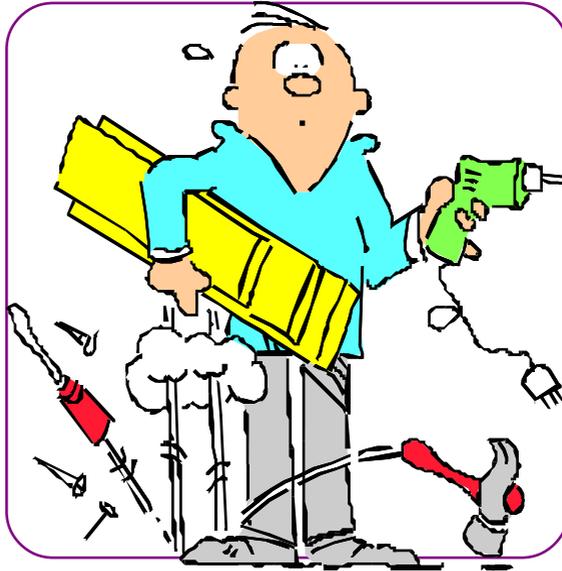


A simple guide to controlling risk



*sharing knowledge
building best practice*

6 Storey's Gate
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Summary

All construction projects contain risks – these may be commercial risks (partners going bankrupt, payments not coming through on time), safety risks (to workers on site or the general public), environmental risks (pollution of nearby streams or lakes) or procedural risks (planning permission not being granted when expected, noise complaints from neighbours) and so on.

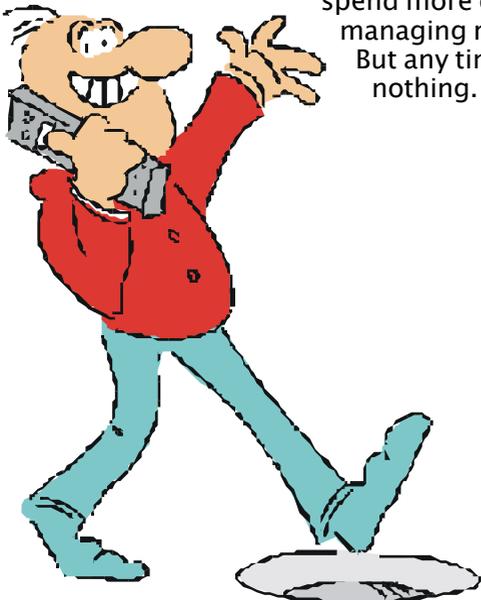
Each risk could have an impact on the project, or your business as a whole and only a few of them will be directly attributable to things you have or have not done. You can ignore them, but they won't go away!

The easiest way to make sure you are not caught by surprise is to manage the risks. This booklet gives you an introduction to how to do this. It is aimed specifically at smaller construction companies.

The result should be that you save money (or lose less!) and reduce the number of accidents, reduce or eliminate the likelihood of litigation – the time and effort you spend in risk management should be handsomely repaid.

Risk management has some scientific aspects, but will also rely heavily on your judgement, and depending on the type of organisation you work for (risk taking, risk neutral or risk averse), you may spend more or less time than others in managing risks.

But any time spent will be better than doing nothing.



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Glossary

hazard	Something with the potential to cause harm (to a person, a project, a business)
mitigation	Measures put in place to avoid a hazard or to reduce the impact of a risk or to control the effects of a risk
risk	A combination of the chance of an adverse event occurring (its likelihood) and the impact it will have (its consequence)
risk assessment	The process of identifying hazards, evaluating the risks arising from them and communicating these to people who need to know
risk management	The combination of risk assessment, mitigation and periodic review
risk register	A document used to record the results of risk assessment, mitigation measures required and who will be responsible for putting these in place. The register can be circulated, to communicate risks around the team

1 An introduction to risk management



Risk management is something we all do every day – in deciding whether to cross the road, or to take a particular route home, or to invest in a particular financial institution.

But, the risk management we apply to our own lives is usually instinctive, managed by our judgement and experience.

This booklet is about systematic risk management – that is, describing risks formally, focusing on major risks, making informed decisions, minimising potential damage and controlling uncertainties. It is also about identifying opportunities for you to improve your business.

“No construction project is risk free. Risk can be managed, minimised, shared, transferred or accepted. It cannot be ignored.”

Sir Michael Latham, 1994

Note: Although risk can be transferred, legal duties and responsibilities cannot.

Although you can never remove all the uncertainties from your business or the projects you are involved in, systematic risk management will improve the chances of your projects being completed on time and within budget. But if your firm is a member of a team delivering a project, then risk management needs to be part of the whole team’s approach.

What is risk?

Risk has two elements

The likelihood of an unwanted event

The consequences of it happening

The likelihood and consequence of an event are combined to indicate the severity of a risk. The examples in the table below are not construction related but illustrate these concepts. Likelihood and consequence are estimated using assessment scales – See toolbox 4 on page 28.

Consequence	High	A hurricane striking South East England	A soldier being killed or injured on active service in WW1
	Low	Running out of petrol within sight of a petrol station	Being held in a queue when phoning a customer care department
		Low	High



Where does risk come from?

There are many sources of risk in construction – some are related to market or global conditions, others are related to specific projects or activities.

The table below gives some possibilities, but you may be able to think of others:

Category	Change and uncertainty in or due to:
Political	Government policy, public opinion, legislation, disorder
Environmental	Contaminated land liability, nuisance, permissions
Planning	Requirements of planning permission, land use policy
Market	Demand for work, competition (from home and abroad)
Economic/ Financial	Taxation, interest rates, inflation, exchange rates Solvency, margins, insurance
Natural	Ground conditions, weather, explosion, archaeological discovery
Project	Client's objectives, procurement route, programme, labour
Human	Incompetence, ignorance, error
Criminal	Lack of security, vandalism, theft, corruption
Safety	Regulatory requirements, health effects of working methods, hazardous substances

How is risk measured?

The components of risk are measured separately:

Likelihood is often measured in terms of the number of adverse occurrences expected in a year, but may also be measured in other ways (eg defects in steel bar may be per kilometre of bar produced).

Consequence is usually measured in monetary terms (the cost to put things right), but may also be measured in terms of time delay, or the severity of an accident (serious injury or fatality).

If values can be given to both the likelihood and the consequence, these are multiplied together to give a risk score:

Risk = likelihood x consequence

In order to manage risks, it is NOT necessary to give detailed figures for the likelihood and consequence of each risk – approximate scales can be used, perhaps based on a judgement of High / Medium / Low, or you can take one particular risk as a baseline, and measure everything else relative to that.

In order to estimate a “consequence” value, you must take account of all the costs involved in a risk – this includes obvious costs like replacement materials, labour costs, direct effect of any delay on the project completion, but also less obvious costs like time spent investigating the occurrence, claims by other parties, legal costs if legal action is involved, loss of corporate prestige, and so on.

Research by the Health and Safety Executive concluded that the uninsured costs associated with an accident were 11 times greater than the insured costs, which could be recovered from insurers.

Risk vs opportunity

Risk and opportunity go hand in hand. Measures taken to control a risk may have a beneficial effect on another aspect of the work. For example

You may decide to install a personnel hoist instead of ladders on a site to reduce the risk of workers falling. However, the hoist may also improve workers' productivity, by enabling them to get up to the floor they are working on more quickly.

The lesson is not to look at risk control measures just as extra costs – there are usually benefits as well.

What kind of organisation is yours?

Risk taking

Your organisation has a policy of taking risks, in the way it does business and in the people it deals with. When things go right, you reap larger than average rewards. But if things go wrong, you could also lose a lot of money!

Risk neutral

Your organisation takes an average number of risks in its business.

Risk averse

Your organisation deliberately goes out of its way to avoid risks, even if this means smaller but more consistent financial rewards.

