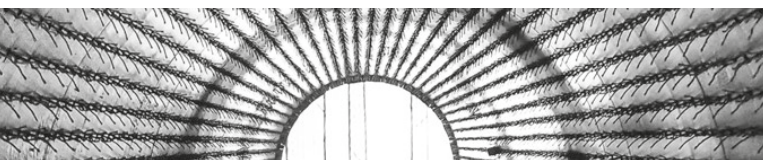


Construction Risks

In the second series of BRG's Understanding Infrastructure Disputes papers, our damages, construction, and energy and resources experts identify risks that can arise during projects from financing through construction to operations, how those risks can best be managed and their potential impact on disputes down the line.

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Risks Arising During the Construction Phase of Projects

Infrastructure projects typically involve many stakeholders, high costs and long timeframes. They can be extremely complex and subject to a high level of spatiotemporal (existing in both space and time), technological, political and economic uncertainties—and are therefore exposed to numerous risks.

Risk has many definitions; however, it can be broadly defined as “an uncertain event or circumstance that, if it occurs, will affect the outcome of a programme/project.”¹ A risk can also have a positive outcome, for example, a change in policy that could benefit a project or the release of a new technology that could save time and money.

Since infrastructure projects impact the public, their failure or poor performance can have significant social costs and a negative impact on the local economy. Consequently, proactive, dynamic and competent risk management is essential to avoid and/or mitigate project delays, cost overruns and safety issues, in addition to managing stakeholders’ expectations, while taking advantage of new opportunities that may arise during the course of the project.

Risks Prevalent During the Construction Phase

Today’s market—characterised by globalisation, innovation and regulatory requirements—requires better risk management. As supply chains become longer and more complex, infrastructure projects become more vulnerable to external disruptions. This increased vulnerability was highlighted recently by the Suez Canal blockage, which had a cascading disruptive effect on global supply chains; and the ongoing war in Ukraine, which is impacting the cost of critical materials, for example, leading to steel, iron, nickel, chemical products, timber and energy price shortages and increases. The complexity of infrastructure projects necessitates multidisciplinary technical tasks and numerous contractor interdependencies, thereby increasing the risk of a possible series of domino-effect failures within the project.

Such interdependency and uncertainty requires a shift from a reactive approach of traditional risk management, based on a silo consideration of risks, to holistic proactive management. Risks affecting a project should be overseen, reported and considered in a portfolio approach.

Key risks impacting the construction phase include:

- Technical risks: ambiguity in technical methods, conflicting norms and standards, incomplete design, changes to and lack of experience with technology, errors and omissions
- Organisational and project management risks: conflicting stakeholder priorities, contract problems, lack of managerial skills, productivity issues, shortage of skilled labour, delays in deliveries, subcontractor defaults, human error
- Environmental risks: site conditions, climate change, earthquakes, pandemics, natural disasters
- Financial and economic risks: resource price fluctuation, fluctuation in currency exchange rates, change in tax structure
- Sociopolitical and legal risks: adverse public attitude, corruption and bribery, requirements for new permits and licences, changes in law, regulation and the general political landscape, including the risk of expropriation
- Other risks: logistical risks, war and physical risks

¹ Royal Institution of Chartered Surveyors, RICS professional guidance, Management of Risk, 1st Edition [2015], Section 2.1.1, p. 4.



Management of Risks

The likelihood and impact of risks vary over time, and plans need to be constantly reviewed and updated to address this fluid situation. Risk management techniques provide a structured approach to the management of risk. Given the intangible value creation of risk management, it does not get much recognition when done correctly. However, when a project fails or is failing, the adequacy of the risk management techniques employed often comes to the fore and is questioned.

Risk management occurs at different stages of the project's life cycle, from concept to maintenance. Broadly, it involves four main stages:²

- (1) Risk identification: Risks are identified by working collaboratively with project stakeholders to identify what could go wrong. The degree of foreseeability of factors of risk will vary and evolve over time. Risk identification is an ongoing process that starts early in the project's life cycle and is continuously updated throughout the duration of the project. This now includes consideration of pandemic- or climate-related risks.
- (2) Risk analysis: Assessment and analysis, whether qualitative or quantitative, enable the project team to evaluate the magnitude and seriousness of, and prioritise, each identified risk.
- (3) Risk management: This stage includes the exploration of appropriate response strategies for each identified risk, including transfer, buffering, avoidance, control and elimination.
- (4) Risk monitoring and auditing: Subsequent monitoring, auditing and updating is key to keeping the identification and management of risks current.

The above stages allow for a more informed allocation of the project risks among the parties, aligned with the project's objectives, with risks allocated to the parties best able to control and manage them.

Risk allocation will be reflected in the various contracts entered into on an infrastructure project, defining the roles and responsibilities for the risks. This will affect the potential for disputes.

An incomplete or unclear allocation of risks in contracts among the various parties involved can be a key factor causing disputes.

²Ibid.



Typical Disputes and Causes

Assessing project risks is a challenge. It is impossible to foresee all project risks, and not all risks can be insured against. Risks that are not avoided or mitigated can impact the economics of projects and possibly lead to their complete failure. And, as we have noted, the allocation of risks can lead to disputes among the project parties.

The risks previously described frequently result in delays and cost overruns, thereby causing the impacted party to seek relief or compensation. Quality and/or lack of conformity with the project specifications also can be at the heart of disputes related to the construction phase. Further, changes in scope that may have led or contributed to the time, cost or quality issues in dispute will add to the complexity, as they may affect the risk allocation agreed in contracts.

In disputes, the applicable legal standards and the terms of the relevant contracts will provide a framework as to what the parties may be entitled to, but these may be subject to conflicting interpretation.

Technical, delay and quantum experts are regularly appointed to help parties assess the issues that arise and resolve disputes. Detailed evidence will be required to support the parties' arguments and experts' objective assessments. This includes a robust review of the risks borne by the parties as set out in the respective contracts.

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