

## **The 10 Most Common Mistakes Made when Choosing an Engineer**

### **1. *Assuming that all engineers are 'Essentially The Same', and can correctly advise you of your particular problem or issue***

In common with all professions, there are many specialist areas of engineering, with the civil & ground engineering specialty area being no exception.

As such, it is very important that you understand the differences between the various engineering disciplines and specialities, when you engage a particular engineer. In addition, it is very important to establish that the consultant you propose to engage has the requisite knowledge & experience before you engage the engineer.

### **2. *Assuming that all engineers with 10 years professional experience in the ground / geotechnical engineering field have similar knowledge***

This trap arises from the assumption that engineers working in the ground & geotechnical engineering field all have similar knowledge because they have a university degree and supposedly similar experience.

Nothing could be further from the truth because in many cases engineers working in the geotechnical field perform the same tasks repeatedly; thus, many engineers in reality have one years experience repeated 10 times, and not 10 years of varied experience.

In addition, an engineer with wide experience in site drilling, testing and logging [i.e. geotechnical work], may have virtually no experience in the assessment of the cause of damage, analysis and evaluation of appropriate stabilisation / remedial works, etc., as these matters are usually the province of a ground engineer.

### **3. *Assuming that a large consulting group, which may be international, has the expertise & resources you need to solve your problem or issue***

As currently consulting engineering work in Australia is dominated by large organisations, which may be partly or fully overseas owned, many clients assume that these organisations have the requisite knowledge and 'know-how' to deal with a particular client's problem.

However, as it is the person actually providing you with the advice that is important, it is critical that a client evaluate for themselves whether the particular individual is, or is not, suited to the task. In addition, because Australian soils & geology are very different from most overseas countries, a deep understanding of the Australian landscape is a pre-requisite to sound ground engineering advice.

SCE has also encountered many situations in which costly advice has been provided to a client by a large organisation which is largely irrelevant to the resolution of the client's particular problem, or issue. In addition, during the course of SCE's 'peer review' of the work performed by some of the large consulting groups, many defects and fundamental design errors have been disclosed.

### **4. *Being more concerned about the cost of the professional advice, rather than being primarily concerned about the total cost***

When a client is first confronted with a serious problem [e.g. house damage, landslide, rock-fall, legal issue, etc.], it is common for a client to discuss the problem with a number of persons, including engineering experts, and to then make a decision on the expert to be engaged primarily on the cost of the initial advice, or report.

In most cases, a decision based on the cost of the initial advice or report is fundamentally flawed, because a 'cost based' decision cannot take into account the differences in scope of work proposed by different engineering experts, or the differences in experience and expertise of individual engineers.

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Whilst it is always legitimate to ensure that professional advice is obtained in an efficient and cost-effective manner, the old adage 'you pay peanuts and get monkeys' is invariably true with 'cost based' decisions for professional advice.

Another important factor to consider is the 'total cost' of dealing with a particular problem or issue; this is because inappropriate cost savings in professional advice invariably translates into large cost blowouts during the construction and / or remedial work stages.

### **5. *Paying for something that you don't need because of the commercial structure of the Consultant***

As the fields of ground & geotechnical engineering are specialties not regularly encountered by, or understood by the majority of persons, clients can be 'sold' a standard geotechnical investigation package by a particular organisation, whether or not the information to be obtained during the investigation is necessary.

For example, as some 'geotechnical' consulting groups have [or are commercially associated with] site drilling and testing equipment, there is a commercial tendency for that group to recommend drilling as part of the investigation package, even when drilling is not required. In addition, companies with a soil testing laboratory are more likely to recommend a number of soil tests, whether or not the tests are needed.

As such, when considering an offer to undertake an investigation by a consultant, a matter for consideration is the overall commercial corporate structure of the consultant.

### **6. *Paying for something that you don't need because of the inexperience of the professional person advising you***

When assessing the 'scope of work', and thus the cost of a particular consulting assignment, a very important factor is the experience of the person assessing the requirements of the particular investigation, or study.

Thus, if the person is inexperienced in the appropriate methodology for investigating a landslide, then such a person is likely to recommend all sorts of site drilling, testing & laboratory evaluation, rather than firstly addressing the more important and fundamental issues of topography, geology & drainage, with any drilling and testing being of a second and lower priority.

In view of the above, it is very important that a client carefully consider the experience of the professional person advising on the scope and extent of site studies, if they are to ensure the most cost-effective way to spend the usually limited funds.

### **7. *Confusing quality & experience with money / price***

As with most things, quality products come with a higher price tag than lower quality products. In addition, engineers with greater experience, knowledge and wisdom normally command higher salaries [with resultant higher charge-out rates], than those with less experience and knowledge.

Also, as money is not a measure of worth / value, it is usually most important for the professional to know "which nut to turn", rather than performing a lot of work that leads to a minimal result.

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### **8. *Rushing into litigation before you have received objective advice as to the most likely cause of the damage or problem you have encountered***

In many instances, when a client is affected by the actions of an adjoining property owner or third-party [e.g. an earthworks contractor excavating a trench nearby], the client often firstly seeks the advice of a lawyer with a view to quickly initiating litigation against the offending party. The lawyer then commonly suggests that an appropriate 'expert report' be obtained to support the litigation.

Such an approach can often prove expensive, with the cost of the litigation and expert advice often exceeding the damage suffered. In addition, because the 'expert report' is prepared to 'support' the litigation, the report may be fundamentally flawed and challenged by other experts.

As such, it is preferable to obtain expert engineering advice 'in advance' of the institution of any formal litigation processes.

### **9. *Not appreciating that successful litigation is normally the result of the Legal Adviser and Engineering Experts working together as a "team"***

As the Australian system of law is an 'adversarial' system, it is extremely important that the various persons involved in the litigation work as a "team", with each member of the team understanding the role of the others, and all working in the interests of the client. This teamwork may also include other members of the expert's consulting firm who support the expert in a 'back office' way.

In addition, as any expert report tendered in litigation will normally be challenged by the other party, it is important that:

- a) The expert engaged by a client has appropriate experience in the technical issues, litigation processes and court rules.
- b) The expert report be subject to 'peer review' [e.g. by other members of the expert's consulting firm] prior to the expert report being presented to a court.

### **10. *Employing an Engineer or Lawyer to assist you with your problem because you think they are a 'good person', or one you have met at the golf club***

Although most clients appreciate that it is very important for their family doctor to be both independent and professional, when it comes to employing engineers to assist on a matter, some clients confuse personal friendships with professional expertise.

A common consequence of the confusion of personal relationships and professional advice is inadequate / incorrect professional advice, and a loss of the friendship when things go wrong.

As such, it is very important that the engagement of any professional person or consultant be on a purely 'professional' basis, and without personalities and friendships entering into it.