



## Legal Framework on Risk Management for Design Works in Malaysia

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### Abstract

The construction industry is subject to more risks and uncertainties than many other industries. Construction projects are associated with various aspects of risks, be it risks associated at the feasibility stage, design stage, construction stage and post construction stage. In order to complete the project successfully, the parties involved must be able to manage the risks associated with the project. Although the need and importance of risk management cannot be denied, the practice among the players in the construction industry does not reflect such urgency. There have been a number of cases which resulted in damages and losses, where such damages could have been avoided if proper risk management had been properly administered. In the event where risks still occurred, failure to exercise risk management policies will result in no protection available for the parties. The standard of risk management among the parties involved in a construction project in Malaysia differs from one company to another. This is due to various factors such as a company's resources for risk management, types and size of the projects and so on. As such there is a need to standardize the practice of risk management among the parties involved to secure the safety and performance of the project. This can be achieved through legal measures, where certain requirements on risk management can be imposed to ensure that the least required practice of risk management is exercised. This is in line with the nature of the law itself, namely to address public safety, security, clarity, flexibility, transparency and adaptability. This paper is meant to look at the risks associated with the design works under the traditional procurement route in Malaysia and the need for the Malaysian law to come up with a framework in ensuring the practice of standard risk management among the architects as lead designers under the traditional procurement system. Certain aspects need to be addressed, as Malaysian law seems to be inadequate in establishing the framework for risk management in relation to design works.

**Keyword:** Legal, Risk management, Malaysia, Design Works

### 1. Introduction

Similar with any other industries, risks exist in the construction field. Accordingly, the acceptance of an obligation in a building contract is associated with the acceptance of commensurate risks, namely the risk of being unable to fulfill the obligation because of one's own inadequacy, incapacity, inadvertence or error, or because of interference from outside sources or supervening events (Nigel, 1996). The risks, if not properly managed, may cause substantial loss to the parties. Therefore, dealing with the risk that some events might occur, and with their consequences when they occur, is the art of risk management (Mehr and Hedges, 1989). It is important for the risks to be managed properly to avoid disruption to the project.

Good risk management practice is essential in achieving the above aim. However, in practical, the practice of good risk management varies from one individual or company to another. Various reasons can be associated with this fact, such as failure to understand the risks involved, poor comprehension of the practice of risk management and its benefit as well as limited resources available in practicing risk management. Nevertheless, whatever the reasons, it is submitted that proper risk management practice is essential in ensuring the success of the project. As such, by virtue of this article, the

manner of the Malaysian legal system in corresponding to the establishment of risk management framework will be looked into, in particular on risks associated with architect and design works. With sufficient and clear illustrations of the law on the architect's duties and obligations on design works, particularly in relation to risk management exercise, the risks of the project can be properly managed and in turn contribute towards proper execution of the project.

## **2. Problem statement**

The Malaysian construction industry is widely dominated by the traditional structure of contracting, where three distinctive parties are involved, namely the employer, architect and contractor. The traditional structure of contracting formed the backbone of the existing Malaysian building contract, such as the Persatuan Akitek Malaysia (PAM)1998 Form of building contract, the Construction Industry Development Board standard form of contract for building works (2000 edition) and the Public Works Department Forms. According to this form of contracting, the employer will engage the architect for design, while the construction works will be carried out by the contractor. Basically, the contractor will be selected either directly by the employer or through a tendering process. The architect will be responsible to administer the contract. The basic picture of the above procurement system can be associated with a number of advantages, as well as disadvantages. Similarly, various aspects or risks can be associated with the traditional procurement route. The law may facilitate the practice of risk management, either by imposing duty to exercise the basic element of good risk management practice in design works, by properly allocating the risks to the most appropriate party to manage or even establishing the benchmark and standard of acceptable risk management policy.

Nevertheless, the role of Malaysian law in establishing a standard risk management practice among the construction community is still lacking. One of the examples is on the legal provisions related to insurance. Insurance has been accepted as a tool of risk response, being part of the risk management exercise. However, under the Malaysian law, provision related to the necessity of insurance is inadequate. For instance, there is no legal guidance on latent defects insurance, as compared to the English law. This particular type of insurance is important to cover against defects in the design, materials or construction of the building which is not discovered until some time after its completion, which may take place long after the defect liability period has ceased. Without such insurance, the architects are left without any protection for losses due to defect in design.

## **3. Design and risk**

In order to understand the perspective of risks related to design works, specifically in relation to architect and design works, we have to look at the definition of design. Generally, for the purpose of description, design can be termed as (Cornes, 1989): (a) all the decisions that need to be made as to the location in three dimensions of every component part of the project, the definition of the quality and quantity (including the specification of workmanship) of each component and how each fits in with another; and (b) all the same decisions in relation to any temporary works (not being part of the finished project) needed to achieve the construction of the project. On this point, all standard forms of building contract assume that the temporary works should be left to the contractor on the basis that he is best placed to deal with such matters.

With reference to the definition of risk, Cooper and Chapman (1987) defines it as: "Risk is the exposure to the possibility of economic or financial loss or gain, physical damage or injury, or delay, as a consequence of the uncertainty associated with pursuing a particular course of action." According to the British Standard on risk (BS 4778, 1991 Part 3 – in Royal Society, 1991) risk is "a combination of the probability, or frequency, of the occurrence of a defined hazard and the magnitude of the consequences of the loss." The Royal Society of United Kingdom, in one of the findings of its study (Royal Study, 1991) termed risk as "the probability that an adverse event occurs during a stated period of time." Risk management, therefore, can be well illustrated in the words of Raquib (2002) as a systematic process for identifying and evaluating pure loss exposures faced by an individual or an organization and for selecting and administering the most appropriate techniques for treating such loss exposures.

Based from the above definitions of risk, it can be noted that the term risk incorporates three essential elements, namely probability of occurrence, potential loss and time. Accordingly, the existence of such elements within the context of the definition of design can be regarded as design risk.

## **4. The Essentials of Risk Management**

Risk management practice, according to Jaafari and Anderson (1995), can be classified into three different stages, namely risk identification, risk analysis and risk response. According to Williams (1995), the identification of each risk is an important step in risk management. However, this task is the most difficult during the whole process. Accordingly, the identification of the source of each risk and its element will enable it to be separated from other risk elements. Giving due consideration over each influencing factor will ease the process of analyzing and management of the risks (Bajaj, 1997). The most important thing to ask during the risk identification process is (Godfrey, 1996). "What are the discrete features of the project (risk sources) which might cause such failure?" Once the influencing factors have been identified, the risk can be analysed and proper response can be strategize.

Meanwhile, risk analysis is defined as the quantification of risk as the magnitude and frequency or time frame of each event. Each event may be a single incident or an aggregation of incidents (Jaafari and Anderson, 1995). In conducting risk analysis, various techniques can be applied, such as code optimization, sensitivity analysis, probabilistic analysis, Monte Carlo simulation and kinetic tree analysis. By conducting risk analysis, we will be able to quantify the effects of the major risks which have been identified earlier. Nevertheless, it was submitted that risk analysis has not been constantly conducted in construction projects (Hayes, *et al.*, 1986). Generally, commercial pressures were often invoked by the clients, contractors, and consultants in avoiding analytical approach over the risks, even though the benefits of risk management cannot be denied. On the other hand, once the risk has been identified and analyzed, the parties involved have to make a decision in responding to the risks which is called as risk response. Accordingly, the higher the degree of risk involved, equal response must follow. Various ways are relevant with regard to risk response, such as avoiding the risk, reducing, transferring or even absorbing it. These steps can be taken single handedly or in combination, depending on the circumstances. The most efficient response to risk is by allocating it to other parties who are in the best position to accept it (Mills, 2001). The practice of allocating the risks has always be in line with the spirit of building contract, where the purpose of the contract is to determine and distribute the rights and obligations of each parties involved. Under the traditional scheme of contracting, for instance, during the tendering process, the contractor will evaluate the cost of the project and place his bid with certain contingency funds included as a way of responding had something bad happened during the course of the project. Nevertheless, it is submitted that this practice was done blindfolded, since no scientific premium calculation was carried out, due to the absence of formal risk analysis. Risk contingencies have always be the practice based on past experience, concealed or hidden within the bid process (Mills, 2001).

With reference to the above, it is clear that risk management has other major benefits, in addition to the project being completed on time and within budget, such as (Mills, 2001) it enables decision making to be more systematic and less subjective. It also allows the robustness of projects to specific uncertainties to be compared while making the relative importance of each risk immediately apparent. In addition, it gives an improved understanding of the project through identifying the risks and thinking through response scenarios. Finally, it has a powerful impact on management by forcing a realization that there is a range of possible outcomes for a project.

#### **5. Perspective of risks on design works under the standard form of contract**

According to Taylor (2000) there are a number of risks embodied in the standard forms of building contract available in the industry. The risks illustrated are connected to standard forms regulating the traditional procurement route, where a lead consultant will be responsible for the rest of the professionals involved in the project. Accordingly, the Malaysian PAM 1998 Form is a contract form of similar nature, and the lead consultant referred to under PAM 1998 is the architect. Malcolm Taylor grouped the principal risks associated with standard forms into seven headings:

##### *5.1 Changed responsibilities*

Prior to the appointment of the contractor, the architect as the lead designer owed duties solely to the client. However, once the contract is concluded, the architect responsibilities have changed. To administer the contract fairly, he has to act even-handedly between the client and contractor. The architect has a quasi-judicial role, where he should not give advice to the client or take instructions which would compromise his position to act fairly in the interest of both the contractor and the client.

##### *5.2 Provision of information*

It is a normal occurrence in a construction project that the contractor will not receive full construction information on appointment. Various devices have been introduced in order to provide protections for the contractor in such circumstances, as well as allowing the consultants to issue the information later. However, it is submitted that this is substantial risk territory for consultants and the contractor claims and the client pays up and then looks to the consultants to recoup. Under this circumstance, it is advisable for the consultants to rely on clauses requiring sufficient notice to be prepared by the contractor for information required, rather than invoking clauses on master programmes of the project.

##### *5.3 The consultant's power to instruct*

The architect, being the lead consultant, as well as the sole agent appointed by the client to administer the contract on his behalf and acts on two functions, namely (a) To act on his own behalf as the designer of his part of the total design, and (b) To act on behalf of other consultant designers, as a channel for passing on their instructions and certificates to the contractor.

The contract makes no distinction between the above tasks of the architect, therefore creating the opportunity of risks to occur. Therefore, the lead architect needs to be able to identify the initiating professions for all communications with the contractor, be it him as the project architect as well as representing the other designers. Such boundaries of respective professions lie within the appointment of each professional. If the architect fails to draw the line of each initiating

profession, the architect as a designer may attract liability for the action of other designers. In addition to this, the architect must also be able to make the designing group understand when they should make their contributions in the contract administration to avoid further conflict. Another ground where the architect, as the lead consultant, needs to be clear is on the need to differentiate between the wide power given by the contract upon him, in contrast to the power given to the other designers under their respective appointment. While the client is powerless to question or prevent the issuing of an instruction by the contract administrator acting as his sole agent, the consultants must be aware that they do have the corresponding duties to consult the client pertaining to such matters. As such, it is submitted that there should be some kind of mechanism in allowing these information to flow. Any sort of conflict may jeopardize the project.

#### *5.4 Inspecting quality of construction*

The quality of construction is a major risk area involving the consultants. Differences of opinion between the consultants and contractors on the quality, time and cost of a project are almost certain to arise in a project. However complete the specification and drawings, the quality required can be elusive and often has to remain for the contract administrator or lead consultant's ultimate acceptance when he inspects construction completed or under construction. It has been a long tradition that the designer inspects to reassure the client that construction reaches the standards laid down by the contract. While designers may disagree on what such reassurance might mean to a court, they will be unanimous in rejecting it as any form of guarantee. Therein lay the risks of inspection. The duty to inspect can be divided into five stages, namely (a) Occasional or frequent inspection of work in progress and unfixed materials/equipment by the contract administrator, clerk of works or site engineers, with the contract administrator having the power to reject it and having it rebuilt, (b) Certification of completion, when the contract administrator is satisfied that the works is completed, (c) Commencements of the defects liability period, during or shortly after which the contract administrator draws up a list of defects which appeared during the period, (d) Certification that the contractor has made good these defects and (e) Issuance of the final certificate.

There are risks involved under each heading. However, the risks of each stage can generally be grouped into two categories, namely (a) The possibility of two different perceptions by the parties involved, namely the client and the consultants. The client might deduce some sort of guarantee that all works are inspected and complied with the contract requirements, especially when he is also paying for consultant site staff, clerk of works and site engineers. On the contrary, the contract administrator may counter to the perception of the client, by arguing that irrespective of inspection and various certificates, contractually the contractor still remains responsible for providing the quality specified. On this point, the client is still open to content that he is eligible to claim against the contract administrator as well as the contractor if he believes that he has not received the quality agreed on, based on the fact that he has paid for the reassurance inspection carried out by the professional consultants. This contention is supported by the fact that the words of the contract are not completely clear in limiting the consultant's potential liability, and (b) The second category is on the significance of the final certificate. Is the final certificate issued by the contract administrator are intended to be regarded as a form of guarantee, thus will it bar the client from making further claims against the contractor? In the case of *Crown Estates Commissioners v John Mowlem & Co Ltd*, the court was of the opinion that the issue of the certificate prevented the client from pursuing the claim. Although the judge in this case did not openly mention that the client can claim against the consultants based on the ground that his issuance of the certificate has prevented the client in his legal action against the contractor, legal expert submitted that such inference can be made from the judgment. As such, it posed another spectrum of risk to the consultants, especially to the contract administrator.

#### *5.5 Variations to the contract, extensions and damages*

The present contract forms contain complex mechanisms to adapt to changes and its consequences to the parties involved. Sometimes, although the changes are so significant that the project has become completely different from the initial project tendered by the contractor, the mechanisms available in the contract provides substantial provisions for the recovery of the contractor expenses.

With reference to the changes and variations, the design team has to be vigilant in advising the client on potential consequences, in particular the aspects of incomplete design which might have to be reworked, causing the issue of variation instructions to arise. In addition to this, the contract administrator has to take into consideration the fact that normally variations and changes will lead to higher expenses. Under this circumstance, the contract administrator owes a duty to inform the client of potential expenses on the project.

#### *5.6 Insurance*

Another aspect of risks embodied in the wordings of standard forms of contract available in the industry is on the issue of insurance. The contract administrator, while is expected to understand the whole content of the contract produced by, or under the advice of, his professional institute, the clauses on indemnity and insurance are partly exceptions to this

rule. The clauses on insurance are largely drafted on the advice given to the insurance industry; their language is largely the language of the insurance industry. The drafting of the insurance clauses must be set up correctly otherwise; the purpose of the insurance clauses in managing the risk will not be fulfilled. In addition to this, the understanding of the meaning of the insurance clauses is also essential to serve the above objective.

### *5.7 Payments to the contractor*

The traditional scheme of construction requires the client to pay a substantial portion of the total cost in stages before the building can be put into use. The client faces the risk that if the contractor had defaulted and disappeared before completion of the project, he would have to hire another contractor to finish the job, without assurance of cost recovery from the absconded contractor. With the above point in mind, the client will look at the consultants, in particular the architect who is the contract administrator, to ensure that he doesn't pay too much on account. The consultants have to consider this matter carefully, especially when certifying finished work by the contractor. If the contract administrator over-certifies the work, and the contractor fails before the work is completed, the client may be successful in his claim against the consultants.

From the above perception of risks illustrated by Malcolm Taylor, we can simplify that risks related to design under the traditional procurement route can be two folds, (a) the first perspective of risk in relation to the above is related to the designer's specific duty under the building contract. Within the context of this article, the designer's duty is limited to the duty of an architect, who also acted as the contract administrator. Accordingly, behind every designated duty, lies the potential of failure and risks to the project. Failure to execute the duty accordingly will expose the project and the designer to various risks elements, liability and legal actions, which will then have an impact over the designer, the design and the project. Under the contract, the architect is under the obligation to perform certain duties. The nature of the designer's duties, as stipulated by the contract leads to a possibility of risk occurrence. For instance, one of the major duties of an architect is to prepare a design for the project. Under this circumstance, there is a possibility for design error which will jeopardize the whole project, due to various factors. There are many factors which may lead to design error. For instance, the designer responsible over the design is incompetent to do so, or there are certain constraints on the designer to come up with a viable design, such as monetary and time constraints. Design error might also take place when the project in question requires noble and risky designs to be prepared, and (b) the second perspective of risk in relation to architect and design works is related to the whole structure of the procurement route. While the previous form of risk is associated with the specific duties of the designer, this type of risk is associated with the practice of the industry within the nature of the traditional scheme of contracting. Various aspects of risks can be related to the structure of the procurement, such as the risks due to involvement of various parties in the project, the elements of insurance available in the industry as well as the nature of the work carried out under the traditional procurement route. For example, in order to illustrate the risks involved in the nature of contracting, the whole process can be illustrated in accordance with the RIBA Outline Plan of Works. The outline, dividing the procurement route into twelve stages, outlines the whole process involved, including the preparation of the project design. One of the stages involved during the RIBA Outline Plan of Works is the 'Briefing' stage. Accordingly, the design will be prepared by the architect based on a briefing of the whole project by the client. Insufficient details given during the briefing process may lead to designing problems, not only during the preparation of the design itself, but also during construction. Contractors will have to ascertain more details in relation to the incomplete design and this will cause delay to the project. An incomplete design will also lead to price discrepancies during tendering process. It might happen that the whole project cost will eventually increase, due to the above reason. Accordingly, it is clear that risk management is essential in ensuring that the project can be completed successfully. Due to its importance, risk management has to be thought off seriously. One of the means in establishing good risk management practice is through legal measures.

## **6. The Law**

It must be noted the role of law is significant during the whole risk management process. Risk management is an area, which may be effectively thought of in the formulation of law and establishment of legal framework. It is essential to analyze how those potential risk factors related to human actions could cause human sufferings. Those actions could be protected by legal terms so that risk of damage cannot occur at all. Any law should address public safety, security and should be clear, flexible, transparent and easily adapted. Use of risk and risk management knowledge can effectively serve these purposes in meaningful ways (Raquib, 2002). This purpose is in line with the objectives of the law itself, either by refraining people to commit certain acts, or by binding people to do certain acts. The basic example of the role of law within this context is the regulation of speed limit on highways. The purpose of imposing a speed limit is to protect human lives and properties. It may be perceived that if lawyers and legal administrators learn risks and related management procedures, existing legal framework may be stronger, as risk management encompasses a 'shield guard' to protect human lives and properties (Raquib, 2002).

The present awareness of the Malaysian construction community over the importance of risk management has increased and steps have been taken to improve the present scenario. This is made evident based on the opening remark by the

Honourable Dato' Fong Chan Onn, the Minister at the Malaysian Ministry of Human Resource who delivered during a dialogue session between the Minister of Human Resource and the CEO of construction company in Malaysia on 7<sup>th</sup> March 2006: "... Department of Safety and Health is in the final stage of introducing a new set of regulations, which will require employers to manage safety and health at work sites systematically. One of the main elements in the regulations is the requirement for employers to conduct hazards identification, risk assessment and risk control at the construction sites."

Nevertheless, it is submitted that the Malaysian law provisions on establishing a solid ground for risk management practice is insufficient and still lack positive development, in particular risks related to design works. For instance, in the United Kingdom, the Construction Design and Management (CDM) Regulations 1994 was placed to ensure that the risk related to design is addressed by placing certain specific legal duties on the designers. The CDM Regulations are meant to improve the overall management and co-ordination of health, safety and welfare throughout all stages of a construction project, with the purpose of reducing the number of serious and fatal injuries. Unfortunately, a similar legislation is not available in Malaysia. Another example can be related to the requirement of insurance cover in a construction project. While there is a legal obligation imposed on professional designers to maintain certain amount of professional indemnity insurance, there is no such requirement for non-professional designers. In a construction project, not all designs will be prepared by the architect. Under certain circumstances, the consultant, contractor or sub-contractor is responsible for certain parts of the design works.

For instance, the sub-contractor, to a certain extent, does play some role in designing part of the project as illustrated in the case of *Holland Hannen And Cubbits (Northern) Limited v Welsh Health Technical Services Organisation*, where the sub-contractor was responsible for the preparation of design for windows in the construction of Rhyl Hospital. However, the sub-contractor failed to insert the details of sealant to be used in his design. On this matter, the court held that the details of the sealants are necessary for the works to be properly completed. "I think that the reality is that, as was recognized by the direct contract and as [the sub-contract] themselves admitted, [the sub-contractor] were the designers of the windows assemblies. They should have submitted full particulars of their designs, including details of sealants, to [the architect] for approval. Inevitably, that approval would have been of a somewhat formal character, since [the sub-contractor] and not [the architect] were the experts with regards to sealants as they were with regards to windows generally, but the effect would have been to make quite certain that the sealants become part of the contract works."

Under the above circumstances, if lack of details in the design prepared by the sub-contractor caused damages on the employer's part, there is no professional indemnity insurance coverage to protect the employer against such loss. In addition to the above, while there are provisions on professional indemnity insurance related to the architect in particular, the policy coverage is still lacking. There are a number of deficiencies within the Malaysian context. Apart from the issue on professional indemnity insurance, another area where Malaysian law is at *lacuna* is on the matter of latent defects policy. In the United Kingdom, the latent defects insurance or the inherent defects insurance has been common (Levine and Wood, 1991), but such insurance policy is not practiced in Malaysia. The policy provides that, subject to any exclusion, cover against defects in the design, materials or construction of the building which are not discovered until some time after its completion. This policy is a first party policy which allows the insured to make a claim for the cost of rectification of defects and frequency; it takes the form of a ten-year non-cancelable policy.

By virtue of the above examples, it is submitted that the legal provisions available in Malaysia related to design risk management are insufficient, and the door is still widely open to be explored. Any law should address the public safety, security and should allow for clarity, flexibility, transparency and adaptability. Use of risk and risk management knowledge can effectively serve this purpose in meaningful ways.

## 7. Conclusion

To ensure the safety and proper performance of a construction project, the parties involved must be proactive in managing the risks associated with the project. With reference to this paper, the architect as lead designer under the traditional procurement route has to ensure that all risks related to design works are properly managed and controlled. However, due to certain reasons, such measures of properly managing the design related risks vary from one architectural practice to another, despite the ever importance of risk management. This fact cannot be tolerated since risk management is a proven tool in ensuring the safety and proper performance of a project. Therefore, some mechanisms are needed in ensuring that the standard practice of risk management is met. The law may provide the framework for proper performance of risk management practice, particularly in relation to design works. However, the state of the law in Malaysia is inadequate to fulfill the above objective. There are a few lacunas that need to be addressed, before proper legal framework on design risks management can be established.

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