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Executive Summary

Construction contracts express the intent of the parties and records in writing their main risk allocation decisions. Each "construction contract" is actually a series of different documents, which together set out the entire understanding between the contractor and the owner. The contract typically is composed of an agreement, drawings, specifications, general conditions, supplemental conditions, addenda, and contract modifications made during contract performance.

Construction is a "high-risk" business with a complex and challenging process. It requires interpretation of and compliance with many laws, codes, and regulations. Within the general conditions of the contract are usually found many of the provisions on construction project risks. Some considerable resources including time, labor, equipment and material need to be gathered throughout the process. Every project involves communications with and coordination among multiple parties such as the owner, the design professionals, contractors, subcontractors and suppliers who may (potentially) have conflicting interests. Their common mission should be to plan, design and build a construction project on time and within budget. The construction industry places a "premium" on quick solutions to problems and the mitigation of risks.

This paper provides a summary of some common risks in the construction contracts and recommended approaches that can be used to mitigate these risks.

Summary of Risks

Contract risk can be divided into performance and cost (Hartman, 2000). A construction risk can be defined as any exposure to possible loss. Because every construction project is different, each project offers a multitude of varying risks. To ensure the success of a project, all stakeholders starting on a construction project must be able to recognize, assess and manage those risks.

Contract Type and Misaligned Incentives Among Parties

According to the Project Management Body of Knowledge (PMBOK) Guide Fourth Edition (2008), contracts generally fall into one of the three following types:

- Fixed-Price or Lump-Sum contracts
- Cost-reimbursable contracts
- Time and Material (T&M) contracts

In some construction contracts, the contract type is not well defined which causes the parties' respective incentives misaligned. If so, the contract will not work well from a practical perspective. For example, a construction project that requires the construction company to complete the project by a due date or pay liquidated damages for every day completion is delayed. However, the owner must pay the construction company on a time and materials basis (Lees, 2015). In this case, the construction company has the risk on "delay", but the owner has the risk on "cost". The construction company will try to complete the project under the time constraint in spite of the cost. They might use materials that are a lot more expensive because they are available a few days earlier. The owner must pay the bill of the materials used. In all likelihood, the parties will end up in dispute due to the misaligned incentives.

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Inappropriate Risk Allocation

Recent research and industry experts have indicated that inappropriate risk allocation through disclaimer clauses in contracts is a significant reason for increasing the total cost of a project. There is no possibility to completely eliminate all the risks associated with a specific project. All that can be done is to regulate the risk allocated to different parties and then to properly manage these risks carefully. Groton pointed out that when lawyers seek to negotiate "the best deal" for their clients in the construction industry, they often craft contract provisions that unrealistically and unfairly allocate risks to project participants who are unable to handle the risk, often creating problems of a far greater magnitude than those they sought to solve (Groton, 2007)

However, in an owner-contractor relationship at least, a common goal of owners appears to be to avoid risk as far as possible by allocating as many risks as it can to the contractor (Gransberg et al., 1997). Disclaimer clauses are usually used by many owners to shift risks to contractors. Such clauses attempt to transfer one party's risk (which may be a legal liability) to another by contractual terms (Hartman, 2000). In other words, these clauses are intended to exclude an owner's liability in the contract and also often in tort for cost incurred by a contractor (Goldsmith, 1995).

Studies were conducted to examine the five most common disclaimer clauses in construction contracts that include (1) Uncertainty of work conditions, (2) Delaying events, (3) Indemnification, (4) Liquidated damages, and (5) Sufficiency of contract documents. Study results have found the process of risk allocation through disclaimer clauses does not encourage any creative ways of doing business between the contracting parties and destroy the level of trust between them. Above all, the existence of a disclaimer clause in any contract would affect the relationship negatively and make both contracting parties work on different sets of personal objectives instead of common ones (Zaghloul & Hartman, 2002).

When a risk is shifted to the contractor and the contractor has no means by which to control the occurrence or outcome of the risk, the contractor must either ensure against it or add a contingency to the bid price (Jergeas et al., 1994). There are two studies which indicate that using disclaimer clauses in Canadian contracts carries a premium of between 8% and 20%, depending on whether business conditions were favorable or unfavorable (Khan, 1998).

Increased Complexity of Contracts

Contract law plays a vital role in facilitating commercial transactions. However, its current use now extends well beyond simple purchases of goods or services. Much commercial activity is now conducted through "outsourcing" rather than direct employment. Private construction companies and their subcontractors deliver major infrastructure projects through "public private partnerships" (Lees, 2015).

As a result, contracts have become increasing complex. Contracts now cover situations where, instead of a one-off exchange of goods or services for money, the parties enter into a long-term relationship in which they require flexibility to deal with matters that arise over time, and their obligations are to some extent open-ended. Some contractors have a long-term partnership with their subcontractors. This is sometimes described as a "relational contract". It does not always fit well with the traditional model of contract, under which all of the parties' obligations are set precisely "in stone" the moment the contract is entered into.

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Increased use of contracts and outsourcing has also meant many individuals are no longer employees and have lost the legal protections of employment law – placing an increased burden on contract law to ensure fairness. Most construction companies use subcontractors which definitely increases the complexity and risks of contracts.

Inadequate Insurance Certificate

Many parties to a construction project fail to adequately confirm that insurance requirements have been satisfied, either upon execution of the contract or throughout the duration of the project (Bobotek, 2011). Required coverage limits, additional insured status, and waivers of subrogation provide no benefit if they were not obtained or are permitted to lapse. It is common for owners and contractors to rely on a cursory review of certificates of insurance to "confirm" compliance with insurance requirements. This practice is extremely risky, as many insurance certificates include incorrect and/or incomplete information, such as omitting mention of risk-changing exclusions or endorsements. In addition, most certificates of insurance are prepared using an industry-standard form. Courts have found that these forms are so replete with express disclaimers that they are not legally binding on the party providing them.

Risks in General Conditions of Contracts

General Conditions of a construction project are all of those items that will not form part of the actual product, once the project has been finalized. The items included under the General Conditions are all of those tools, resources, and equipment needed to build a project, but not directly related to the physical construction activities, and that you can be entitled to be compensated for. General Conditions can account for 10 percent or more of the project cost (Higuera, 2015), depending on the logistics, access and complexity of the project. Therefore items included under the General Conditions are a "significant" factor in a project's budget.

Some construction contracts don't clearly define the General Conditions which may cause discrepancies during the contract's "execution" process. There may be "surprises" related to the terms in the general conditions which cause potential risks. The owner may also be blind-sighted with some "behind-the-scenes" costs. For example, risks may occur if cost of rental equipment is at a significantly higher rate than industry standards (Rodriguez 2017); over-time wages from project management may not be included in the general conditions but later on are charged to the customer.

Understanding how much of the budget goes to General Conditions and which items are covered will give owners a good indication of how the project will be run "on time" and "on budget".

Pricing Risks

The two most common types of contracts are 1) lump-sum or fixed-price contracts, 2) reimbursable expense contracts which include guaranteed maximum price and "cost-plus". Different risks may occur depending on the type of contract used (Pollack, 2015).

Fixed Price and Lump-Sum Arrangements

The most common pricing arrangement for construction projects is the "fixed-price" contract. In these arrangements, an owner defines the scope of the project and solicits bids from contractors, which agree to receive a lump-sum payment for the costs that they estimate will be required to complete the project. Due to these approximate calculations, the contractor takes on most of the risks associated with meeting

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the agreed-upon construction costs, thereby freeing the owner from the responsibility of paying for excessive cost overruns.

Other risks related to fixed-price arrangements can include kickbacks between contractors and subcontractors, the use of substandard materials or improper installation methods, as well as the practice of billing separately for labor and materials already budgeted for in the original contract terms.

Cost-Plus and Guaranteed Maximum Price Arrangements

With the "cost-plus" contracts, contractors receive predetermined fees on top of reimbursements for the costs they incur to carry out the contract terms. One drawback to this type of arrangement is the lack of a "cap" on allowable costs. This puts owners in the precarious position of having to pay for indeterminate costs incurred at the contractors' discretion. Despite the "even playing field" these arrangements create for owners and developers, there are potential risks. For example, contractors may be tempted to overestimate the maximum project price to protect themselves from overly conservative estimates or rising costs of labor and supplies. Moreover, because they are contracted to receive payments above their actual costs, contractors may not be incentivized to be as cost-efficient as possible.

Change Order Risks

Change order abuse is a common practice in the construction industry. The deception compromises all phases of the construction process (from bidding to project delivery) by taking advantage of the underlying contract terms. For example, a change order is used to clarify unspecific contract terms or increase the scope of work outlined in initial construction contracts.

Termination for Convenience Clause

The Termination for Convenience contract clause is a provision that entitles (usually) one party to a contract to terminate it at any time without any liability for damages the other party might suffer as a result of the termination. A Termination for Convenience clause usually is without limitation and an owner is free to terminate for any reason – even no reason at all. Consequently, the clause is regarded as a major potential for abuse (Vann & Pruet, 2013).

Risk Management Approaches

When risks come to fruition, they can have a serious impact on costs, schedules and performance of your project which will lead to delays and disputes down the road. The good news is that most of these risks can be managed and mitigated with proper planning and good project management.

Risks aren't always a negative. Being able to effectively identify and manage risks can lead to increased profits, establishing good relationships with clients that results in more projects and being able to expand your business into new markets and sectors. Risk management attempts to recognize and manage potential and unforeseen trouble spots that may occur when the project is implemented (Larson & Grey, 2011). Proper risk management can reduce the contracts' risks, facilitate the contract administration and improve the expected results.

Risks are managed through sound business and construction practices and through careful preparation and review of the project contract documents. A significant component of successful risk management begins with how well the project participants allocate risks at the contract formation stage. Ideally, the

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project documents will allocate responsibility for certain risks to the party best situated to bear them, thereby minimizing the likelihood and the cost of each risk.

Have Contracts Reviewed by a Knowledgeable Attorney Before Signing

Risk assessment analysis is not a substitute for good legal counsel. All contracts and associated documents should be reviewed and approved by legal counsel prior to execution.

Each construction project includes multiple contracts, all of which should be consistent and complementary to one another. Project lenders' and owners' requirements regarding payment timing and limitations should be properly flowed down into all project contracts so that payment provisions are consistent throughout the contracts. In addition, many lenders, owners and contractors use form contracts with insurance and indemnity requirements that are outdated, unenforceable or otherwise unobtainable. Forcing a party to obtain insurance in a form that is no longer offered, or offered only at a cost-prohibitive premium, is not in the project's best interest. To avoid these problems, it is crucial to have an experienced attorney review the contracts. Just as importantly, there is no substitute for each party reading/studying their contract very carefully before signing. Beyond the obvious problems of errors and inaccurate information that creep into negotiated contracts, careful review may reveal additional risks, improperly allocated risks and other issues that a lawyer, who often is not as familiar as the client with the project, would not catch. It is wise to remember always that few agreements are "perfect", and that vigilant contract review is one of the most crucial steps in the risk management process (Bobotek, 2011).

Realistic Allocation of Risks

Realistic allocation of risks improves productivity, lowers costs, and creates better relationships among participants. The result is fewer disputes and a greater chance for project success. A fundamental risk management concept is that owners and contractors should anticipate potential project risks and determine whether it is more advantageous to accept responsibility for each risk or to allocate responsibility for that risk to another party. From a risk management perspective, it is important to assign a project risk to the party that is best able to control and manage it. For example, a project owner will want to allocate the risk that if someone is hurt by construction operations to the contractor, who is in the best position to provide a safe work site. A contractor will want to allocate the risk of design errors to the owner, who often holds the contract with the architect and therefore is in a better position to address and minimize these losses. These are the types of risks that a construction contract should address, so that the parties know in advance who is responsible for what risk (Bobotek, 2011).

A "reasoned" risk allocation strategy is a "win-win" proposition for all project participants. Such a strategy tries to allocate specific risks based on an analysis of which party is best able to evaluate, control, manage, and assume the risk. Proper risk allocation provides many benefits to the project participants and to the project. With fewer uncertainties caused by unfairly allocated risks, contractors can avoid the addition of cost contingencies in the pricing of project bids and estimates and schedule contingencies.

Build Trust Relationship

Any party should only enter into a relational contract with someone who understands the principles of good contract management and who they trust to manage the contract well. Studies have been conducted to identify the relationship between trust and risk allocation practices in construction contracts (Zaghloul & Hartman, 2002). Study results have shown how a strong trust relationship affects the final cost of any

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specific project by improving the risk allocation method between the contracting parties. Researchers examined the effects of the "Color of Trust Model" on risk allocation process through disclaimer clauses. The most important findings of this study identified that the existence of a trust relationship is significantly important for better risk allocation processes and methods. The study also indicates that there is a certain level of each type of trust (competence, integrity, and intuitive) required to reduce the amount of risk premiums associated with disclaimer clauses or even better, to eliminate the disclaimer clauses from the outset.

Mitigate Pricing Risks

Different actions can be taken to mitigate pricing risks depending on the pricing arrangements. For the "fixed price" and "lump-sum" pricing arrangements, contractors can build contingencies into their bids to protect themselves from unforeseeable circumstances (Pollack, 2015).

To address the risks with the "cost-plus" pricing arrangement, owners may use guaranteed maximum price agreements to limit their liabilities to an amount they negotiate with the contractor at the time of contract. In these scenarios, costs incurred above the contracted amount become the responsibility of the contractor. A shared-savings clause can be written into the contract, in which both parties agree to split any savings below the guaranteed maximum price.

One method for preventing unscrupulous change orders and assuring compliance with original contract terms is the inclusion of a "right-to-audit" clause. These audit provisions can protect owners from the onset by detailing how contractors should conduct business on a given project, including progress reporting, and aim to reduce contractor mistakes and improprieties.

An effective "change management" process should be used to mitigate pricing risks. Bad contract design allows a contractor to quote very competitively on a project, knowing he or she will be able to charge higher margins on the inevitable variations.

Caps on Liability

If contractors have agreed to bear the majority of risks on a project, they will generally insist that their overall liability under the contract is limited. Often an overall "cap" on liability will be agreed at no more than 100% of the contract price.

The owner/employer will usually require carve-outs from the overall cap on liability, so that liability for matters such as death, personal injury, monies recovered under insurances and fraud will not 'count' towards the "cap". Gross negligence is sometimes excluded too.

Contractors may also seek to limit their liability for liquidated damages imposed for delay and for failure to meet performance criteria. Each of these will generally be limited to a percentage of the contract price (perhaps 20%), and there will often also be an aggregate "cap" for both.

Insurance is a Fundamental Way to Manage Risk

If a party has responsibility for a type of loss on a project, it will want to obtain insurance for that loss to minimize its costs, should the loss be realized. Accordingly, when preparing insurance requirements for construction-related contracts, it is important to identify and address the risk obligations associated with

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each project discipline and to make sure that the limits are adequate to address possible losses (Bobotek, 2011).

Numerous risk management products, including insurance policies and bonds, are required to cover the risks presented by a construction project. To the greatest extent possible, the coverage provided by these policies should fit together. Policy provisions are drafted to create, in one policy, the exact coverage that was excluded by another policy. An attorney should review the entire insurance program to prevent gaps in coverage. Gaps can be closed by endorsements or purchasing additional coverage (Bobtek, 2011).

Incentives to Encourage Cooperation

The construction industry uses incentive plans to encourage multiple parties to work together towards a common goal. For example, a general contractor or construction manager who needs to coordinate the activities of multiple subcontractors who have the potential of getting into conflict with each other, can establish a 'bonus pool' which is based upon the need for cooperation and the attainment of specific project goals, will be shared among all of the subcontractors. Under such a system the bonus is payable only if all of the subcontractors avoid conflict and meet the assigned goals — it is payable either to everyone, or to no one. This places a premium on "teamwork", provides all participants with a common goal and incentive to work cooperatively, and reduce conflicts.

Where an organization is contracting with a number of other parties with diverse interests, it can be helpful to structure a system of incentives. Well-conceived incentive programs can be an effective means of aligning the goals of all, can encourage superior performance and discourage conflict. These types of incentive programs encourage participants to subordinate their individual interests to the legitimate needs and success of the enterprise as a whole, for the ultimate benefit of all participants.

Termination for Convenience Clause

Contractors performing private construction work are generally able to negotiate their contract terms. In such cases, the following approaches can be used to mitigate risks caused by the Termination for Convenience Clause (Caudle, 2015).

- If possible, eliminate the Termination for Convenience clause altogether from the contract;
- If the owner insists on the clause, try to narrow down those circumstances under which the owner would desire to terminate the contract, such as (for example) the loss of project financing or governmental approval or the project, and draft language into the clause limiting termination rights to those enumerated circumstances;
- Alternatively, attempt to negotiate more favorable compensation in the event of termination for convenience and include such payment parameters into the clause;
- If the contractor must agree to include a Termination for Convenience clause in a prime contract, it
 must ensure that all subcontracts and purchase orders similarly include Termination for Convenience
 clauses that contain identical payment terms as those contained in the prime contract. Failure to do
 so will subject the contractor to liability for damages incurred by subcontractors and suppliers with
 no ability to recover same from the owner.

The same strategy applicable to contractors applies equally to subcontractors except that subcontractors should first determine whether the prime contract contains a Termination for Convenience clause. If it does, the subcontractor must realize that the prime contractor is very unlikely to delete the clause from

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the subcontract because it requires protection in the event of owner termination. However, the subcontractor should insist that the prime contractor's right to terminate the subcontractor for convenience is limited to only if the owner terminates the prime contractor. If, on the other hand, the prime contract does not contain a Termination for Convenience clause, the subcontractor should revert to the same strategy described above for negotiations with an owner.

Technical and Legal Integration Contracts

For the contract to truly match the required "scope", it is essential that the technical and legal teams of the company are in agreement. The lawyers alone may elaborate complete and complex contracts, but may only consider the legal aspects. Without a complete "scope definition" from the engineering team, and without specific references to design documents and other necessary technical documentation, the value of the contract is questionable. For a contract to be complete, and to serve its purpose, it is necessary to give equal importance to both the technical scope and the legal aspects (Choma, 2008).

Conclusions

Risk management is a proactive approach rather than reactive [Larson & Gray, 2011]. Identifying and managing risks can be tricky, but not impossible with careful planning and execution. When a risk turns into reality, it can disrupt and derail a project. In order to avoid disaster, it's critical for all parties of the construction contract to properly assess, manage and monitor those risks once they've been identified.

Good risk management requires a high level of collaboration and communication with all parties involved. Keeping everyone on the same page and working together will allow you to identify and manage risks before they become a problem. Remember, risks can lead to great rewards when effectively managed.

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