developing and implementing the program.
4. Consult with employees.
5. Collect statistics - including workforce by sex and job classification.
6. Review employment policies/practices to see whether they are discriminatory or whether any patterns of lack of equality of opportunity emerge.
7. Set objectives and make forward estimates ("objective" and "forward estimate" are defined in Section 8(3)).
8. Monitor and evaluate the program.

Sections 13 and 14 describe the reports companies are required to make annually to the Affirmative Action Agency. They are:

i. a public report, providing statistics and related information on workforce by sex and job classi -fication; and an outline of the processes under taken to develop and implement the program.

ii. a confidential report, providing a detailed analy -sis of the processes undertaken to develop and implement the program.

(There is an option to combine i. and ii. as a public report.)

The preceding paragraphs simply describe the actual require-