

By Steve Revay



Welcome to the initial issue of *The Revay Report*. This is the moment of truth for any new publishing venture and we hope that this copy and future ones will merit at least a quick scan on your part. The ultimate accolade, of course, would be to have them filed for future reference!

## Between Ourselves

*The aim of The Revay Report is to respond to your needs by providing information that will directly aid you in your day-to-day business operations and in future objectives.*

*The construction industry is complex - today more than ever before. It can be rewarding, but also subject to the vagaries of the marketplace - unexpected and sudden difficulties. There are a whole host of other challenges that make it vital that you be well informed and aware of changing conditions involving government and the business community.*

*Needless to say, no one publication can cover all the needs of every executive, nor are we trying to do this.*

*We are planning, simply, to bring you information and to keep you up to date in areas where we consider ourselves qualified - such as project management services or disputes resolution.*

*The Revay Report will be sent to you on a regular basis and we invite you to provide names of other people in your organization who might be interested in receiving copies. At the same time, we would like your comments or suggestions for topics of direct concern. We want to establish an open line of communications - and we need your help to do this.*

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## Study Shows Lower Productivity on Cost Plus/Non-Urban/Large Projects

The Construction Owners Association of Alberta (COAA) is comprised of a broad cross-section of owner interests who purchase construction services. Concerned about the apparent decline in construction productivity and its impact on capital budgets, the COAA recognized the need to provide a basis for measuring productivity as a prerequisite for improving it. The Association appealed to general and trade contractors for cooperation in providing actual cost data on which comparisons could be made.

Revay and Associates Limited (RAL) was commissioned to gather and analyze this data with a view to establishing productivity standards for Alberta and to report on the productivity-affecting factors which became evident in the study. A large number of interviews were conducted and data obtained on production and labour input for various items of work on a wide range of projects. Some

1,500 individual measurements were analyzed, compared to base costs to provide ratios, and coded for project location, type and size and type of contract. The assignment was directed through our Calgary office, managed by Tom Watts.

Here are the main conclusions:

1. Job conditions on different types of project (e.g. industrial, commercial, engineering, etc.) may be so variable that the comparison of respective productivities across types may be meaningless. However, measurements with given parameters of project type, location and size and type of contract are valid for comparison.
2. Jobs executed in an area where field personnel are able to live at home will enjoy a level of productivity 10%-15% higher than

on those projects where a camp is necessary.

3. Generally speaking, productivity on projects in the non-residential sectors was highest in heavy engineering and lowest in industrial. Commercial projects fell in between.
4. The larger the project, the more productivity tends to suffer, although in some cases there may be offsetting trade-offs because of technological factors. Of particular significance is the fact that many large-scale projects have been carried out under the terms of a cost reimbursable contract. Comparable tasks on firm price contracts and cost plus contracts in the study showed that the productivity on the former averaged 30%-40% higher. It is not clear, however, whether this

was due to the inherent nature of a cost-plus contract or to the conditions which led to the selection of a cost-plus contract - e.g. the scope of the project was not sufficiently crystallized before the start of construction.

5. Among the general factors influencing job-site productivity, "motivation" ranked at the top.

Accordingly, the road to improvement is undoubtedly through a greater recognition of the factors which motivate people, together with improved record keeping and monitoring.

6. Relatively few firms compared productivity for particular work items on a project-to-project or project-to-norm basis.

Many criteria must be considered in assessing the overall economics of a project - the required completion date and the cost of money to mention just a couple. However, the importance of productivity levels as a factor in construction costs deserves more than mere "motherhood" statement status.

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## Computers in Construction

"A comparison of the results of surveys of the uses made by Contractors of computers conducted by Revay and Associates Limited in 1973 and by the University of Waterloo in 1980 show that contractors are now more ready to accept computers as a management tool which could be useful in running their jobs. The most marked increase was by contractors with annual volumes in the range of \$5 million to \$20 million. In 1973, a full 56% were non-users; by 1980 only 14% were non-users. This no doubt reflects the impact of mini-computers in the

market place."

"Whether it be for main-frame, minicomputer or micro-computer usage, the greatest need today is for suitable applications software (i.e. the actual programs that generate the information and reports that contractors need). The major aspect of the problem is the lack of integrated systems. What is required are common data base systems that cut across all areas of a contractor's management functions. For example, the estimating system should be linked to the planning and scheduling

system, which in turn should be linked to the cost control system, which in turn is tied into the payroll and general accounting systems."

So stated RAL President Steve Revay in his paper to the international symposium on "Computer Aided Building Design" held in Montreal earlier this year at Concordia University's Centre for Building Studies. He was the only speaker invited to cover developments in the application of computers to on-site construction operations.



## Providing Contractors with a Co-ordinated Computerized Management Information System

Studies, both past and current, have told the construction industry that it needs to improve its planning and control practices and in turn increase productivity.

Computer technology is high on today's list of potential solutions to this problem. However, it is evident that, before the industry can fully benefit from this technology, computer systems must be available that meet the following basic criteria:

- The system should be designed by people with practical construction experience, both on-site and in head office.

- The system must do more than provide historical, accounting oriented information.
- The system must be designed on a fully integrated basis. 'Stand alone' systems within the same operation only result in confusion and inefficiency.
- The computer equipment (hardware) used must be affordable by contractors at large and not just by the major firms.
- The system vendor must be fully committed to the successful implementation of the system in the contractor's operation.

The Revay organization is involved in the development and implementation of a computerized management information system that meets these criteria and more. Its innovative features have been recognized by the award of an EDP grant by the Federal Government.

The system is called CT-4 and supports key management functions such as estimating, planning, scheduling cost control, and accounting on a fully integrated basis.

The system uses microcomputer hardware and technology which provides users with the latest in computer technology at a fraction of its former cost.

In today's complex world of construction, CT-4 is precisely the modern tool that contractors need to

improve productivity and remain competitive.

The first release of CT-4 is expected in the spring of 1982

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## Computerized Litigation Support System Available

The Revay-MSc Computerized Litigation Support System is now available for demonstrations. Large-scale litigations can involve anywhere from 10,000 to 1,000,000 documents. The system involves the microfilming and coding of such documents and

then their speedy retrieval by computer. Documents can be reviewed on a screen and, if desired, a print obtained. The system is offered as a complete service, including equipment and instruction manual.

MSc stands for Montreal Systems Consultants, a firm affiliated with Revay and Associates Limited, and also based at 4333 St. Catherine St. West, in Montreal. Dermot Wood, Eng., is president of MSc.

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**'In general, arbitration is an excellent dispute resolution process between willing parties.'**

### Pros and Cons of Arbitration

*By S.G. Revay, President, RAL*

"AR-BI-TRA-TION, *noun*, the settlement of a dispute by the decision of a judge, umpire or arbiter."

So says the dictionary and the process is receiving growing attention as a means of settling contract disputes in the construction sector. Arbitration has its strong supporters and it has its strong critics.

Obviously, arbitration cannot be both good and bad - the results depend upon the conditions, the issues and people involved and the procedures followed. These factors must be considered in assessing any list of pros and cons.

In general, arbitration is an excellent dispute resolution process between willing parties. That is, parties who are genuinely interested in finding a quick, equitable solution to their problems.

However, arbitration is a very poor medium for the resolution of fiercely disputed disagreements, or if the parties wish to rely on legal technicalities in proving their points.

One of the main attractions of the arbitration process is its relative

informality, as sanctioned by the various Arbitration Acts.

Notwithstanding opinions to the contrary, arbitration does not have to follow the rules of the courts, save and except that the parties agree to do so. Unfortunately, and primarily because of lack of prior experience, parties frequently end up following court rules very strictly. Any time that the concept of establishing procedures by private agreement is usurped by the adoption of a formal legalistic approach, the justification of choosing arbitration must be questioned.

So much for some general conclusions. In order to put arbitration into its proper perspective, we must address some basic questions. The most fundamental one of all is: "Are construction contract disputes avoidable?"

In an ideal world - yes! In real life - often no. Accordingly, most construction contract general conditions contain several clauses describing the machinery to be used in the event of disputes. Some contracts give ultimate power to the engineer/architect, whose decision is final; others provide for appeal above

this level. And still others provide for arbitration.

Regardless of the language of the contract, it must be obvious that the parties have anticipated the possibility of disputes arising out of the contract and have provided for their resolution.

The next question: "Why is the industry now seeking to find new, practical machinery to resolve many of the more serious disputes?" (By "practical" it is meant to imply "quick, economical and equitable".)

There are many factors involved. Among them are that many construction projects are relatively larger and more complex than in the past. Competition is often much keener and bids contain little if any leeway. Inflation has altered normal price patterns. Owners and contractors alike may face serious cash flow or other financial problems. In short, conditions are more conducive to contract disputes.

Construction contracts traditionally place the design professionals in a quasi-judicial position with a view to resolving disputes as they arise at the job level. Conditions often exist, however, which tend to curtail the

ability of the design professional to act in a truly independent manner, especially when a large sum of money is at stake.

For instance, the "Engineer" in many cases is in fact an employee of the owner. In any event, the design professional is paid by the owner and this may cause the contractor to feel that this influences the designer's decisions, whether or not this is indeed the case.

Moreover, it is quite possible that a design professional, to be fair to the contractor, would have to admit a shortcoming in his own work - thereby opening himself up to the possibility of increased premiums in his professional liability insurance.

To sum up, no extra-contractual dispute resolution machinery is needed where the design professionals are both allowed and willing to discharge their obligations of impartiality. Similarly, where a dispute does persist, it is most desirable that it be resolved through negotiation to both parties' satisfaction.

If this does not prove to be possible, there can be recourse to the courts, but litigation proceedings may well be prolonged and costly. Accordingly, arbitration is looked too increasingly as an alternative procedure.

"Mediation" is another option. The procedures are more flexible in that they are not governed by the Arbitration Act. Mediation recommendations are normally non-binding, but can be "binding" if both parties agree in advance to accept them. Arbitration is not permitted on Government of Canada construction contracts, but non-binding mediation procedures may be followed upon the mutual agreement of the disputing parties.

It is important to note that the various Arbitration Acts regulate some features of the process only, such as the method of nomination of the arbitrators, the extent of time within which arbitration should be completed, the ways and means of arranging for discovery and the

enforceability of the award. However, they do not set all of the procedures to be followed.

In fact, the Arbitration Acts leave virtually unlimited freedom to the parties to establish their own rules of procedure. This freedom, however, is frequently abused by a party who is so inclined.

Even more importantly, the law to be applied is left to the choice of the parties, save and except the procedural limitations made obligatory by the various Arbitration Acts.

For instance, the parties may agree that Quebec law should apply to an arbitration held in Ontario. Then again, the parties may agree (and often so do) that the arbitrator should follow natural justice and not the rigid terms of the contract.

The selection of the arbitrator is of vital importance to the success or otherwise of the arbitration. First of all, he should be independent - i.e. he should have no financial interest in the outcome of the dispute and should not be employed by either of the parties.

In the case of a three-member Arbitration Board, the nominee of a party is expected to be sympathetic to his nominator but he should not act as his advocate.

In fact, it is better if the parties refrain from ex-parte discussions with their nominee or, in any case, there should be an understanding between the parties on the limit of direct communications allowable between a party and his nominee.

These restrictions should limit the source of information made available to an arbitrator to written material (also furnished to the other side) or evidence and/or exhibits tendered through the formal process.

No party should attempt to influence his nominee through ex-parte communication. However, by knowing the background of the nominee, he should be able to prepare and present his case in a

manner which ought to get the best response from him.

This advantage is obviously not available with a single arbitrator. On the other hand, the latter is less expensive and can arrange the schedule of hearings with greater ease and continuity. Against this, a single arbitrator could be inclined to give a yes-or-no award, whereas a three-member board would tend to compromise.

If the dispute centres around a technical issue, the selection of a technically trained arbitrator may be of advantage. An out-right expert, however, might not be a good choice because he may tend to pre-judge the issue without listening to the evidence.

Arbitration Boards are often made up of a lawyer as chairman and two technically-trained members. This is usually a good choice if the parties are otherwise represented by a lawyer at the hearings. A technically oriented panel may be more practical where the parties decide to present their own cases.

It is very questionable whether the use of legal counsel in a purely technical dispute is advantageous or justified.

Some lawyers, as a result of their training, will not only tend to emphasize legal issues but may also adopt an aggressive court-room style of cross-examination designed to destroy the credibility of witnesses presented by the other side. A simple arbitration can thereby be transformed into a bitter battle.

On the other hand, to go into arbitration on a complex dispute without legal counsel who is experienced in arbitration work would be foolhardy indeed.

In summary, arbitration enjoys all of the necessary prerequisites for the speedy resolution of many contract disputes. However, the nature of the dispute, the procedures followed and the people involved may singly or in combination make arbitration a sad

experience in terms of results, time and expense.

In general, commercial or technical questions are better dealt with in arbitration, providing that both parties are willing to participate and genuinely wish to arrive at a settlement.

Purely legal questions should generally be resolved in the appropriate court of law. Arbitrators can, however, and often do resolve legal disputes. In fact, in the case of international disputes, arbitrations (whether ICC or UN) are the only practical way to proceed.

*Note: This is an abstract from a talk given at an Arbitration Seminar sponsored by the Alberta Construction Association. RAL is currently acting in four arbitration cases in Canada, two in the United States and one in Europe.*

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## Is Value Management for You?

"Value Management is not a fad or buzz-word that is here today and gone tomorrow, but is a well-established and proven effective procedure.

"VM methodology pays off the most in the design phase, because that is where it can offer the greatest single savings. On a life cycle cost basis the largest cost factor is usually financing and the smallest is design. Yet the decisions made by the designer directly influence perhaps half of the total life cycle cost of a project.

"Any competent and experienced designer will achieve more economical designs by "doing what comes naturally." Value Management, however, is a systematic approach that is not "doing what comes naturally" - that is, unless they deliberately search out an unnecessary high cost item, determine its basic function, decide what the function is worth (as opposed to what it costs), brainstorm the problem to list and explore every conceivable alternative method of performing the function, and then decide which will perform the required function at least cost."

"That is not a normal service provided by most designers and that is why owners are prepared to pay an extra fee for its provision. And why wouldn't they, when the average payback expected is at least ten times the extra cost?"

*- Excerpt from "Value Management - an integral part of the Project Delivery System", a paper given at the 1981 Annual Assembly of the Royal Architectural Institute of Canada by RAL Ottawa Bureau Chief Don Chutter*

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## Claim Count

RAL's pre-eminent position as Construction Claims Consultants in Canada is reflected by the present workload of either preparing for contractors or reviewing for owners and others a total of 44 claims having a face value of \$192.2 million. Of these, 39 are related to Canadian projects distributed over eight

provinces. Six of the claims are before the courts, four are being arbitrated (not counting other arbitrations in which RAL personnel are acting as arbitrators) and 34 are in various stages of preparation or negotiation.

In total, RAL has been involved in

approximately 600 claims since the firm was established in 1970. Those claims which were prepared by RAL also often include on-site scheduling and cost control. Moreover, some of the mandates called for progress and cost monitoring for virtually the entire project duration.

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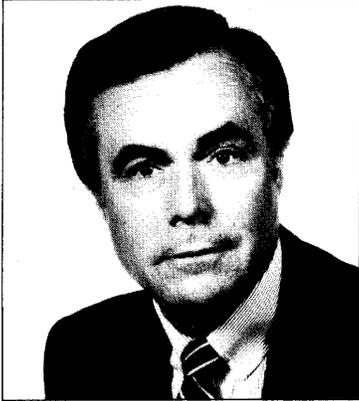
## Heads PM1

RAL Vice-President Regula Brunies became president-elect of the Project Management Institute at its annual

meeting in Boston in September. She is the second Canadian and the first woman to head the Institute, an

international body "dedicated to advancing the state-of-the-art in project management."

## RAL PROFILE



*Baker Daigle, Eng.*

RAL Vice-President Baker Daigle has brought to RAL a wealth of construction experience gained in a

variety of senior positions on behalf of contractors and owners alike.

Baker is heading up RAL's activities in providing project management services to design consultants, owners, contractors and sureties. These include auditing and monitoring services, estimates and budgets, cost and progress controls, scheduling and planning - as well as overall management. He is also keenly involved in the development of RAL's CT-4 - a computerized management information system.

Prior to joining the Revay group in late 1980 he had a five-year stint as Vice-President of Domtar Inc., responsible for engineering, purchasing and transportation. These duties included the provision of project management services for construction projects averaging \$100

million a year. And before that he was contracted by the Ministry of Transport to act as Manager of Construction and Design for the final year of the \$350 million Mirabel airport project.

Industry positions have included those of Vice-President and General Manager of Charles Duranceau Ltd., general contractors and road-builders; as President of Formco Co. Ltd., formwork and concrete contractors; and various senior posts with Miron Company Ltd., a construction and building materials enterprise.

He graduated from Nova Scotia Technical College in civil engineering in 1947 and joined the Foundation Company first as a field engineer and then served as a project engineer on various pulp mill projects.

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