

## MANAGING RISK – CONSTRUCTION INSURANCE

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### Report Objective

To examine the role of the construction insurer as a service provider and how their service could be enhanced to the advantage of customers and underwriters with the ultimate goal of minimising or eliminating risk and as a consequence loss.

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### Prologue

This Paper is not intended to be an exposition on Risk Management, but to promote the attributes of 'Good Underwriting Practice'. "To know the Risk Factors is to understand the Underwriting requirements".

It is recommended that The Insurer participate in the Client's Risk Management Programme. This will facilitate and establish the credence and integrity of the Insurance Officials relative to Risk Control.

The management of the Insurer's Risk cannot be achieved in isolation as a separate entity. To be effective and meaningful, there must be cohesion between the Client's Team and the Insurer's Team to common cause. The Client and The Insurer both have an interest in Project completion with the minimum amount of Risk and, consequently, Financial Loss, thus, the need to integrate the two Teams.

The complexity, size, nature and location of the Project will determine the extent of Insurer's involvement. Those Projects of minor value, of standard/simple design and in locations where the topography is known, will require lesser involvement by Insurers. However, there must always be a degree of participation by Insurers, the extent of which must be determined by Risk parameters.

It must be understood that this type of participation and involvement requires and presupposes professionalism, commitment and enthusiasm on the part of both the client and insurer. It is also, not just an up-front exercise, but an on-going involvement throughout the project. Regular site visits must be made, especially during critical construction and testing/commissioning stages.

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## Introduction

Internationally, Construction Insurance Underwriting Results have shown a marked decline and many Countries are reporting adverse loss ratios for this Class of Business. Clearly, this trend cannot be allowed to continue unabated, action must be taken to reverse this unhealthy situation.

Policy wordings are becoming wider and often include cover for the cost of rectifying defective Materials, Workmanship and Design (including the consequences thereof); Professional Indemnity; Interference with and the Removal of Support; Products Liability; Beneficial Occupation; Completed Works (Decennial Covers) and the like. Exposures and Risk Factors become far more critical where Policies embrace such extensive cover. The Insurance Programme for many Construction Projects now include cover for Advance Business Interruption (Delayed Start-up/Project Delay), thus enhancing Risk Exposures.

The role of the Construction Insurer (*EAR/CAR AND LIABILITIES*) must become proactive rather than reactive in the establishment of *RISK BASED MANAGEMENT ACTIVITIES AND CONTROLS*. Clearly, we must take an active part in determining our destinies and not leave it to others, who do not have any financial interest in our continued wellbeing.

Insurers' have a plethora of valuable statistical data available to them accumulated over many years derived from claims processed. This information could be of considerable benefit in Risk Management Activities. Information and Experience stored, only has value when shared with others to improve Business and Technical practices. *This is where the IMIA website could play a vital role in sharing experience and knowledge amongst members.* Members could then use this information to advise their Clients on product selection and application.

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## Definition of Risk Management

*RISK MANAGEMENT is the systematic process of managing an organisation's Risk Exposures to achieve its objectives in a manner consistent with public interest, human safety, environmental factors, and the Law. It consists of Planning, Organising, Leading, Co-ordinating, and Controlling Activities undertaken with the intent of providing an efficient pre-loss plan that minimises the adverse impact of Risk on the organisation's resources, earnings, and cash flows. (American Risk and Insurance Association Paper).*

In managing the Client's (Insured) Risk Factors, this, likewise, has an advantageous affect on Insurance (or other Risk Financing) Exposures.

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## Definition of Risk

There are numerous definitions of "RISK", however we deem the following to be the most appropriate to this presentation:

*"Uncertainty of loss, where the term 'risk' is implicitly understood as uncertainty of financial loss – and, where the definition denies that the degree of uncertainty needs be measurable or the probability of loss determinable".*  
Denenberg. Et al., [6].

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## **Risk Management Resources**

To be an effective and meaningful participant in a Risk Management Team, it is necessary for the Insurer to have qualified in-house resources with the necessary experience and skills. It must, however, be appreciated that the basic Risk Management Team must be an in-house (Insured/Client) structure with the full commitment of Management and Participants, to which the Insurer adds enhanced expertise, in partnership. If, the Insurer wishes to play an active and advisory role in the Risk Management procedures, it is suggested that they have, as a minimum, the following Human Resources:

### **Professional Engineers (with Site Experience)**

Civil and Geotechnic  
Structural (Concrete and Steel)  
Electronic/Light Current  
Electrical/Heavy Current  
Mechanical with Metallurgical skills

### **Surveyors**

Fire  
Security  
Environment

### **Commercial Evaluators**

Financial  
Legal  
Underwriting

However, where resources and skills are limited, the Insurer can still participate by way of sharing knowledge based on experience and derive much valuable information relating to risk factors from the Insured's Experts to evaluate the risk exposure(s). The Insurer's input can embrace such subjects as Minimisation of Fire exposures (selection of Building Materials, lay out of Buildings [especially temporary buildings and storage areas], smoke detectors and fire suppression systems), adequacy of temporary and diversionary works to minimise the effects of Storm and Flood, the positioning and stability of Hoisting Apparatus and the selection and implementation of Security Systems. Based on experience gained through Claims, Insurers can provide valuable input relative to loss potential on a large variety of situations and conditions.

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## **Risk Identification, Appraisal and Analysis**

It is assumed that the reader of this paper has access to suitably qualified Engineers of all disciplines and/or Surveyors and Commercial Evaluators with adequate knowledge and experience to undertake the activities hereinafter recommended. It is imperative that a "partnership" be entered into between Insurer and Customer to establish a joint RISK MANAGEMENT TEAM to Identify, Appraise and Evaluate

RISK FACTORS. Of course, the Risk Management Programme is not confined to those events that could result in Insurance Claims, but to all possible loss producing activities and events that may affect the successful, timeous and economic completion of the Construction Project.

In their (that is the Risk Management Team) deliberations over RISK FACTORS, the following should be taken into consideration:

Design, Plan and Specification  
Site Topography  
Construction Programme  
Prototype or Untried Features  
Competence of Design and Supervisory Engineers  
Competence of Contractors Supervisors and Artisans  
Competence, Experience and Qualification of Riggers  
Competence and Qualification of Crane Operators  
Design and Effectiveness of Temporary Works  
Natural Hazards  
Inflammable Materials  
Availability and Adequacy of On-Site and Public Fire Services  
Noxious Substances  
Storage Areas  
Site Accommodation  
Earthmoving Equipment  
Lifting Devices  
Construction Techniques  
Commissioning Programme and Methods  
Loss Control & Safety Manager(s) Qualifications  
Safety Controls  
Security Controls  
Potential for Pollution or Impairment of the Environment

Where the Insurance is to provide for Delayed Start-up [Advance Business Interruption (Profits)], additional factors need to be considered and evaluated relative to the Probable Period of Delay, based on:

Delivery Programme of Contract Works Materials  
Critical Path Programme  
Property that could cause Delayed Start-up  
Percentage Contribution of Property to Project  
Lead-time in reinstating damaged Property  
Alternative (if any) Working Arrangements  
Possible Expediting Methods - replacing Property  
Critical Spares and Component Parts to be held on Site  
Critical Replacement Parts and Components at Suppliers  
Other Loss Minimising Factors

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## **Perils Evaluation**

Once the Risk Factors have been identified, they should then be appraised and analysed in terms of the following Perils:

### **Geotechnic**

Supportive Capacity of the Ground  
Subsidence, Landslip and Collapse  
Rock-slide & Rock-fall

### **Hydrology**

Underground water  
Storm

Cyclone, Hurricane or Typhoon  
Flood  
Proximity to Ocean, Lakes, Dams, Rivers, etc

## **Fire**

Arson and Spontaneous Combustion  
Combustible Materials  
Fuel, Oil, Paint, Feedstock or Catalysts  
Proximity to adjacent Hazardous Premises  
Proximity to Forests, Bush and the Like

## **Explosion**

Steam  
Chemical  
Gas  
Feedstock and Catalysts

## **Electrical/Mechanical/Electronic Failure**

Faulty or Inappropriate Design or Specification  
Failure to follow Prescribed Methods  
Nullifying of Safety Devices or Controls  
Faulty Materials or Workmanship

## **Impact**

Hoisting Operations  
Vehicles  
Hazardous Practices

## **Environment**

Topography  
Theft and Malicious Damage  
Volcanic Activity  
Seismology  
Extremes of Temperature  
Natural Hazards Wind, Whirlwind, Tornado etc

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## **Risk Assessment and Quantification**

Having identified those Risk Factors with the highest potential incidence of occurrence and, those with the probable potential for disaster, the Risk Management Team should then quantify the financial implications applicable to each Risk Factor. The Financial Appraisal and Potential Cost Quantification can only be successfully achieved once all physical parameters relating to:

Risk Identification  
Risk Appraisal and Analysis  
Perils Evaluation

have been fully canvassed and appraised.

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## **Risk Control**

## **Risk Management Programme**

Appraising Transport Contractors  
Appraising Inland Transport Routes  
Evaluating Temporary Storage Premises  
Eliminating Hazardous Practices  
Ensuring Adequacy of Fire Fighting Apparatus  
Evaluating Quality Control Programme and Procedures  
Establishing Competency of Security Control  
Approval (with Professionals) of Contractual Payments

### **Loss Minimising Factors**

The Risk Management Team must identify and confirm the existence and availability of:

Priority Reserves at Manufacturers or Suppliers  
Spare Machinery or Parts on Site  
Alternative Suppliers

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### **Risk Financing Programme**

This is a Financial consideration, being directly linked to the Project Capital Expenditure Programme. It must be seen as a function of the Customer's Financial Advisors rather than an element of Risk Management. There may be a need to reserve funds (over and above Premium allocations) to cater for large Deductibles or to establish a Captive or to fund Aggregate Excesses. Where the Project Developer (our Client) elects to take advantage of lower Premiums based on substantial Deductibles, the level of such Deductibles may exceed the Contractor's Financial competence, the Project Developer may have to fund a portion of the Deductible. The Financial Advisors would base their recommendations on the Risk Analysis, but would not expect the Risk Managers to be involved in the Financial Decisions taken.

The Risk Financing options available to the Client are as follows:

#### **Self Funding**

Large Deductibles  
Aggregate Excesses  
Deductible Fund  
Minor Claim Fund with XOL Cover  
Captive

#### **Insurance**

Conventional (Deductibles of reasonable proportion)  
Catastrophe (Large Inner Deductible plus Aggregate)

Of course, the Client may elect a combination of Self-Funding and Insurance or any other permutation of protection.

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### **Insurance - Managing Risk**

It is incumbent upon the Underwriter to ensure that the following procedures and activities are strictly adhered to at appropriate times prior to the commencement of and during the Construction Programme:

Risk Appraisal  
Loss/Damage Avoidance and Minimisation Evaluation  
Calculation of Risk Exposure (Maximum Probable Loss)  
Appropriate Underwriting (Premium Rates & Policy Wordings)

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## **Conclusion**

Based on the loss history of Construction Insurance and the need to control our Risk Exposures, Insurers can no longer take a passive role in Risk Management, their role must now become active.

This role must be in "Partnership" with the Insured and also the Broker to establish a win/win situation for all parties. There must be benefit to each in participating in the Partnership.

The advantage to the Insurer is that they achieve:

Adequate Underwriting Information  
Risk Appreciation  
More accurate Underwriting Procedures  
Appropriate Acceptance Underwriting  
Customer Confidence and Trust  
Reinsurer Confidence and Support  
Broker Confidence and Support  
Risk Minimisation, thus Loss Control

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