The Revay Report

www.revay.com

VOL. 16 No. 2, April 1997

by ***Stephen G. Revay***

Last June, *at the annual meeting of Construction Specifications Canada, I presented a paper entitled Design1Build: Panacea or Disaster where I concluded that "as long as clients insist on maintaining all of the authority and freedom for ordering changes they have under the conventional method of contracting, it is and will remain a disaster. On the other hand, design/build could be the solution to all that ails the construction industry today. It is definitely a more natural way of buying construction, but only if the industry adapts to the shifting of responsibilities and authority. "*

The primary thrust of this shifting of responsibilities and authority must be in respect of the manner changes in the design (including those necessitated by changed soil conditions) are handled. During the last ten years, we were involved in nearly as many disputes arising out of design/build contracts as all other types combined, with the changes in design taking the centre stage in almost all of them.
The lead article of this issue deals with these problems.

Additionally, this issue records a watershed in the operation of the Toronto office. Mark Doyle, who started and built up the office turned the reins over to Bill Gillan on the twenty-eighth of April I would like to take this opportunity to recognize Mark's contribution to the growth of our company and am pleased to report that Mark continues with us, but in a more exalted capacity, as a senior statesman. Bill Gillan brings to us over twenty years of experience in project management, an area where we plan to be more active in the future.

CHANGES IN DESIGN/BUILD CONTRACTS

DEFINITION

First came the master builder then, in the late nineteenth century, in the early days of railway construction in England, the design-bid-construct type of project delivery system was introduced. This system is still predominant all over the world. The master builder has not completely disappeared, although over the years he has changed his name to turnkey contractor. A variation of the turnkey method of buying construction services is the design-and-build (or design/build). The turnkey method is also known as the package deal. A further variation of basically the same concept is the engineer-procure-construct (EPC) project delivery system, and more recently one has been hearing about performance-based contracting.

These systems have their own peculiarities. Some are better known in different parts of the world than others. The owner's involvement in the design/build process, for instance, may be much less so than in the EPC type of proceeding.

Even the method of compensation may vary, nevertheless, all of these have a common characteristic that sets them apart from the conventional or design bid-construct process which is that, in these methods of contracting, the design and construction are performed by a single entity, at least as far as the client (i.e. owner) is concerned. This is in contrast to the conventional process where the design responsibility rests with the owner.

The name given to the specific project delivery system may be important to the participant but not necessarily to the courts where the design-and-build definition is more readily understood than any of the other names. Courts are much more interested in the owner's actual involvement in the design process than in the moniker of the parties' relationship.

The usual phases of a design/build project delivery system are as follows:

1. The owner decides on a project and develops (either using in-house resources or outside consultants) the conceptual design and the budget, as well as selects the site where the project may be realized.
2. The owner (and/or its consultant) prepares the Request for Proposals (RFP) including detailed performance requirements and quality specifications.
3. The owner preselects qualified contractors with proven capability to undertake the project.

4. Firm bids are received from the prequalified contractors and the contract is awarded subsequent to the required clarification of the proposal.
5. The contractor (and/or its consultant) prepares the design, construction specifications and approved for construction drawings and constructs the facility.
6. The owner carries out the type of inspection and testing it deems desirable and eventually takes the facility over.

What is not defined above is the owner's involvement with the actual design process (i.e. Phase 5), even though the extent of this involvement may be the factor which could determine the success of the project.

WHO IS RESPONSIBLE FOR THE DESIGN?

The most frequently heard argument against the design/build method of project delivery is that it precludes proper control by the owner with respect to long term life, quality and simplicity of maintenance. Additionally, there is a real risk, according to some, that the competition among the tenderers will result in "under-design" which may not be detectable by the owner or the owner's professional advisors, unless, of course, a really detailed check of the design and the specifications is attempted, in which case the promised savings by way of reduced design fees are likely to prove illusory.

The owner could, of course, prepare very detailed design and specifications for the UP, but then the real advantage of the design/build method resulting from the specific expertise of the prequalified bidders may be lost. More importantly, under the above scenario the owner could conceivably retain the ultimate (e.g. legal) responsibility for the fitness of the facility for its intended purpose.

The practical answer to this predicament was thought to have been found in the owner's insistence on retaining a close control of the design development by the contractor, however, that insistence turned out to be the hotbed of all disputes.

It is impossible to talk about standard forms of design/build contracts in the same way as those that are available for conventional contracting, but there are a few recognized publications, such as the so-called Orange Book by FIDIC (Federation Internationale des Ingenieurs-Conseils).

Paragraph 4.1 of this Contract reads, in part, as follows:

"The Works as completed by the Contractor shall be wholly in accor*dance with* the Contract and fit for the purposes for *which they* are *intended, as* defined in the *Con*tract"

Paragraph 5.2 reads, in part, as follows:

"Each of the Construction Documents shall, *when considered* ready for use, be *submitted to the* Employer's Representative for pre*construction review*. In *this Sub* Clause, "review period" means the period *required by the Employer's* Representative, *which shall* not exceed 21 days ... *If* the Employer's Representative, *within such* review period, notifies the Contractor that *such Construction Document fails* (to the extent stated) to comply with the Employer's Requirements, it shall be rectified, resubmitted *and* reviewed in *accordance with* this Sub-Clause, at the Contractor's cost..

(a) *construction shall* not commence *prior* to *the expiry of the review periods* for *the Construction Documents which* are relevant to *the design and construction of such part;..*

If the Employer's Representative instructs that further Construction *Documents are* necessary for carrying out *the Works, the* Contractor shall upon *receiving the Employer's* Representative's *instructions pre*pare such *Construction Docu*ments."

The Canadian Construction Association has prepared (although not yet published) a similar contract (Standard Construction Document CCA14). Article GC30 of this document reads, in part, as follows:

"3.2.2 The Contractor shall submit the *Construction Documents* to the Owner to review in orderly sequence and sufficiently in *advance so* as to cause *no* delay *in* the Work. *Upon* request *of* the *Owner* or *the Contractor* they jointly shall prepare a schedule *of* the dates for *submission and* return *of Construction Docu*ments.

3.2.3 The Owner shall review the *Construction Documents in accordance with* the sched*ule agreed upon, or in* the absence *of* an agreed *sched*ule with reasonable promptness. The Owner's review is for conformity to the *intent of* the Contract *Documents. The* Owner's review shall not relieve the Contractor *of responsibility for* errors or *omissions in* the Construction *Documents or* for meeting all requirements *of* the Contract *Documents unless* the Owner expressly notes the acceptance *of* a *deviation* on the *Construction Docu*ments. Any agreed *amendment to* the Owner's Statement *of* Requirements shall be recorded in a *Change* Order *signed by* the Owner *and the* Contractor."

In a private contract, the corresponding clauses read, in part, as follows:

1.1 The Contractor shall provide engineering, procurement, *construction, project* management and construction management.

2.2 The Contractor shall, in *accordance with* this Con*tract, furnish and pay for all material, labour tools, equipment and transportation required to perform the Work and shall perform the Work in a good and workmanlike manner so that the Facility will start up and operate as designed.*

4. 1(b) The Contractor shall perform the Work so that it meets the requirements of all applicable design, construction and other standards in accordance with the Project Design Specifications and with the requirements of professional engineering standards,....

(l) Cooperate with Independent Engineer in reviewing design, materials and conducting inspections, performance tests and handling other matters relating to the Work."

As can be seen in these three examples, which are typical of all design/build contracts in their stipulations, the contractor must submit its design and specifications (i.e. Construction Documents) for review by the owner's representative, and no construction may start prior to such review (unless the time provided for the review has expired). Of course, this review process can, and frequently will, turn into disagreement with respect to the contractor's compliance with the owner's intentions (e.g. Project Design Specifications). These disagreements can be and often are acrimonious, time consuming and usually expensive as far as the contractor is concerned. In reality, this review is simply a disguised design approval process, pursuant to which the owners usually get their wish without relieving the contractors of their ultimate responsibility for the fitness of the facility, and often without paying for the enhanced scope.

WHY NOT REQUEST A CHANGE ORDER?

All of the above referenced contracts, and in fact most design/build contracts contain a changes clause, according to which the contract price may be adjusted if the parties agree to an amendment to the owner's Statement of Requirements (e.g. Project Design Specifications). These clauses also stipulate that the contractor may not perform such a change in the work (i.e. in the owner's Statement of Requirements) without a written change order signed by both parties.

However, it is clear from these excerpts that there is a fundamental difference between a genuine variation in the Statement of Requirements, which is to be paid for by the owner, and a change in the design solution proposed by the contractor, which is at the expense and time of the contractor, even when the change resulted from the owner's request.

The problem, unfortunately, is much more severe; namely the argument usually centres on the unwritten preferences of the owner and seldom on precisely written requirements. This brings us back to the initial question: is it more beneficial to the owner if the Statement of Requirements is vague enough to allow the bidders to cash in on their expertise and ingenuity or would the owner's interest be better served if the requirements were set out in great detail and with precision so as to preclude eventual misunderstandings?

The market reality is that contractors, when preparing a response to an RFP seldom spend (or could spend) the time and money to prepare a complete design and usually base their estimate on experience gained on similar projects. Unfortunately, those prior projects might have been built for different owners with different requirements, where as on the project in question they must meet the unwritten preferences of the instant owner. No wonder that losses on design/build contracts can, at times, be very significant.

After all, the contractor may be required to build to the owner's (albeit unwritten) specifications and is being compensated pursuant to a tender price based on its own expertise and perhaps unrelated experience.

CHANGES IN SUB-SURFACE CONDITIONS

Perhaps an even greater risk which a contractor could be facing on a design/build project is the potential uncertainty of the sub-surface conditions. Although both the FIDIC contract (Paragraph 4.11) and the CCA Document #14 (Paragraph GC 6.4) contain provisions for the adjustment in the price and the duration of the contract, both of these clauses are open to widely differing interpretations.

In the FIDIC version (Paragraph 4.11) the prerequisite for the adjustment is that the actually encountered sub-surface conditions are of a nature which could not have been foreseen by an experienced contractor. The problem is, of course, that the definition of an experienced contractor is just as nebulous as that of a reasonable man, which remains the unresolved mystery for many legal authorities. More importantly, however, Paragraph 4.9 places the burden of soil investigation on the shoulders of the contractor. The owner is required simply to turn over to the contractor all available information without specifying the extent of the investigation the owner should undertake.

For the contractor to be able to cross the threshold of what an experienced contractor should or should not foresee, it must satisfy the prerequisite laid down by Paragraph 4.9 according to which it has to obtain all necessary information pertaining to risks, contingencies and all other circumstances which might influence or affect the tender.

As the result of these requirements, is there really any use for Paragraph 4.11?

Although the CCA document deals with the problem differently by adopting the two-pronged approach of US Federal Government contracts, the CCA fails to answer the fundamental question: what happens if the owner carried out only little or absolutely no sub-surface investigation? To be able to say that the actually encountered sub-surface or otherwise concealed physical conditions differ materially from something, that something had to have been known. And if that something did not exist, then there can be no change.

The contract from which this clause was taken, is for a design-bid-construct arrangement which assumes suitable sub-surface investigations on the part of the owner if for no other reason than to be able to complete the design. This reason does not exist in the case of a design/build arrangement.

The second prong is even more nebulous. For it to have proper meaning the design first would have had to be completed because the character of the construction activity, which is the deciding factor in the applicability of this provision, may not be determinable prior to finalizing the design. What is the solution?

CONCLUSION

First of all, design/build contracts are not for novices. Second, contractors ought to ensure that they understand the owner's requirements (whether written or simply intended) and clearly qualify the basis of their estimate in their proposal. This would go a long way towards clarifying the contractors' position with regard to design responsibilities. It would also make changes, particularly those caused by sub-surface conditions, easier to monitor. That is, if the contractor's initial expectations are clear, then any changes to those expectations will be obvious.

It is contended that even those contracts, such as the ones discussed above, which are prepared specifically for design/build arrangements, may not distribute responsibilities and authorities in such a manner as to give the relationship proper business efficacy. More importantly, even the most equitable language may not always be sufficient, because there will always be issues left to the fairness and reasonableness of the parties. This applies to both parties and not only to the owner.

The answer to these issues probably lies in Clause 20 of the FIDIC Orange Book, and more particularly in Paragraph 20.3 which provides for a Dispute Adjudication Board, and Paragraph 20.4 which sets out the procedure for obtaining the decision of the Board. This decision, which is the decision of experts and not an award by an arbitration board, is nevertheless final and binding on the parties, unless a party notifies the other party of its dissatisfaction with such a decision within twenty-eight days after the receipt of the decision. Notwithstanding such a disagreement, the parties shall give effect forthwith to every decision of the Board, understanding that such a disputed decision may eventually be altered either through an amicable settlement or arbitration.

The experience with adjudication boards in the United Kingdom, where this method of dispute resolution has been used for some time now, is that parties to contracts with such provisions tend to act fairly and expeditiously with a view to avoiding the need to go before the Board.

Finally, it may not be a bad idea if the construction industry investigates the way the aviation world successfully operates, wherein airlines buy airplanes, fairly complex and expensive ones, pursuant to the design/build method of contracting. Or should it be called a **package deal?**

By S.G. Revay

BILL GILLAN, P ENG. JOINS RAL

Bill Gillan joined RAL, Toronto on April 28, 1997 as General Manager for the Ontario Region. He brings with him 27 years of experience in the Canadian engineering and construction industry, including over 20 years in the planning, design, construction and operation of airport facilities. Bill is a civil engineering graduate from the University of Waterloo and over the years gained extensive experience in managing major projects, capital programs, and multi-discriplined professional and technical staff. With a combination of public and private sector experience, he has been responsible for the provision of engineering services to various government departments, business operations, and the negotiation of contracts and claims. His extensive managerial experience and his knowledge of the industry in general will add greatly to RAL's capacity to serve clients in the Ontario Region.

The Revay Report is published by Revay and Associates Ltd., a national firm of Construction Managers and Claims Consultants. The above article has been electronically modified from its original publication. Contents may be reproduced; with a credit as to source appreciated. Your comments and suggestions for future articles are most welcome. If you have any questions or would like to obtain other Revay Reports, please feel free to contact any one of the following Revay offices:

CONTACT INFORMATION

Please visit **www.revay.com** for current office locations.
If you would like to subscribe for **The Revay Report**, click here.