

Risks Analysis

Under Construction and Engineering Contracts¹⁾

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Introduction

Statistics show that construction projects are often exposed to risks and hazards, arising either from purely contractual and legal problems or unforeseen circumstances or natural hazards. Often, contractors are faced with unexpected events, which were not calculated in the offer and the programme of works, leaving the contractor with unforeseen costs and losses.

A decision whether to calculate the risks or not in the offer is a matter of policy and market conditions. If the contractor calculates most of the risks and prices them, then most probably, he is out of the race. If he does not calculate and the risk is fatality, it will any way put the contractor out of business. The industry is well advised not to place all the risks on the contractors by drafting extremely one-sided contracts. To do so would ultimately keep away efficient and prudent contractors from tendering for projects, and would lead to higher tender prices.

Risks should not be ignored, and contractors are also well advised to evaluate during the tendering period the risks whether contractual, political, or social by preparing an appropriate contract and risks analysis as well as a local market study. They are advised to calculate certain risks, and allocate other risks to suppliers, subcontractors, and insurance policies.

As a first step, risks should be recognised and assessed. This is the route to an efficient management of risks. Once a risk is identified and assessed, decisions may be taken to transfer it or share it with other parties or accept it and manage it. The role of an experienced lawyer to identify contractual risks, prepare reservations to be

1) This is a revised version of a speech delivered by the writer during the Second German-Arab Economic Forum held on 25th June 1999 in Berlin.

submitted with the offer to the employer is vital, though may be disliked by many engineers and marketing managers who are too keen to secure a contract.

Definition: Risks may be defined as an event or a situation which probably occurs during the lifetime of a project or contract that has potential consequences of damage to property or environment, or personal injury, and/or financial loss or loss of time.

It is worthwhile to mention that not all the risks are real and severe. A risk has several aspects to consider:

First, how frequent it occurs and how far probable and immanent it is. Here, different rates can be given according to whether the risk is: certain, or very remote or fairly possible.

Secondly, how severe is the effect if the risk occurs. Is it within the margin calculated for overhead charges and usual contingencies, or is it manageable, or is it a serious loss and catastrophic?

In general, the risks and contingencies in any construction and engineering contract may be classified to:

a) **Risks which the contractor should bear.** They include:

- the risks which the contractor can control by good management and planning, or
- risks which the contractor may insure and calculate the costs in his offer, such as risks of personal injury, damage to equipment, and even political risks arising from acts of government, and
- risks which the contractor may pass to others, such as manufacturers and suppliers, for example design, workmanship and maintenance risks

b) **Risks and contingencies which the contractor should measure and attempt to shift to the employers,** such as risks of force majeure, war risks, risks of unforeseen conditions. One of the common contractual risks in contracts prepared by the lawyers of employers is to impose on the contractor a liability to pay penalties or liquidated damages without a ceiling or limit for delay in completing the works. Another contractual risk is to hold the contractor liable for

damage or injury arising from the contractor's default or negligence without any limitation.

Fortunately, employers are often inclined to negotiate those aspects of the contract. Therefore, contractors are advised to place reservations in their offers proposing a certain limit or ceiling for the liquidated damages or penalties for delay and another ceiling for the contractor's total liabilities.

Furthermore, an important aspect of risks management is through concluding the right insurance policies, especially in respect of risks which are common to occur or catastrophic when they occur. But, management of risks by insurance is a creative and difficult task, which requires a proper analysis of the conditions of the construction contract as well as the conditions of the insurance which are fully decorated with exclusions and exemptions.

THE RISKS

The risks analysis in this study is mainly based on the use of the FIDIC Conditions of Contract for Works of Civil Engineering Construction, 4th Edition. These Conditions of Contract are most widely used in international projects. Though FIDIC has issued new editions of the said conditions of contract, the risks outlined in this article remain valid to a large extent. It is necessary to recognise and manage such risks, even if the employer has accepted some of the risks under the new FIDIC conditions.

Many Middle Eastern countries such as Iraq, Egypt, Kuwait, Saudi Arabia and UAE, have issued standard General Conditions of Contracts which are used for government projects. Those standard General Conditions were generally based on the provisions of FIDIC, 4th edition. Thus, the risks analysis here is applicable to projects in the Middle East as well as other projects. It is also applicable to contracts using FIDIC standard form, and to a lesser extent to other forms of construction and engineering contracts. The writer was the chairman of the Committee, which revised and drafted the Iraqi General Conditions of Contract, which were based on the 4th edition of FIDIC General Conditions for Electrical and Mechanical Work, and the FIDIC General Conditions for Civil Construction Work.

By virtue of the provisions of the Iraqi Regulations no. 1 of 2008 for Execution of Government Contracts, Iraqi government entities are bound to announce tenders and conclude contracts based on the Iraqi Government Standard Conditions of Contract referred to here above.

Risks of construction and engineering projects are many, due to the number of the parties involved, differing tasks of the contractor, engineer, employer, subcontractor and the inherent nature of the works. The following is an outline of a list of risks and contingencies which contractors may face during execution of projects:

A. Adverse Physical Conditions or Obstructions

- Conditions of the ground water, and soil conditions
- Pipes and services, or even bombs left gracefully by someone somewhere in the land or water
- Wells, pits, shafts, boreholes, etc.
- Contaminated ground
- Fossils and antiquities

B. Delay and Disruption

- Due to late handing-over of the site by the employer
- Late working drawings, instructions, issued by the engineer
- contractor's inefficiency, breakdown, or lack of machinery and equipment
- Nominated sub-contractor's inefficiency
- Delay outside both parties' control
- Labour disputes

C. Defective Materials or Workmanship of Contractor

- Defective materials or workmanship of a domestic or nominated sub-contractor or supplier
- Costs of Tests and Samples required by the engineer

D. Direction and Supervision by the Employer or the Engineer

- One-sidedness of the employer or the engineer
- Incompetence
- Inefficiency

- Unreasonableness
- Lack of communication
- Ambiguity or contradiction between documents prepared by the engineer or misleading description in the bill of quantities etc.
- Dispute on Methods and Measurement
- Defective design of temporary or permanent works by owner or consultant, contractor or domestic or nominated sub-contractor or supplier

E. Damage and Injury to Persons and Property:

- Due to negligence or breach of warranty of contractor in designing or in temporary works, building permanent works or otherwise
- Due to negligence of consultant or owner in design or supervision
- Due to nominated subcontractor's or supplier's negligence or breach of warranty
- Due to matters outside the parties' control but which are insurable
- Due to uninsurable risks – war, riots, rebellion, etc.
- Consequential losses arising from above
- Exclusions, gaps and time limits in insurance cover

F. Shortage of Resources:

- Shortage of staff, labour, plant, materials
- Shortage of finance and liquidity

G. Government Policy and Change of Legislation

- Taxes, labour, safety or other laws
- Delay or refusal of planning approval for works or temporary works
- Foreign Exchange Restrictions
- Financial constraints by the Government
- Potential political instability

H. Conflicts and war:

- Cost of war, civil commotion, malicious damage, etc.

I. Labour Demands and Unrest:

J. Payment

- Devaluation
- Delay in settling claims and certifying
- Delay in paying certificates
- Legal limits on recovery of interest
- Insolvency of contractor, sub-contractor or owner
- Funding constraints
- Shortcomings resulting from the measurement and valuation process
- Governmental delay in payment and budget deficit

K. Inflation:

- Absence of an escalation clause in the Contract
- Any element of cost or profit not covered by a price fluctuation clause
- Replacement cost of plant and equipment – especially in countries where inflation is high such as Latin America

L. Arbitration and Law:

- Delay in resolving disputes
- Uncertainty of result due to lack of records, unfair or ambiguous contract, or inefficiency of legal process, and even lack of the due process of law
- Costs of arbitration and litigation
- Enforcement of the decision.

The foregoing list of risks and contingencies is not comprehensive. And as stated before, it is left to contractors and to the market conditions to see which of those risks should be calculated and added to the prices of the offer, and which risks should be covered by insurance, or shifted to the employer, if possible.

In fact, many international standard contracts have distributed the risks between the parties. Similarly, FIDIC Standard General Conditions of Contracts have allocated the risks between the contractor and the employer in a reasonable manner.

Many of the risks listed and referred to hereabove have been dealt with under different clauses of the FIDIC Conditions of Contract for Work of Civil Engineering Construction by granting the contractor a right to claim extra cost and/or extension of time and to cover costs and delay caused by encountering certain conditions or events.

The following is a short list of headings of clauses of the aforesaid FIDIC Conditions which allocate the risks between the employer and the contractor and entitle the contractor to claim compensation or extension of time:

- A. Risk of Design Discrepancies: Clause 5.2**
- B. Risk of Delay by Engineer: Clauses 6.4**
- C. Risk of Differing Site Conditions: Clauses 11 and 12**
- D. The Risk of Non-conformity of Works: Clause 13**
- E. The Risk of Damage to the work: Clauses 20, 21, and 22**
- F. The Risk of Third Party Injury or Property Damage: Clauses 22 and 23**
- G. The Risk of Delay: Clauses 41 through 44 and 46**
- H. The Allocation of “Special Risks” By Limitation of Liability: Clause 65**
- I. The risk of “Other Circumstances” and Frustration of the Contract:
Clause 66**
- J. Allocation of the Risks of Currency Restrictions and Rates of Exchange:
Clauses 71 and 72**
- K. The Risk of Changes in Costs and Legislation: Clause 70**

Time and space are not available in order to deal with the foregoing risks and the remedies provided by FIDIC. Therefore, I have chosen to deal in some details with the risks of site conditions and delay and disruption of works as examples of risks faced by contractors:

Adverse Ground or Physical Obstructions or Conditions on the Site

The contractor is exposed to considerable risks during the execution of the work by encountering unforeseen physical and site conditions or obstructions leading to delay of the works and extra costs.

Such risks frequently occur, although not always with severe effects, for example high ground water, underground rocks, underground pipes and crossings, mines etc. These risks become more real due to the fact that the employers/owners often do not undertake a full site investigation before announcing tenders.

Furthermore, in an attempt to deprive the contractor from the right to claim compensation for costs and time resulting from such risks, conditions of tenders often place an obligation upon tenderers to make site and soil investigations and fully inform themselves before the submission of their tenders.

This trend leads to higher tender prices, and often to awarding contract to less prudent contractors with lowest tender prices, which may prove later to be less qualified for the job.

Thus, employers and owners are well advised to make full soil and site investigations before tendering and accept the liability for the unexpected soil and site conditions. This will in the end cause the tenderers to lower their prices. This advice would apply to some other risks which the employers may be more capable to deal with.

Clause 12 of the FIDIC General Conditions for Civil Works, 4th edition, has attempted to allocate and distribute the risks between the contractor and the employer. This is one of the areas where claims are often submitted by the contractors and disputed by the employers.

Clause 12 stipulates that the contractor is required to have satisfied himself that his tender and rates and prices are correct and sufficient and that they cover contingencies and everything that the contractor has to do to complete the Contract.

This imposes a serious obligation on the contractor, especially if we consider that the tendering period is normally too short that a contractor cannot carry out such a proper site and market investigation.

How far such a provision is enforceable depends on the legal system and the judge adjudicating the case. In general, the criteria of reasonableness and practicality should apply in my opinion, and no contractor is expected to carry out an extensive ground and underground investigation during a short tendering period.

Fortunately, clause 12.2 continues and offers a partial remedy. If the contractor encounters physical obstructions or conditions (other than bad weather) which an experienced contractor could not have foreseen, he may give notice to the engineer.

Upon consultation with the employer and the contractor, the engineer may grant the contractor an extension of time and appropriate costs resulting from such physical obstructions or physical conditions which the contractor could not foresee.

Requirements for Application of Clause 12.2

In order to apply this clause and claim extension of time and costs under this clause, the contractor must prove three matters, namely, that

1. He has encountered physical obstruction or physical conditions apparently on Site, other than climatic conditions
2. These Conditions could not have been foreseen by an experienced contractor
3. They have caused him additional costs and delay

4. In addition to the above, the contractor must give notice of his intention to claim to the engineer within 28 days from the date of the event. He must also submit detailed particulars to the engineer within 28 days from the first notice.

The criterion of the site conditions being unforeseen by an experienced contractor is vague; therefore it is subject to different interpretations by judges and arbitrators.

Delay, Disruption of the Works

Delay and disruption of the works are the most frequent and common risks which contractors encounter. The reasons for delay and disruptions may be classified in three groups as follows:

- a) Events caused by the employer or the engineer or other contractors such as delay in handing over the site, or delay by employers, or by other contractors to complete the civil work, or delay by the engineer to issue or approve the drawings.
- b) Events caused by the contractor or by someone for whose act the contractor is responsible such as his subcontractor or supplier.
- c) Events or persons causing delay for which or for whom neither party is responsible such as weather conditions or natural events, or war or unexpected geological or ground conditions, as stated before.

Delays may cause the contractor to suffer a wide variety of loss or damages such as stand-by time costs, losses in productivity, increased cost by inflation and the disruption of the whole programme of the Works. In addition, he may have to pay the employer liquidated damages as may be stated in the Contract. The risk of paying liquidated damages becomes more serious if the Contract does not provide for a ceiling or a limit for the liquidated damages. The payment of liquidated damages for delay by the contractor is binding under many jurisdictions, if stipulated in the Contract, even if the employer suffers less loss or no loss at all.

Under certain circumstances the contractor may have the right to claim extension of time or claim extension of time and compensation for additional costs if the delay is caused by the employer or the engineer or by reasons for which neither the contractor nor the employer is responsible, such as under clauses 6.3, 42, 44 and clause 65 of the FIDIC Conditions, 4th edition.

In general, the contractor is in principle entitled to recover from the employer his costs on the basis of a breach of contract by the employer or under an express or implied term of the Contract. For example in cases of the failure of the employer to obtain in time land owners' permission to enter the site or delay in supply of materials by the employer, or delay by the engineer to issue the necessary drawings...

In such cases, where the delay is caused by the employer or his engineer, the employer has no right, unless otherwise stated in the Contract, to order the contractor to accelerate to make up for the lost time.

But where the delay is due to contractor's default, then the contractor has a duty to mitigate the delay by taking reasonable measures including acceleration, and he is not entitled to choose to be late and pay liquidated damages.

FIDIC Conditions of Contract provides contractors with a number of possibilities to claim extension of time and/or compensation.

Extension of Time, Clause 44 of FIDIC, 4th Edition:

Clause 44.1 stipulates five reasons upon which the contractor may claim extension of time. But it is left to the engineer to evaluate the reason for delay and the effect on the progress of the work. He is expected to act impartially and in a fair manner, but in practice he may be reluctant to admit that he has himself caused the delay, for instance in granting approvals or providing the necessary drawings.

These reasons are:

1. Extra or additional work, including variations under clause 51
2. Any cause of delay referred to in the FIDIC Conditions such as delay in possession of the site, clause 42

3. Exceptional adverse climatic conditions, as in clause 12
4. Any delay, impediment or prevention by the employer. This is a new provision which appears in the FIDIC fourth edition.
5. Other special circumstances which may occur other than through a default or breach of Contract by the contractor, such as special risks under clause 65.

Special circumstances are not defined and may lead to many disputes. There is a tendency to interpret special circumstances as circumstances of force majeure which could not have been expected by the contractor, such as war or riots or damage of a drilling rig, or shortage of fuel.

The contractor, in order to exercise his rights to claim extension of time under clause 44.1, must follow the procedures and keep the time limits as laid down in clauses 44.2 and 44.3.

Compensation for Extension of Time:

It is worthwhile to notice that clause 44 provides the contractor with a right to claim extension of time only, and the contractor has no right under this clause to claim additional cost unless he can justify his claim under another provision of the contract or under the general law.

In fact there is no general clause in the FIDIC Conditions, 4th edition, which deals in a comprehensive manner with the right of the contractor to compensation in case of delay.

Nevertheless, a number of clauses can be identified which provide the contractor with a right to claim costs or extra payment for delay as stipulated under the following clauses:

- Clause 6.4, Cost of delay by the engineer in issuing drawings
- Clause 40.2, Cost of suspension of work by the engineer
- Clause 42.2, Cost of delay by the employer in handing over the site
- Clause 12.2, Cost resulting from adverse physical conditions or obstructions.

As we have seen, the risks in construction contracts are many but it is only by risking ourselves from one hour to another that we live at all.

N.B. The writer, in preparing this article, has particularly relied on the following references among other references:

- Dr. Nael G. Bunni, *The FIDIC Form of Contract, Second Edition*, Blackwell Science.
- Philip Bruner, *Allocation of Risks in International Construction...*, *International Construction Law Review*, Vol. 3, Part 3, April 1986
- Max Abrahamson, *Risk Management*, *International Construction Law Review*, Vol. 1, April 1984
- Keith Pickavance, *Delay and Disruption in Construction Contracts*, LLP, 1997