

THE ROLE OF LEGAL ISSUES IN CONTRACT ANALYSIS AND PROJECT MANAGEMENT

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ABSTRACT

Although there are many discussions of the legal implications of BIM, none of the studies provides a comprehensive review of the legal issues associated with BIM; nor do they evaluate the solutions currently available to address the issues. This paper aims to provide a critical review of the legal issues arising from using BIM and of their associated solutions. A systematic review was conducted of fifty-five (55) journal articles and conference papers published from 2007 to 2017 to identify the legal issues. The identified legal issues were then analysed in relation to the solutions provided by the construction industry. The results of the study revealed that (1) an alternative project delivery approach that does not modify the original orientation of the design-bid-build procurement structure is required to deliver BIM effectively. (2) The potential change in the standard of care for project participants due to additional roles required in delivering BIM needs further investigation. (3) The roles for auditing a BIM delivery system must be included in the contracts to ensure the quality and compliance of BIM deliverables. The study not only reviews the legal issues associated with BIM, but more importantly, it also offers significant insights for future research.

Keywordsanalysed, legal.

INTRODUCTION

As a project manager, especially in large engineering projects, there are many legal concerns in contracts, damages and injuries. However different countries and provinces have different law system so it is hard for PMI to integrate the details into the body of knowledge.

I am not a legal practitioner so I cannot deliver professional legal advice. However I got inspired by reading some law articles and would like to introduce some basic concepts and analysis to projects managers regarding to contract and tort laws. Although the legal reference background is based on the Canadian Ontario Engineering Law Examination, it is beneficial for project managers worldwide to grasp those concepts, so that project managers can have a rough idea before consulting their own lawyers.

The scope of this article is as followings. For the contract laws, we are going to introduce five concepts:

- Equitable estoppels
- Fundamental breach
- Unilateral mistakes,
- Contract A in tendering process
- Legality of purpose for non compete clause.

Also we are going to talk about tort laws.

The above legal contracts are presented as a system for case analysis supported by other simple legal concepts. A glossary will be supplemented at the end of the articles.

Objective of the study

- 1) To introduce and define BIM to the AEC industry as a tool which facilitates integrated practice and reduces gross inefficiencies and redundancies
- 2) To describe and illustrate the variety of ways designers and contractors are currently applying BIM tools to the construction process and address the legal issues, risks and barriers raised by the use of BIM in these contexts in conjunction with a wide spectrum survey of AEC industry members

Structure of the guidance

This guidance starts from the general and relevant aspects of contract management (such as Contract Management Plan (CMP), relationship management etc.). It then presents the contract management aspects of selected categories (such as Works, Goods etc.) to try to support teams involved in managing one or more of those categories. There is also a section on managing ESHS risks in Works contracts. Teams Introduction Contract Management Practice 2 managing one or more of these categories may prefer to refer to the general provisions followed by the category/ies of interest. This guidance comprises of practical short case studies to illustrate relevant contract management aspects. The guidance also comprises of some templates such as for CMP, which may be modified to suit the needs of a contract. There is also a separate excel based Contract Price Adjustment Computation Workbook to support Borrowers in applying contractual price adjustments.

Contract management

1. Delivered on time, at the right place and in the right quantity;
2. Completed to the required specifications, standards and/or quality;
3. Completed within the agreed price
4. Contract management continues throughout the life of the contract. This means that the Borrower needs to plan for, and undertake:
5. Effective and efficient management of performance, delivery and payment;
6. Methodical and measured change control; 3. active risk mitigation and management
7. Agile resolution of issues and disputes

Case Study

ACE Construction Inc. is a company primarily engaged in the business of supplying heavy equipment used in construction. As part of the company's economic plan to expand its business, ACE became interested in the rock crushing business. ACE had become aware that International Metals Company LTD. ("IMCO") required a contractor to crush, weigh and stockpile approximately 250,000 tons of ore. As ACE believed this was an excellent opportunity to venture into the rock crushing business, it decided to tender on the IMCO contract.

In order to tender on the contract, ACE set out to purchase the necessary equipment to crush the material. ACE was contacted by a representative of Rock Busters Ltd., a company which sold such equipment. After visiting the IMCO site and determining the nature of the material to be crushed, the representative discussed the IMCO's contract with ACE. After performing a number of calculations, the representative determined and guaranteed that the equipment Rock Busters would provide would be capable of crushing the material at a rate of 175 tons per hour.

On the basis of the guarantee, Rock Busters and ACE entered into a contract. Rock Busters agreed that if ACE were successful in its tender to IMCO, Rock Busters would provide the equipment for a price of \$400,000. The contract also contained a provision limiting Rock Buster's total liability to \$400,000 for any loss, damage or injury resulting from Rock Buster's performances of its services under the contract. Based on the information provided by the representative, ACE prepared and submitted its tender to IMCO. IMCO accepted the tender and entered into a contract with ACE to crush the material.

The rock crushing equipment was set up at the IMCO site by employees of Rock Busters and crushing operations commenced. However, from the beginning there was trouble with the operation. One of the components of the crusher, called the cone crusher consistently became plugged by the accumulation of material. Each time the cone crusher became plugged, the

operation would have to shut down and the blockage cleared manually. In some cases, such blockages caused damage to the equipment.

Rock Busters made several unsuccessful attempts to correct the defect by making modifications at the site and at its factory. The crushing equipment was never able to crush more than 30 tons of materials per hour.

In order to meet its obligations under the IMCO contract, ACE hired another supplier to correct the defects in the Rock Busters equipment. For an additional \$500,000 the supplier replaced the cone crusher with one manufactured by another company. The modified equipment was able to crush the material at the rate of 180 tons per hour. The total amount which had been paid by ACE to Rock Busters was \$350,000.

Explain and discuss what claim ACE can make against Rock Busters in the circumstances. Would ACE be successful in its claims? Why? In answering, please include a summary of the development of relevant case precedents. In particular, point out how the law changed because of these relevant case precedents. Identify the legal principles on which the precedent decisions were based and apply the appropriate legal principle to the facts

1 Contract Completion

The contract completion process is usually a simple but detailed administrative procedure. The purpose is to verify that both parties to the contract have fulfilled their contractual obligations and there are no responsibilities remaining. In addition, contract completion is the time to assess the success of the contract and determine if there are any lessons learnt for future contracting

. A contract can be discharged in two ways:

(a) all obligations under the contract are fulfilled

(b) not all obligations have being completed. When not all obligations are completed, a contract can be terminated in a number of ways including mutual agreement or discharge; release; waiver; or novation or substitution. The Contract Manager should seek advice from the Legal Office and/or UPCO for appropriate courses of action.

Certain limitations must be considered because some of the related publications might not be retrievable. In addition, the review of the legal issues and their solutions is based on the literature identified from the y-ve (55) conference papers and journal articles based on certain keywords and databases as highlighted in the review methodology, standard BIM contract protocols and other relevant literature sources. It is possible that this study has overlooked

certain legal issues and solutions that might also be suitable for inclusion in the papers. us, the classification of legal issues can vary depending on the individual perspective. At present, a considerable amount of time is required to ensure that a virtual model and its associated data are transferred without error. e best contract practices could be achieved if the interfacing issues are resolved and the project participants are willing to accept the legal implications arising from the adoption of BIM.

CONCLUSION

A [contract](#) is a written or oral legally-binding agreement between the parties identified in the agreement to fulfill the terms and conditions outlined in the agreement. A prerequisite requirement for the enforcement of a contract, amongst other things, is the condition that the parties to the contract accept the terms of the claimed contract. Historically, this was most commonly achieved through signature or performance, but in many jurisdictions - especially with the advance of electronic commerce - the forms of acceptance have expanded to include various forms of electronic signature. Contracts can be of many types, e.g. sales contracts (including leases), purchasing contracts, [partnership agreements](#), [trade agreements](#), and intellectual property agreements. Certain limitations must be considered because some of the related publications might not be retrievable. In addition, the review of the legal issues and their solutions is based on the literature identified from the y-ve (55) conference papers and journal articles based on certain keywords and databases as highlighted in the review methodology, standard BIM contract protocols and other relevant literature sources. It is possible that this study has overlooked certain legal issues and solutions that might also be suitable for inclusion in the papers. us, the classification of legal issues can vary depending on the individual perspective. At present, a considerable amount of time is required to ensure that a virtual model and its associated data are transferred without error. e best contract practices could be achieved if the interfacing issues are resolved and the project participants are willing to accept the legal implications arising from the adoption of BIM.

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