

Benefiting from Sharing Lessons Learned

Paul Mc Nulty
Structural-Safety

Structures in Fire Forum

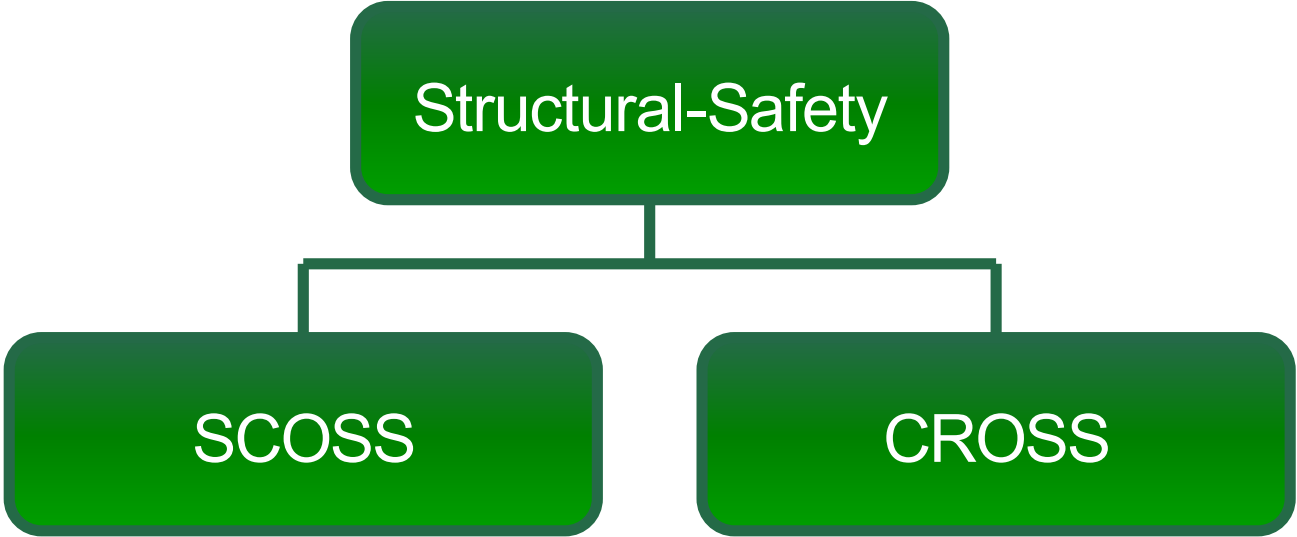
April 2018



structsafe



Structural-Safety



SCOSS

Standing Committee on Structural Safety

“Maintain a continuing review of building and civil engineering matters affecting the safety of structures”



SCOSS Alerts



Fire in Multi-Storey Car Parks - Feb 2018



Stability of steel frame buildings - Feb 2017



Construction of Edinburgh Schools - Feb 2017



Sudden loss of ground support - July 2017

Liverpool Echo Arena Car Park Fire - December 2017



Liverpool Echo Arena Car Park Fire - December 2017



Liquid fuel fire

1,400 cars destroyed



Liverpool Echo Arena Car Park Fire - December 2017

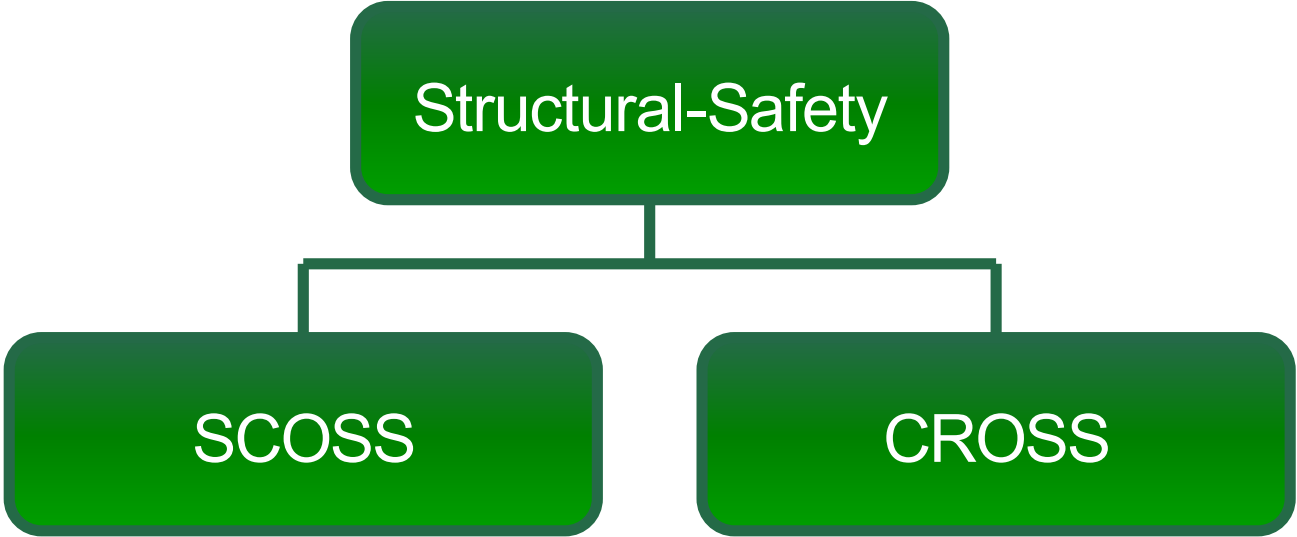


Elios Collision Tolerant Drone



SCOSS Alert - Fire in Multi-Storey Car Parks

- The fire & the structure
- Research on car park fires - BRE report in 2010
- Advice for assessment of existing MSCPs
- Advice for design of new MSCPs
- Sprinklers - National Fire Chiefs Council advice



CROSS

Confidential Reporting on Structural Safety

“Captures and shares lessons learned which might not otherwise have had formal recognition”



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CROSS Report 689 Fire safety risks during technical due diligence survey

- Reporter was appointed by a client to carry out a technical due diligence survey as part of a building acquisition
- During the survey, numerous and serious fire safety risks were observed:
 - Fire exits deliberately barred with wooden or metal poles
 - Missing / damaged / poorly maintained fire extinguishers
 - Blocked fire escape routes full of rubbish
 - Fire alarm system in error mode
- Client stated that the authorities should not be notified as this could put the purchase deal in jeopardy
- Reporting the matter to the authorities would directly contradict the instruction of a client (breach of contract)
- Client asked that the matter should not be referred to in the due diligence report
- How would this reflect on the reporting engineer if an incident were to occur in the future, had they not ensured that their client had taken appropriate action?

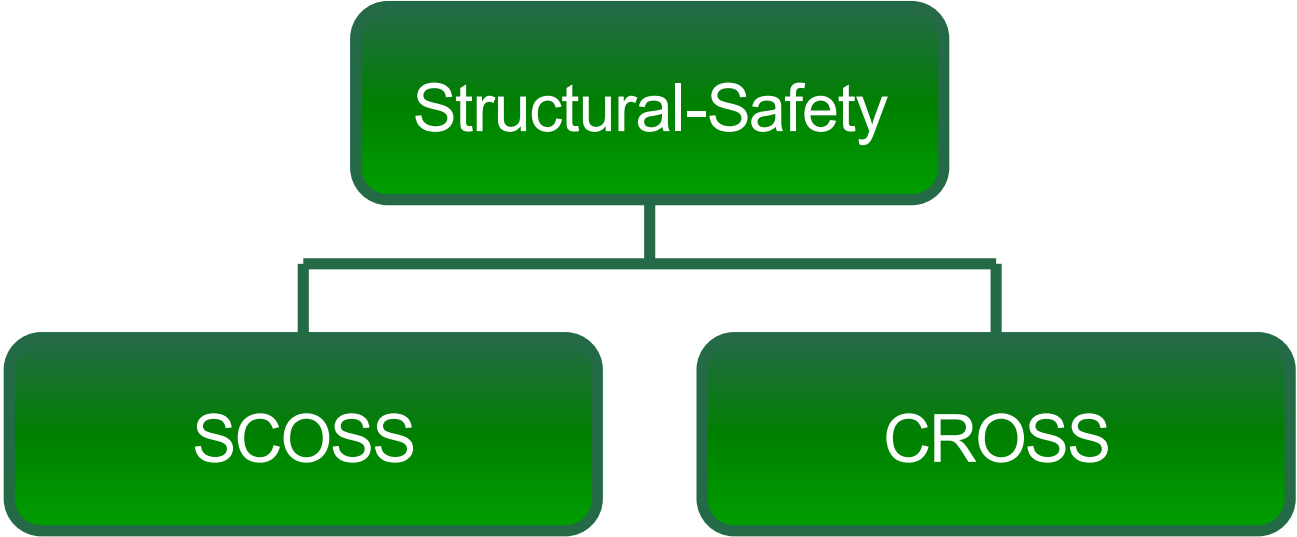
CROSS Report 689 Fire safety risks during technical due diligence survey

Comments from CROSS Panel

- The defects discovered were dangerous and illegal
- It would be unethical and irresponsible not to report them, but two questions arise:
 1. Is the duty of care adequately satisfied by reporting only to the client?
 2. Do the professional responsibilities of an Engineer take precedence over the instructions of the client?
- Ultimate responsibility is to the safety of those affected, and direct contact with the authorities by the Engineer may be the only way to achieve this
- The IStructE Code of Conduct includes the statements:

“Members should have regard to the public interest”

“Members should not disclose the contents of a report to third parties, without the client’s express permission”
- These principles can appear to conflict with one another - may need to seek legal advice
- It is to be hoped that in the event of a dispute, the courts would protect the Reporter's firm if they were to act in a manner to protect public safety



Pyramid of Risk

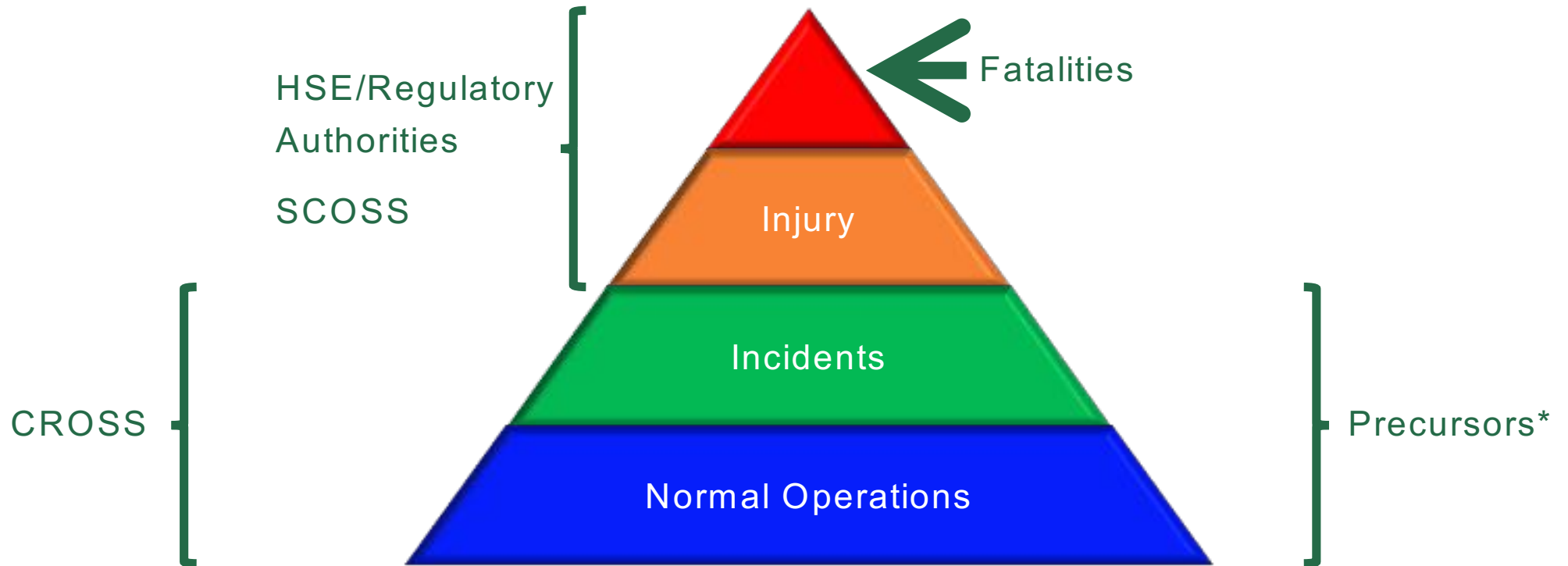


Diagram courtesy of ASRS

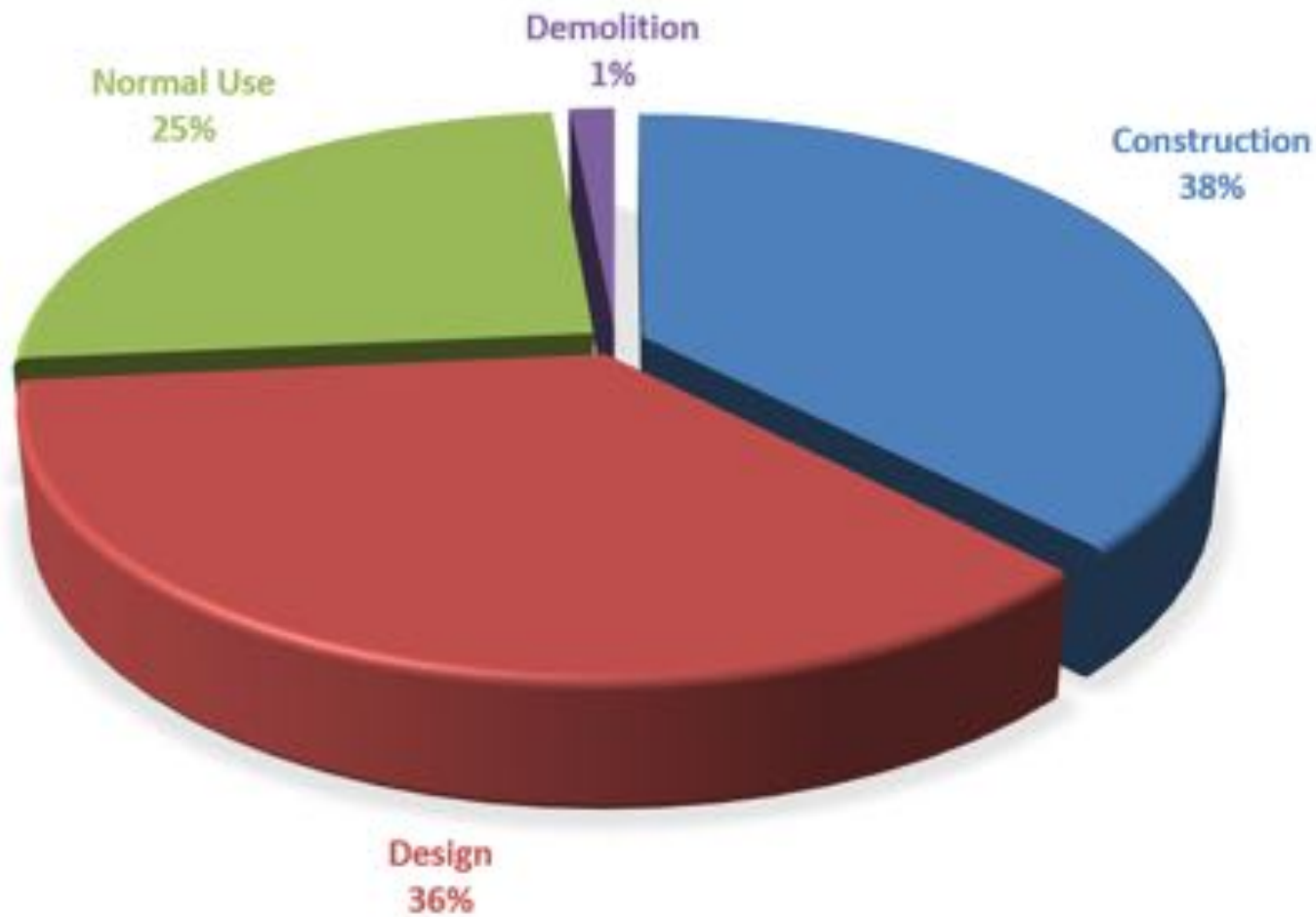
* Precursors should be reported internally and can be reported to CROSS

SCOSS Committee (10) & CROSS Panel (14) Representatives

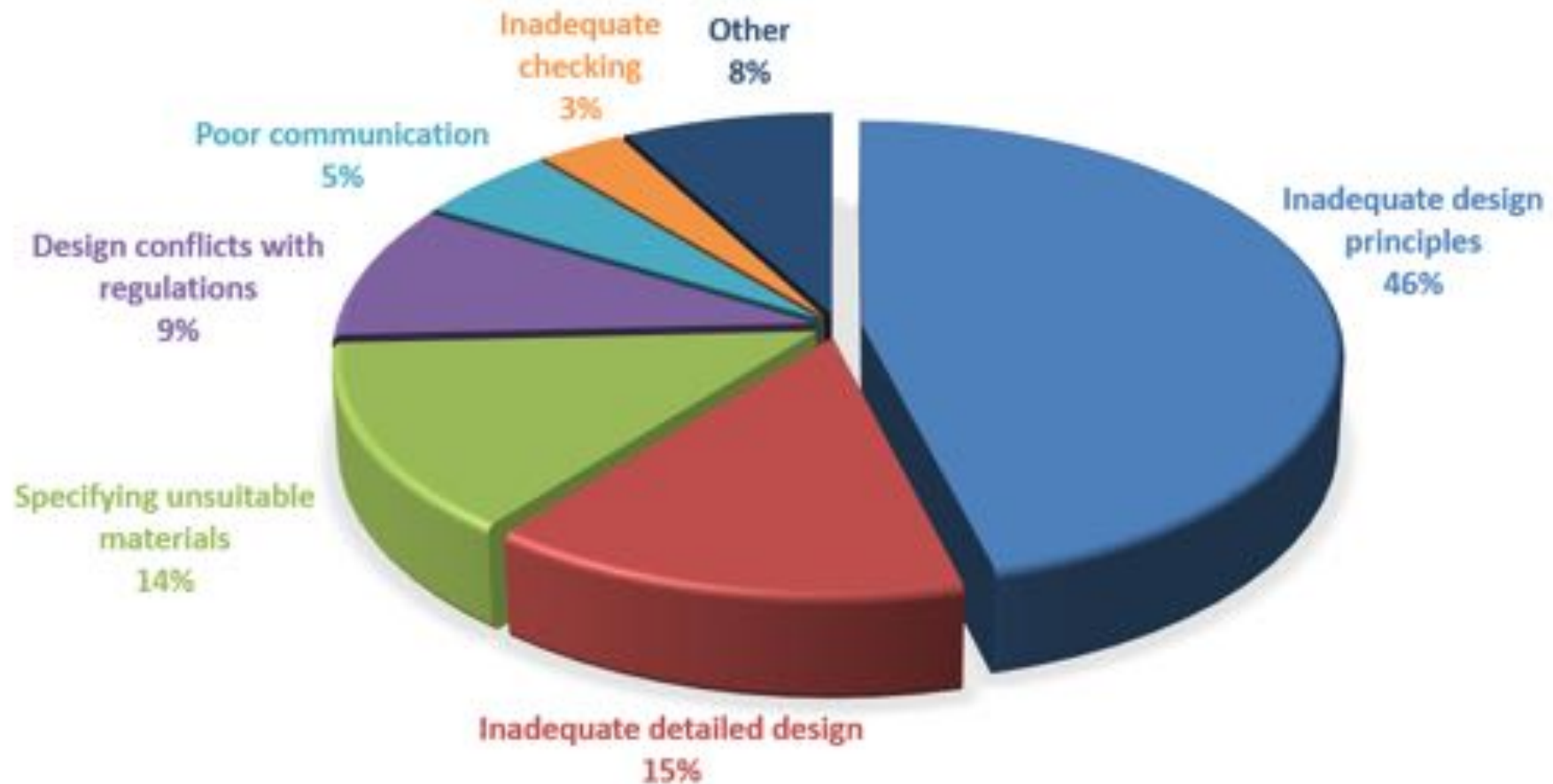
- Consulting engineers
- Contractors
- Fire engineer
- MHCLG (Government)
- Health and Safety Executive
- Highways England
- Network Rail
- Local authorities
- Warranty provider
- Legal advisor
- Young engineers

Members selected for
their personal qualities

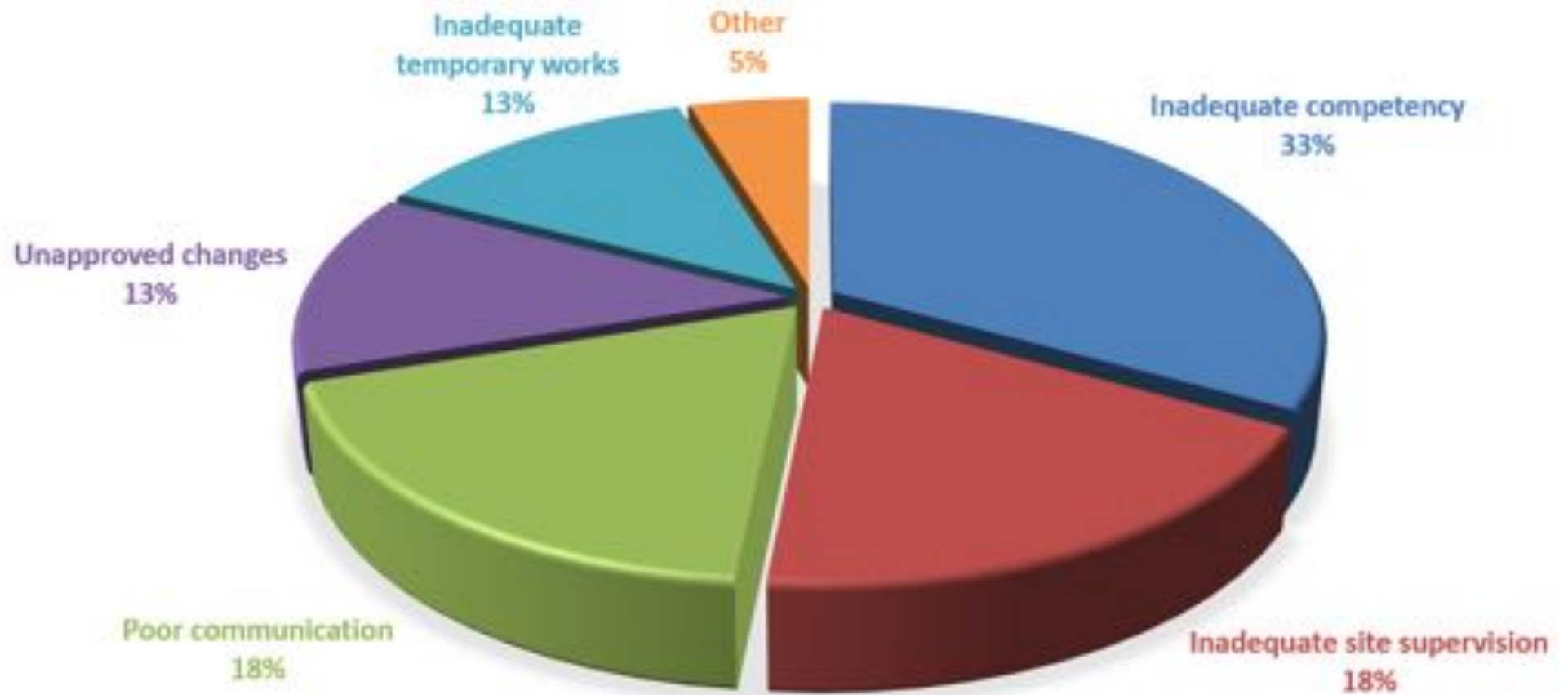
Project Stage for CROSS Report Safety Concern



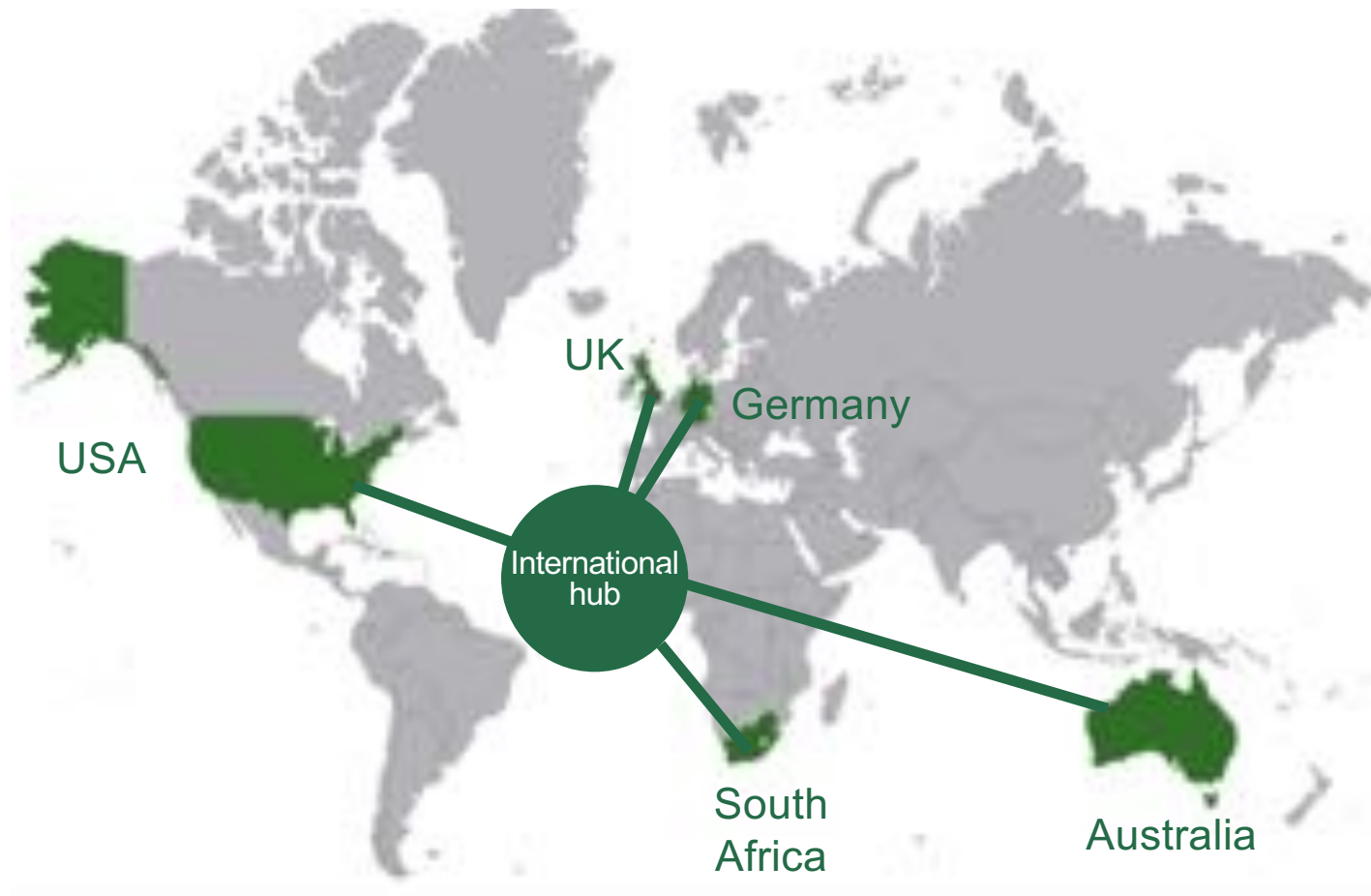
Safety Concern During Design Stage



Safety Concern During Construction Stage



CROSS International



Benefits of Confidential Reporting

- Proven system - aviation industry
- Confidential
- Independent
- Free to use
- Non-judgemental
- Shares information
- Identifies trends

Challenges for Confidential Reporting

- Apathy
- Confused with whistle blowing
- Lack of awareness
- Difficulty with how to report
- Concerned about being disloyal to employer or client
- Legal restrictions following arbitration - should be changes to legislation

Confidential Reporting for Fire Safety?

- What would it look like?
- Would it benefit the industry?
- What type of people would you need on the expert panel?
- Would people report?
- Challenges?