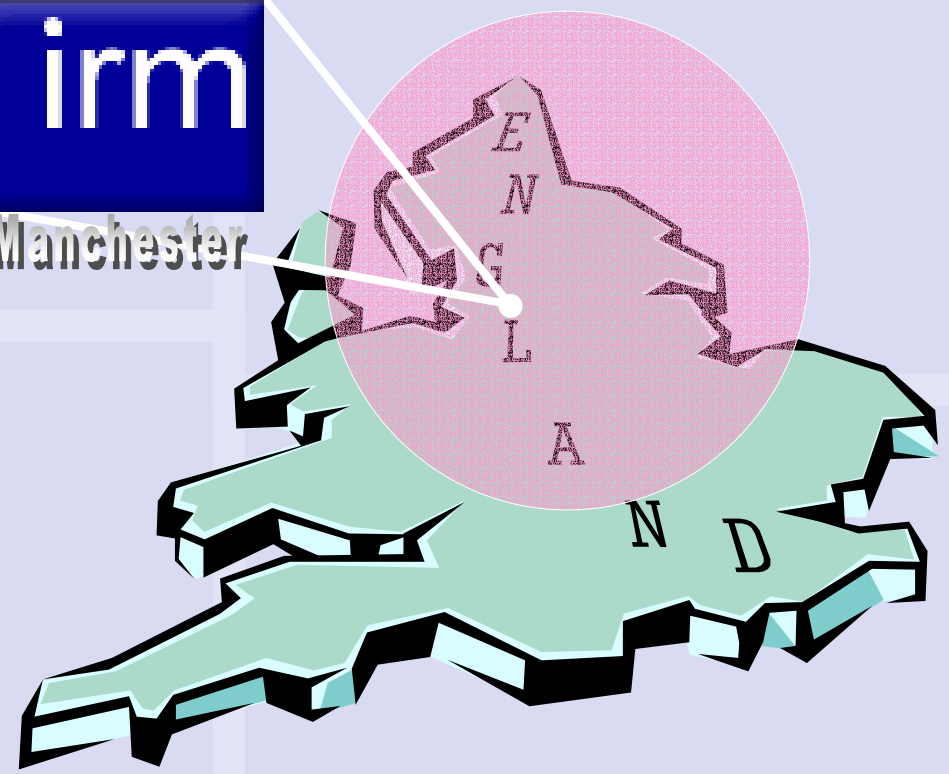
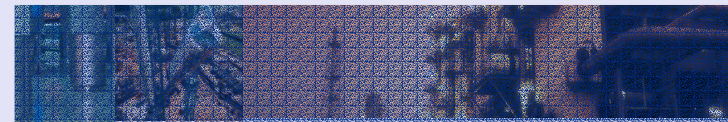


# Emergent Risks



PRESENTERS :  
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## Definition of Emergent Risks

- Emergent project risks are those that have not yet occurred but are at an early stage of becoming known and / or coming into being and expected to grow greatly in significance.
- They do not have the 'track record' of other better known, non-emergent, risks and usually arise in the longer term.

TITANIC



TWIN TOWERS 911

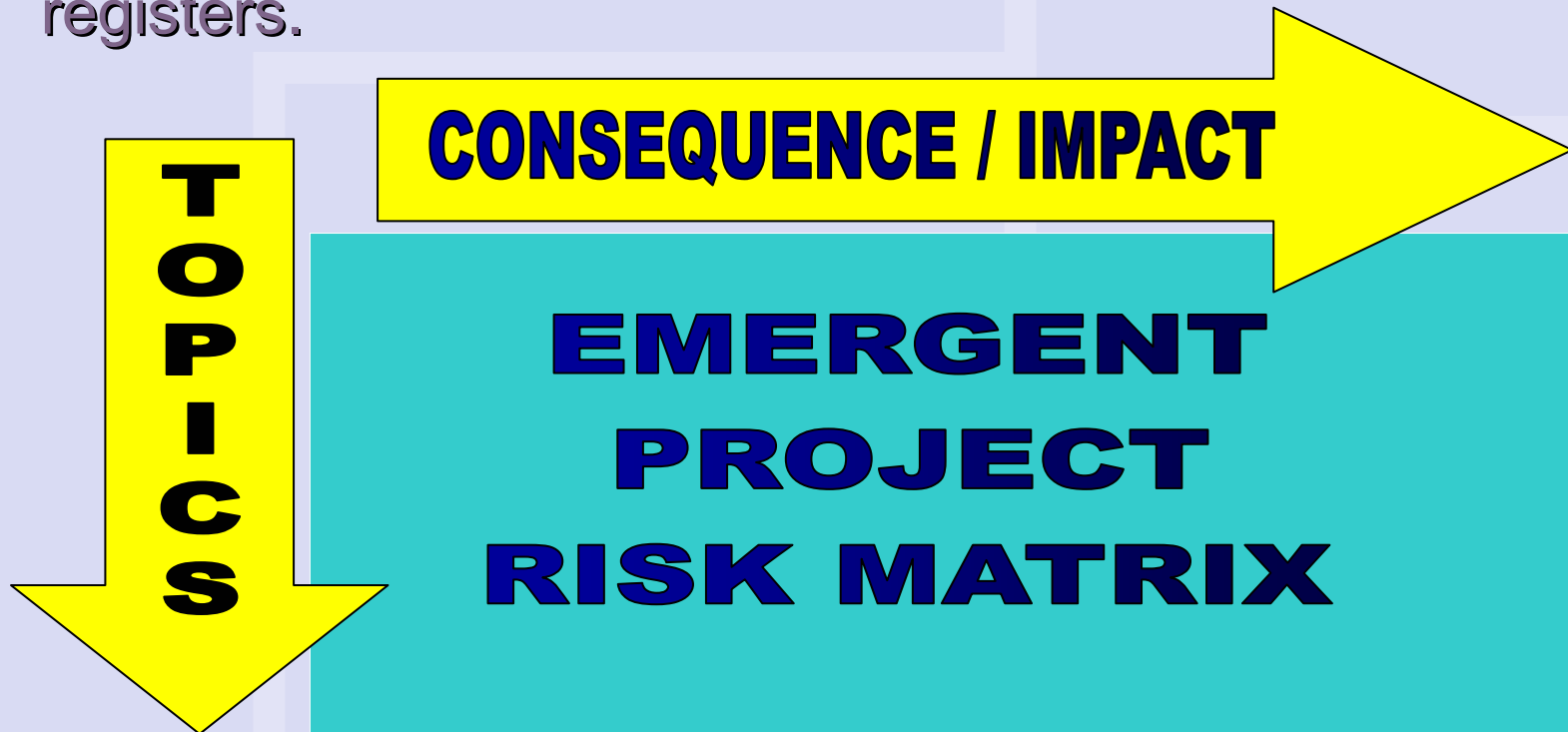


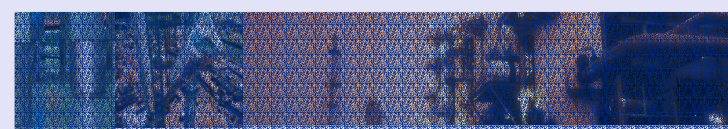
SAN FRANCISCO EARTHQUAKE



## Emergent Risks Matrix – Definition of Terms

- The sections below attempt to define the meaning of the terms used in the topic and consequence/impact lists used as an aid in defining emergent project risk registers.





## TOPICS

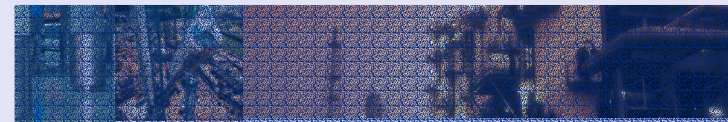


- Political
  - Related to changes in political policy (e.g. due to a change of Government) or to actions of the political authorities.
- Legal
  - Risks arising from legal action or decisions made by the Courts. Examples are limitations on what can be done or financial penalties including damages and compensation.
- Regulatory
  - Actions and limitations by the regulatory authorities. Regulatory authorities include not only those covering a given industry but also more general authorities such as those responsible for health and safety, the environment and construction planning.

## TOPICS

- Direct Public Pressure
  - Direct action by the large numbers of the public (e.g. by boycott or other acts) or by pressure groups (e.g. those based on local concerns or those having a specific agenda). It excludes cases where direct pressure results in action through the political, legal or regulatory processes.
- Security
  - This covers risks occurring from actions needed to ensure security in the short term in response to specific events or threats and in the long term from the general security risks in society. It also covers the risk of breaches or failures in security such as terrorist attacks.





## TOPICS

- Criminal Activity Early mitigation
  - This covers all forms of criminal activity. Examples are violence, sabotage and fraud.
- Technology
  - Changes due to the effects of new technical developments that feed through into changes that affect the project. These may be based on new scientific discoveries or on further implementation of existing knowledge.
- Engineering
  - Risk from the application of engineering to a project including any failures or improvements in current or planned work. Engineering failure may occur due to factors that cannot be reasonably anticipated.

# TOPICS

- Requirements
  - This covers the risk that a project completed according to a defined specification may not meet the required need. This can result in a shortage of required facilities or low use because they are not suitable. Examples are a specification that has been in error or needs that have changed either during the project construction period or afterwards during its lifetime.
- Environmental
  - Risks due to any environmental factors. These include climate change, weather, natural conditions, natural disaster, disease and contamination. They include the effects of changes to the environment due to human activity.



# TOPICS

- Financial and Economic

- This covers risks due to the finance of the project or the economic circumstances (local, national or international) surrounding it. Examples are under or overspend, failure of finance and severe over or underestimation of commercial markets.
- It should be noted that all risks to a project are likely to have financial consequences, many of them major. This topic is not meant to cover the all risks but only those of a financial nature.

- Knowledge

- Risks arising from a lack of knowledge. This may occur for a number of reasons including loss of records, gaps in existing knowledge and insufficient knowledge of those involved or related to the project.



# TOPICS

- Culture

- This covers risks that may occur due to the culture within the project or related organisations. It covers the general attitudes that exist that affect the approach of an organisation to any work or project it undertakes. The culture of an organisation could have either positive or negative effects on the progress and successful completion of a project.

- Human Factors

- These risks arise due to the actions of people. They can come from the action of a large number of people (e.g. a major strike) or from one or a very few individuals (e.g. unauthorised trading, concealment of important information).



## CONSEQUENCES / IMPACTS



**CONSEQUENCE /  
IMPACT**

- Delay
  - This covers the delay in a project due to the occurrence of a risk. It may range from a short period to extended delay
- Refusal to Proceed
  - This covers risks resulting in a project or part of a project not being allowed to proceed. This will either result in the project being stopped or some alternative approach being adopted to proceed to the project intentions.
- Change Limits
  - These consequences arise from changes in the limits or boundaries applying to all or particular aspects of a project. They occur in a wide variety of areas including health and safety, allowable discharge or contamination levels and acceptable boundaries in financial services. They are most likely to arise from a change in regulation.

# CONSEQUENCES / IMPACTS



**CONSEQUENCE /  
IMPACT**

- **Disaster**
  - Disastrous failure resulting from a risk occurrence resulting in major consequences for the project.
- **Operational Failure**
  - Failure in the operation of the project leading to underperformance and failure to meet objectives. This may range from minor to major significance. Projects may also operate better than planned leading to an opportunity.
- **Lifetime Failure**
  - Failure of the project to operate for its expected lifetime. This may be due to early termination of a project that is capable of continued operation or failure of the project to operate for the expected time due to replacement by an alternative or because of poor results. Projects may also operate in excess of their expected lifetime providing an opportunity.

# CONSEQUENCES / IMPACTS

- Finance/Commercial

- Financial and commercial consequences of project risks. These may be positive or negative. It should be noted that most or all risks to a project are likely to have financial consequences, many of them major.



**CONSEQUENCE /  
IMPACT**

# Some Emergent Risks in 3 Major Industries

## 1. Hospital Construction



**HOSPITAL EXAMPLES  
EMERGENT RISKS MATRIX**

# Some Emergent Risks in 3 Major Industries

## 2. Nuclear Decommissioning



**NUCLEAR EXAMPLES  
EMERGENT RISKS MATRIX**

# Some Emergent Risks in 3 Major Industries

## 3. Petrochemicals



**PETROCHEMICAL EXAMPLES  
EMERGENT RISKS MATRIX**

IRM

Any Questions?

