

# PROJECT RISK MANAGEMENT

MANAGING THE RISKS IN MAJOR PROJECTS  
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# PROJECT RISK MANAGEMENT

## THE DEPARTMENT OF RISK AND SAFETY SPECIALIZES IN IDENTIFYING THE RISK PROFILE IN MAJOR PROJECTS IN ORDER TO MITIGATE THE RISK

Major projects will always be associated with risks. Different technologies, construction methods and technical implementations may, however, have significantly different risk profiles. The risk during the planning, design, construction and implementation phase should be taken into account as an important factor when evaluating, optimising and recommending project organisation, tender strategies, technologies, methods and technical implementations.

### Identification of risks

The evaluation and management of risks during all phases includes a systematic identification and assessment of risks:

- Quality – project not meeting its objectives
- Project delays
- Additional costs
- Human safety
- Environmental impact

The aim of the risk assessment can in short be expressed as “Identify, assess and reduce”. An identification of the overall hazards is followed by an estimation

of potential consequences and expected frequencies. On this basis the need of risk reducing measures is assessed.

Risk Management and risk assessment will serve as a systematic approach for risk identification in the entire project, and it will put aspects associated with risk on the agenda throughout the project organisation.

Furthermore, the approach will highlight the risks for project management, and clearly identify who is taking what risk, and in case the risk is not acceptable, set-up a plan for reducing the risk.

### Ramboll toolbox

Ramboll has developed a database system to assist in the risk management process and to generate overviews of the current risk status. The tool keeps track of the status of identified risks and risk reducing measures.

The database has a variability of risk control facilities: keeping track of responsibilities and actions,

generating risk matrices as a basis for estimating probabilities for project delays or additional cost, presenting plans for risk reduction, giving documentation for what has been accepted and by who, etc.

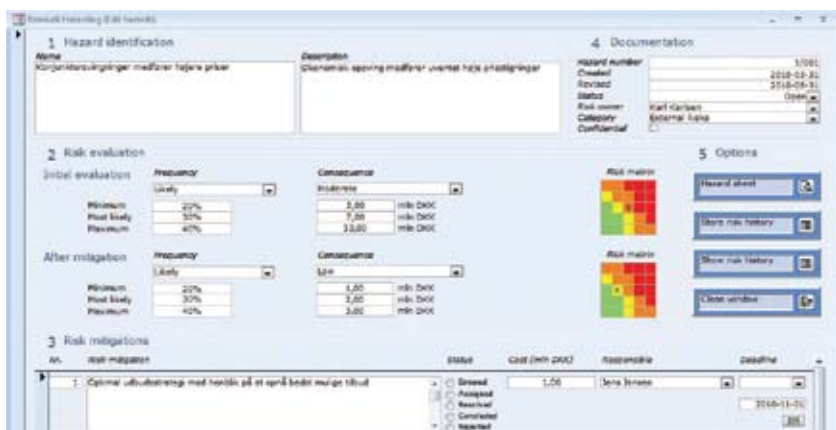
### RiskSim application

For presentation of risk targets and associated uncertainties in input parameters and resulting risk, Ramboll has developed the application ‘RiskSim’ based on Monte Carlo simulation. RiskSim provides project risk profiles for delays, project cost, NPV-values etc. including sensitivity analyses and easily interfaces with e.g. Excel spreadsheets and MS-project.

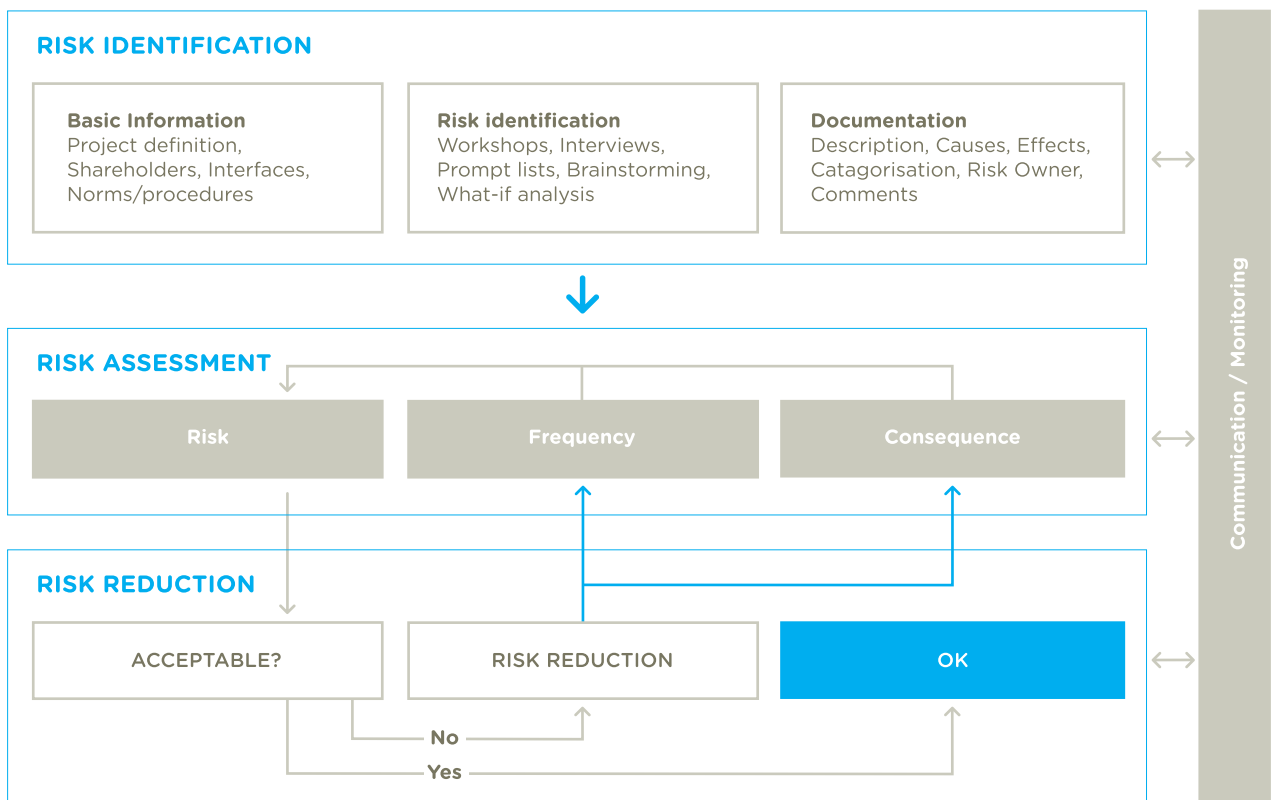
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Entry window from the Ramboll database system for entering and updating risk documentation.



Mapping Risk Management - a general approach



#### WHO WE ARE

The Risk and Safety department in Ramboll is one of the leading proponents of risk analysis. The references cover a broad range from the development and implementation of overall risk management systems to minor analyses.

The Ramboll group employs 9.000 ambitious experts. We are a leading knowledge-based company operating in a broad international context from close to 200 offices around the world. We provide engineering, consultancy, project development and operating services within the areas of: Buildings and Design, Infrastructure and Transport, Energy & Climate, Environment & Nature, Industry & Oil/Gas, IT & Telecom, Management & Society.

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