

Introduction

Claims on construction projects involve the major protagonists, owners, contractors and design professionals and it is important to prepare for the uncertainty of construction project risks. While each project risk may have uncertainty associated with it regarding the degree that a particular risk will manifest itself on a given project, the identification of major project risk factors is a relatively advanced science. However, the essence of the ability to reduce the frequency and severity of claims is the identification of these construction project risk factors and dealing with them and/or providing for them in the construction or design contracts.

The major project risks that we are all too familiar with include the following:

- Cost escalations
- Time for completion and construction delays
- Changes in Project scope
- Geotechnical and site-related problems
- Weather and force majeure conditions
- Negligence in both design and construction

Contracts provide a rare opportunity between contracting parties to foresee problems and to draft contractual provisions to take care of those problems, or at least to diminish the effect of those problems on the project when and if they occur.

This brings us to the importance of contracts. Contracts are the basis of most of our liability in today's construction industry. Contractual claims represent 90% of all claims that occur in the industry. Third party tort claims make up the remainder. Since contracts are so important, it is clear that more time should be spent discerning which contract (delivery system) is likely to provide the best option for the parties to a particular relationship.

The power of a contract for any legal purpose is enormous. Parties can limit their liability both in terms of time and quantum, and the parties can foresee problems and provide contractual formulae to deal with those problems.

This paper will deal with various contracting strategies, risk allocation and project delivery alternatives which can make a significant difference in mitigating the effect of the risk factors that exist on every construction project.

Tailoring Your Contract to Your Project

It is important to tailor your contract to your project, rather than vice-versa. It is acceptable to use standard forms, as long as one does not become a slave to standard form contracts. There is no single standard form contract that can apply to every permutation and combination of situations that might arise on a construction project. It is important to understand the particularities and requirements of a particular project and the participants to that project so that you can tailor your contract to your project in a manner that will serve the best purposes of all of the contracting parties. Problems with contracts are endemic to the construction industry and as indicated above, represent the source of most of the claims that occur on a day-to-day basis.

This brings up the seven "I"s of contract that graphically illustrate most of the problems associated with construction contracts. These include the following:

1. Inappropriate contracts
2. Incomplete contracts
3. Incomprehensible contracts
4. Incompatible contracts
5. Inequitable contracts
6. Incommunicado contracts
7. Incredible contracts

In order to assess the appropriate contractual agreement to employ on a particular construction project, it is first necessary to undertake a complete risk assessment. The foreseeing of risk and project-related factors affecting the contracting parties is key to developing a contractual arrangement that will work to the benefit of the project and its participants. Before considering a particular project delivery alternative, the parties should undergo a thorough assessment and evaluation process that should include the following:

1. Assessing and evaluating the particularities and needs of the various project participants;
2. Assessing and evaluating the individual peculiarities and sensitivities of each project;
3. Assessing and evaluating the role to be played by each of the project participants on the project and how they will interact with one another.

Deciding how best to allocate project risk amongst project participants is a critical exercise. In particular contractual situations, a number of factors should be reviewed, including the ability of the parties to bear risk. So generally:

Risk Should Be Born By the Party Best Able to Handle It

The major sources of disputes on construction projects including the following:

1. Incomplete scope definition.
2. Inappropriate contract type.
3. Poor communications.
4. Uncertainty and unrealistic expectations.

Compatibility of Interests

The nature of the beast of construction being what it is, and as an indication of why construction disputes will likely be with us forever, no matter how sophisticated we become, one need only look at the volatile construction process. When the parties' objectives and interests are not compatible, their interpretation of contract documents, terms and conditions can diverge, leading to conflict.

The conflict-prone nature of construction projects is primarily based upon the incompatibility of the parties' initial interests and objectives. Incompatible project objectives are responsible for frequent disagreements on how to approach and complete a project. For example, on most construction projects, the owner wishes to obtain maximum quality, functionality, aesthetics and capacity at minimum cost. On the other hand, the contractor seeks to achieve financial

goals that are advanced by expending the minimum resources required to meet a minimum scope of work.

Each construction project is unique, and requires a detailed analysis, prior to entering into a particular project delivery method. The parties on each project must assess specific project characteristics to develop a joint creative and effective approach to dealing with and resolving conflicts before they lead to disputes.

The structure of a construction project in terms of which project delivery method is employed, and the manner in which the parties relate to one another, can reduce or create conflict amongst multiple project participants. As an example, reviewing the traditional relationships on a design/bid/build delivery system, illustrates a situation where the design professional and the contractor have only a communication relationship with one another, but their roles on the project are defined in their separate contracts with the owner. Accordingly, it is important to ensure that both the design contract and the construction contract are compatible with one another, notwithstanding the fact that they represent entirely different relationships with the owner.

Because the owner and the contractor are expecting the consultant to provide certain contract administration functions during the course of the construction project, and as envisioned in the construction contract, it is important that the consultant's own contractual mandate with the client give him the power to perform those functions.

Using Contracts to Achieve Dispute Prevention

Employing contracts to achieve dispute prevention requires us to become involved in various dispute prevention techniques. These include the following:

1. Equitable risk sharing
2. Innovative project award and delivery systems, incentive programs, constructability analysis and cost and schedule controls

The costs of implementing these techniques are often viewed by owners as additional costs. However, the benefits that owners ultimately obtain far exceed the costs.

Key questions that arise on every project that should be addressed by the project participants include the following:

1. Is this the appropriate project delivery system?
2. With many project participants, how do you keep misunderstandings to a minimum?
3. How should project risks be allocated?

As a means of promoting the equitable distribution of construction project risks, the following contract ideas in this and the following pages are being put forward. Some of these ideas may seem to be heresy to some, depending upon whose ox is being gored. The writer does not suggest that these ideas represent a panacea for the construction industry. They are only put forward for thought and quiet consideration.

Guiding Principles of Risk Allocation: 1, 2 & 3

The general guiding principles of risk allocation should be that:

- **Successful risk allocation is based on having fair project contracts that are understood by everyone**
- **The different parties involved should seek a multi-beneficial distribution of risk**

1. Economic Price Adjustment

This allows for controlled price escalation during the life of a project. Fixed price contracts are the most prone to claims. This is particularly the case for complex design projects that have a construction duration in excess of three years.

In this context, contracts would set a limit on the price escalation to be carried by the contractor, leaving anything above that amount to the owner. This way, if costs increase significantly during the life of the project, the contract contains a formula and the conditions for compensating the contractor, potentially eliminating or reducing the need for claims.

2. Innovative project award and delivery mechanism

A new bidding method for earthwork and tunneling jobs is suggested. This involves a "Negotiated Cooperative Process". This bidding/selection system divides the contract award into three steps as follows:

- (a) Selection of contractors.** The owner and the consultant qualify interested contractors.
- (b) Joint decisions.** Selected contractors meet with the owner and the consultant to jointly decide on the best type of equipment to be employed on the project. This is important in pricing earthwork and tunneling jobs. In addition, other possible issues critical to the execution of the project are also discussed, including geotechnical reports that are reviewed and jointly interpreted.
- (c) Awarding the contract.** Each contractor presents a bid based upon the criteria agreed on in the previous steps of the process. The owner then awards the contract.

The benefit to the three-step bidding system described above is that it provides a more balanced distribution of project risk, since some of the equipment and other uncertainties are reduced. The joint decision aspect allows for significant savings during submittals and start-up for all parties. It limits problems associated with equipment, productivity and schedule sequence during construction.

3. Procurement, Engineering and Construction Process

This approach is a response to the increasing role major suppliers of equipment and materials are playing in the construction process. In this process, we utilize the expertise and knowledge of key suppliers in all phases of the project life cycle by developing an advance procurement strategy, and by reaching a full commercial agreement with suppliers of strategic procurement items and/or systems prior to the principal engineering activities.

That is, critical pieces of equipment and materials are negotiated and procured before the engineering takes place, based upon conceptual designs and the owner's detailed performance

requirements. With the suppliers on board, the engineering design process incorporates their input, special requirements and experience into the design.

The benefits from such a process include improved quality of detailed design; improved system and facility performance; more equitable allocation of risk; improved use of supplier expertise; reduction or elimination of redundant work; and reduced need for owners and contractors to maintain areas of expertise that are more cost and time-effectively maintained and delivered by suppliers.

Guiding Principles of Risk Allocation: 4

4. Bridging the Design/Build Gap

The use of the design/build delivery system has grown significantly in recent years, both in private and public sector projects. The design/build process is characterized by a single source of project responsibility by an entity that is responsible for both the design and construction component of the project. There is also usually a single point of communication between the owner and the design builder.

The design/build process reduces the potential for argument regarding the source of construction problems being either design or construction, as a single entity is responsible for both. The design/build delivery system is usually employed to procure design/build contractors with particular areas of expertise.

Some of the problems associated with design/build project delivery include the fact that the owner loses control over the design and a "gap" is generated between the owner's objectives and the design process run by the design/builder. In addition, the design portion of the design/build firm participation is often based on price, rather than on superior design qualifications and expertise.

In the design/build process, there is less competition in the selection and award phases as the owner is often required to compare "apples and oranges" in order to choose a contractor, since differing proposals often differ in their interpretation of what the significant project design and/or performance parameters are. The process often becomes a competition in under design.

In addition, the final design/build product is often a mixture of owner/contractor objectives and interpretations that may fail to meet the original project criteria. Lastly, the owner is often left to choose from several completely different proposals, none of which is 100% satisfactory.

In order to correct these problems indigenous to the design/build process, the use of an owner's consultant is proposed to bridge the gap between the owner and the design process, without losing the advantages of the design/build delivery system.

The benefits to be derived from having a bridging consultant, include the fact that the owner retains control of the portions of the design that are usually of more importance to him, and usually includes the conceptual and schematic design phases. Through his own consultant, the owner maintains direct communication with the design process. The bridging consultant can be selected by the owner taking the consultant's qualifications into account.

The conceptual and schematic designs benefit as the goals and objectives of the owner will be properly translated. In other words, the existence of a conceptual design which is more compatible with the owner's objectives will result in proposals from design/build contractors that are easier to compare and select, taking price, design, materials, technical solutions and future operating costs into consideration.

Guiding Principles of Risk Allocation: 5 & 6

5. Incentive Programs

In the writer's previous academic life, he was involved in a Masters Program in Psychology. In advancing his studies, he noted the effect of positive incentives versus negative reinforcement on test rats. In dealing with people, many of the same positive and negative reinforcement techniques can be used to achieve a desired result. In the writer's opinion, the positive incentives in dealing with rats and in dealing with parties to the construction process, are to be preferred and are more likely to achieve the result that both the owner and the contractor would prefer to see.

Performance incentive programs tend to strengthen the project team members' commitment to speed the project towards completion. Incentive programs assist in aligning the contractor's motivation and performance with the owner's objectives. In order to make such an incentive system work, the owner must devise attainable and challenging goals for the construction team.

The owner must continually evaluate the performance of the contractor against a set of objective goals to ascertain if the contractor has earned the incentive, and also whether the overall project goals will be achieved based upon progress made up to that point.

In order to perform this monitoring or evaluation process, it will be necessary for the contractor and the project consultant to initiate and institute appropriate construction scheduling and monitoring techniques that will make it possible to assess the progress of the work daily, weekly, monthly, and overall. In order to do this, a full and detailed CPM schedule will often be employed.

Incentives in construction contracts usually consist of performance bonuses based upon achievement of milestone dates, as well as contractors sharing in proportion to any savings based upon stipulated cost goals set out within the contract.

6. Constructability Analysis

Constructability analysis is often referred to as "value engineering". This is a way of reducing disagreements and disputes based upon contract ambiguities. This analysis is performed during the planning, design and procurement phases, and can mitigate problems and claims during construction. Analysis is often performed by a contractor's representative who liaises with the project consultant, or by an independent construction expert consultant engaged by the owner to interact with the project consultant.

This process can identify errors, omissions and impractical design details that, if later uncovered by the contractor or supplier, would result in additional costs and delays to the project.

Guiding Principles of Risk Allocation: 7, 8 & 9

7. Cost and Schedule Controls

The control of costs and schedule remains one of the most difficult goals to accomplish on any construction project. One technique is the requirement that contractors report (with their monthly invoices) any claims regarding the performance of the work in connection with cost and schedule changes during that monthly period.

Every month, before payment is made by the owner, the consultant completes a report based upon the work performed during that month. That report becomes the monthly progress certificate, and is given to the contractor for review and approval. If the contractor does not report a claim that has become apparent during that period, it loses its right to make that claim in the future. In every monthly report, the contractor must report new claims as well as any outstanding ones from previous months. This forces the parties to acknowledge the existence of any outstanding issues every pay period and requires them to address the matter promptly.

8. As-Built Schedules

Owners may require the contractor to submit an as-built schedule every month before the Consultant issues his Certificate for Payment as well as before releasing the final payment on the project. The as-built schedule will become the basis for review of any after-completion claims.

By submitting a schedule that reflects the actual construction sequence and total duration, this will discourage the submission, at a later date, of delay claims that were not previously shown.

The as-built schedule can be required by the owner to be submitted monthly during the course of the work since the schedule itself is a summary of all of the construction activities and their duration throughout the project.

9. Forward-Price Change Orders

Impact or indirect costs, such as home office overhead, field staffing or overtime work, represent change order work beyond straight hard costs, such as labor, equipment and materials.

To reduce disputes, owners and contractors can agree in their contract on the guidelines and methods for determining impact costs. A series of impact factors and formulae can be developed for issues like the timing of changes, number of trades involved, effect on the schedule, effect on office and field staffing and the cumulative nature of disruptions.

Subsequently, when change orders are priced and negotiated, owners and contractors will be in a position to incorporate both hard costs and impact costs, and they will be in a position to more easily settle on a final adjustment to the contract value.

Guiding Principles of Risk Allocation: 10, 11 & 12

10. Impact Claim Deadlines on Change Order Cost Quotations

When contractors price change orders, they usually include "reservation of rights" language to allow themselves the opportunity to make future claims for additional time or money to complete the project.

A disclaimer is often used by the contractor in the change order quotation to allow for further review in order to assess the impact the change order will have on the construction schedule sequence of activities and the overall project duration. This is reasonable since, in most cases, the contractor will not have had an opportunity to complete a total assessment of the time and cost implications of the change order. A compromise may be to allow the contractor a reasonable identified period of time after the change order is signed to analyze and predict its cost and time impact on the overall project. The contractor then informs the owner about its conclusions and the contractor's claims are then crystallized and dealt with. The period for the contractor to analyze, formulate and transmit its claims to the owner may vary with the type and magnitude of the project, but it could range from one to six months.

If a contractor doesn't inform the owner within the designated period of the cost and time impact of the change order, the contractor then waives the right to any additional time or cost resulting from the change order. If the monthly as-built schedule procedure described earlier is employed, this will assist the contractor to formulate its impact claims arising from project change orders.

11. Dispute Resolution Provisions

You can substantially mitigate the effect of disputes on projects by providing for provisions that describe how disputes will be resolved. Contracts that fail to define the dispute resolution process, fail to provide alternatives to litigation.

Some of the dispute resolution alternatives include negotiation, mediation and arbitration. In many cases, mandatory mediation and arbitration provisions should be stipulated in contracts, depending upon the nature of the contracts and whether they would likely be amenable to shorter and more efficient resolution through alternative dispute resolution (ADR) techniques rather than resorting to costly and time consuming litigation.

In addition, in their dispute resolution contractual provisions, the parties have an opportunity at the outset of the contractual relationship, and before matters have gone off the rails, to name future mediators and arbitrators who would be involved in the ADR process should the need arise.

12. Negotiation Training

Negotiation skills are critical to the speedy and efficient resolution of construction disputes. Not everyone is a born negotiator. Firms in the construction industry should endeavor to put forward individuals to negotiate contracts and claims who are diplomatic, show some degree of flexibility and also some facility for the English language. It would also be helpful if negotiation skills were high on such individuals' resume.

Formal training in dispute prevention, resolution and communications and negotiations should be a key ingredient in any successful ADR program, and should be a critical issue for any firm in the construction industry seeking to avoid prolonged, expensive and reputation impugning disputes.

In Conclusion

The writer's suggestions set out in this paper may cause the reader to feel that he has entered into a utopian realm where no construction protagonist dare tread. However, the writer's suggestions are meant to be reviewed objectively by all participants to the construction process. They should be considered an honest effort to reduce the level and volatility of disputes that are inherent in today's construction industry.