FIRE & SAFETY
Fire Safety Engineering

Tall Building Design & Construction

Insights from an Expert Witness

ENGINEER’S LIABILITY

HOW TO PREPARE FOR POTENTIAL LITIGATION: INSIGHTS FROM AN EXPERT WITNESS

Being both an engineer and a special expert witness, I want to share what commonly exposes engineers to legal disputes — and how to best prepare and protect yourself before things go wrong.

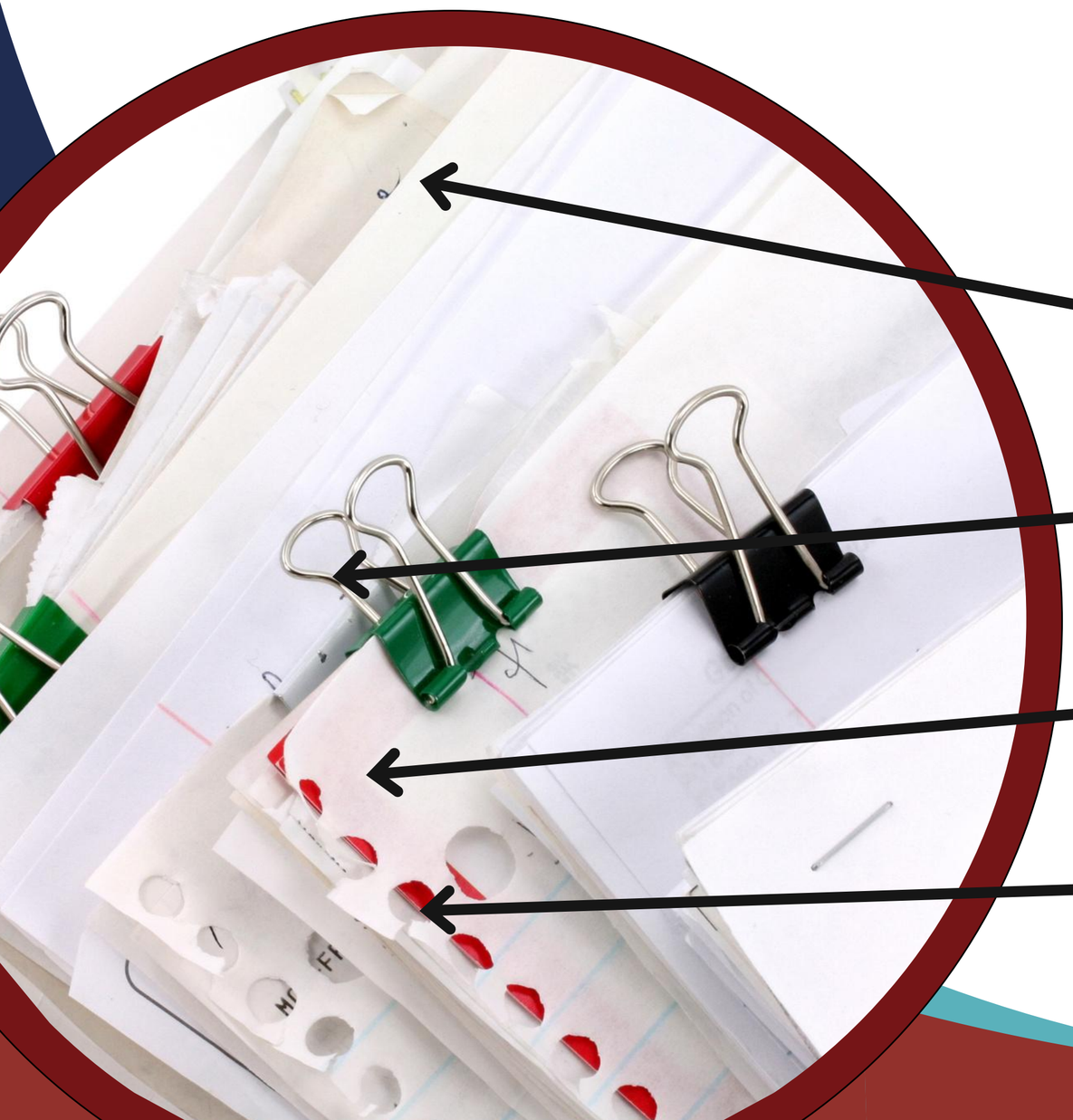
PROJECT STAKEHOLDERS

Complex ecosystem of building design and construction

Fire safety defects and combustible cladding - Critical risks

Learn from real cases to mitigate liability and improve safety

COMMON FAILURES LEADING TO DEFECTS



- Product substitutions
- Design changes
- Missing or incomplete documentation
- Communication breakdown

WHY DO FAILURES OCCUR

01

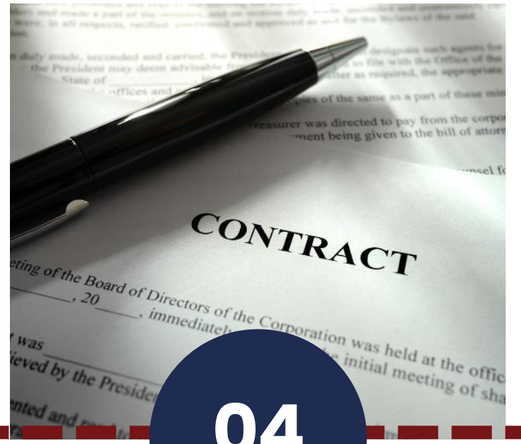
Overlapping but isolated roles

02

Lack of holistic design

03

Unclear liability



04

Gaps in Project Teams

REASONS TO START LITIGATION AGAINST A CONSULTANT

- Breach of contract
- Not meeting statutory requirements
- Producing defective work
- Lack of competence

TYPES OF LIABILITY

Proportionate Liability - Aus

Proportionate liability regime has been enacted in all Australian States and Territories in varying forms.

Joint and Several Liability - UK

The UK generally follows joint and several liability, especially in tort and negligence claims

Feature	Proportionate Liability	Joint and Several Liability
Liability Limit	Proportional share % of their fault	100% of the total loss
Plaintiff's Role	Must sue everyone involved - pursue each party for their share.	Can pick one defendant (the wealthiest party) for 100%
Insolvency Risk	Borne by plaintiff	Borne by defendants

BUILDING REGULATIONS

National Construction Code - Aus

Building Regulations 2010 – UK

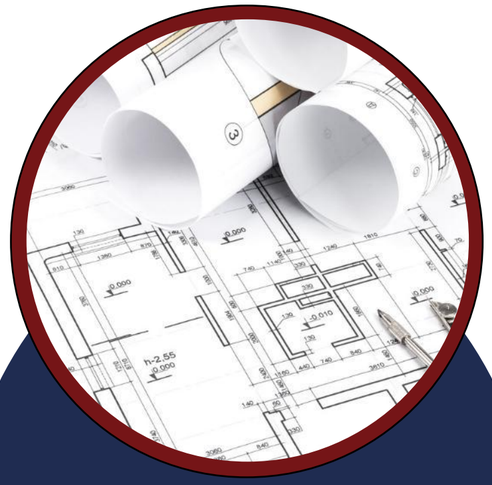
	Australia	United Kingdom
Primary Building Code Framework	National Construction Code (Building Code of Australia)	Building Regulations 2010 Approved Document B (guidance)
Outcomes	Performance Requirements	Functional Requirements
Compliance Pathway	DTS Provisions Performance Solution	Guidance in Approved Documents Fire Engineered Solution/Strategy
Fire Engineering Documentation	Fire Engineering Report	Fire Strategy Report
Fire Safety Objectives	Protect people from injury Protect people while evacuating Facilitate emergency services Avoid spread of fire between buildings Protection of other property	Safe evacuation Limiting internal fire spread Structural stability in fire Preventing external fire spread Supporting fire brigade intervention

IMPORTANCE OF DOCUMENTATION

- Instructions of Lawyers
- Briefing Experts
- Producing Evidence

ROLE OF THE EXPERT WITNESS

Engaged post-incident or in litigation



Retrospective review of design and construction

Analyse codes, legislation, documentation, testing at time

Define limits of professional duty of care

DOCUMENTATION AND COMMUNICATION GAPS

- Missing or incomplete Fire Engineering Report/ Fire Strategy Report
- Lack of version control and audit trails
- Critical emails or meetings undocumented
- Undermines defence in legal proceedings

PRACTICAL RECOMMENDATIONS FOR PROFESSIONALS

ONE

Roles and responsibilities

THREE

Defensible, comprehensive records

FIVE

Involve fire engineers and experts

TWO

Fire safety reviews

FOUR

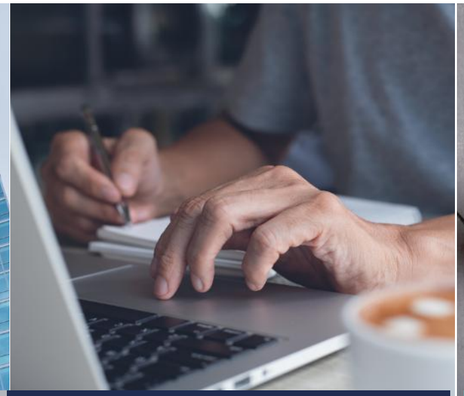
Manage risk by communicating

SIX

Professional indemnity and regulatory updates

CASE STUDY 1: PRODUCT SUBSTITUTION

ONE



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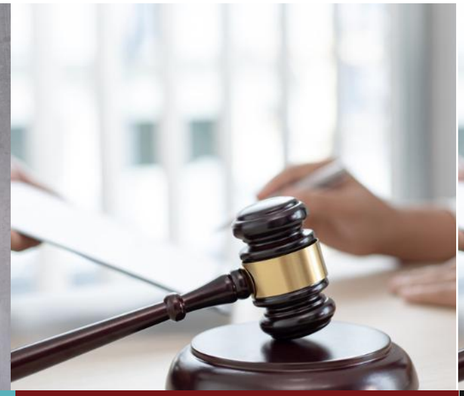
THREE



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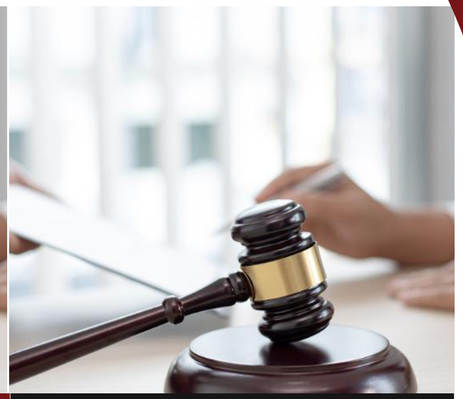


FIVE

SUBSTITUTION

Original flooring replaced with untested material

UNMET CRITERIA

FER written after installation.

FIRE

Fire occurred at the factory

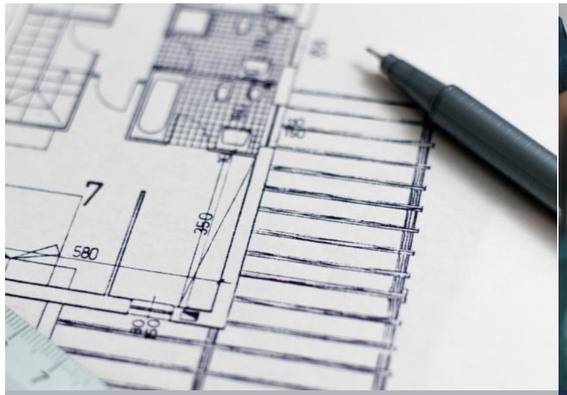
TESTING

Both products tested – Nether met FER criteria

RESULT

Loose contract - Settled out of court

CASE STUDY 2: UNDOCUMENTED DESIGN CHANGES



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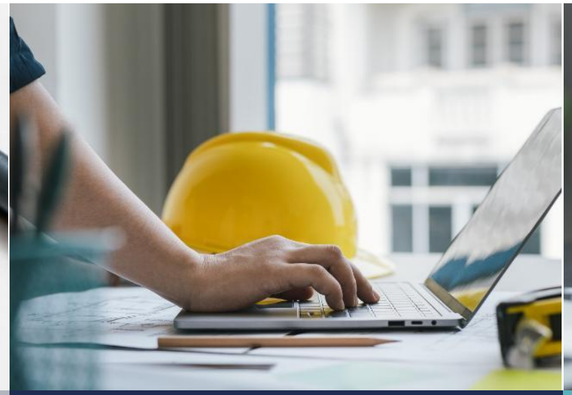

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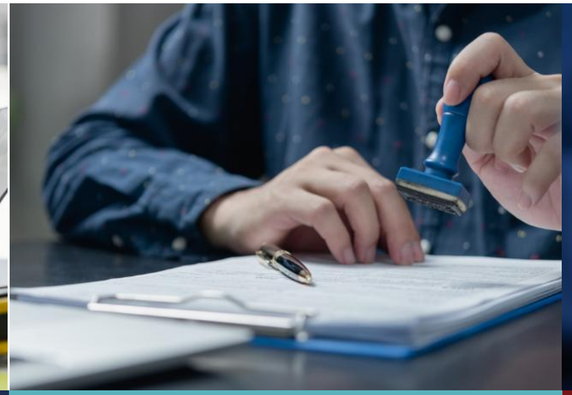


THREE

FOUR

MODIFICATION

Design modifications during construction

NOT ASSESSED

Engineering specification not revised

RESULT

Certifier unaware of critical changes

OUTCOME

Safety compromised, costly remediation

CASE STUDY 3: CLADDING INSTALLATION & COMPLIANCE

ONE

INSPECTION

Building examined post Grenfell fire

TWO

DEFECTS

Combustible EWI cladding had installation defects

THREE

RESPONSE

Developer sued builder for cladding removal and waking watch

FOUR

FINDINGS

Cladding had a BBA certificate but no test data

FIVE

RESULT

Developer was successful

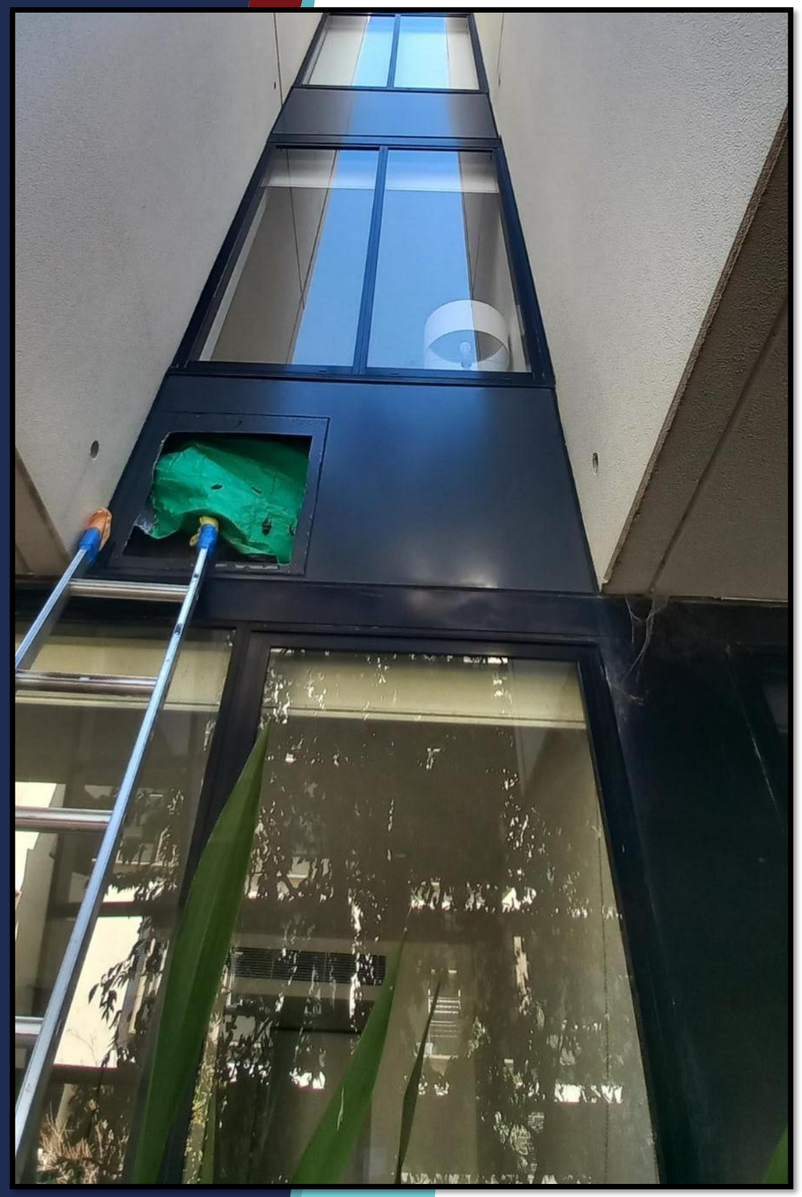
TYPES OF CERTIFICATION

CodeMark Australia Certificate of Conformity

CodeMark is a formal third-party certification scheme which provides evidence that a product, system, or construction method complies with the National Construction Code.

BBA (British Board of Agrement) Certification

A BBA certificate materials are fit for purpose, durable, complies with building regulations, including testing, on-site evaluation, and production inspections. It is strong technical evidence, but it is not itself statutory approval.



WALL CLADDING

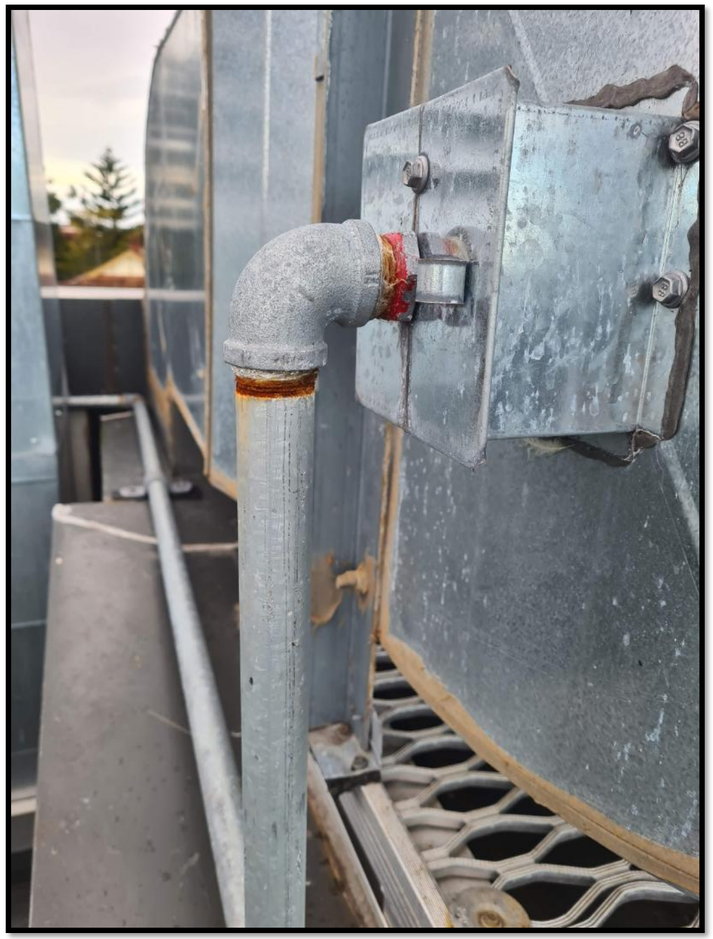
ACP cladding approved as an attachment to the external wall until BCA 2016.

Approved Document B 2026 guidance, prohibited the use of a combustible insulation system unless a successful fire test had been carried out.

FIRE ENGINEERS REQUIREMENT

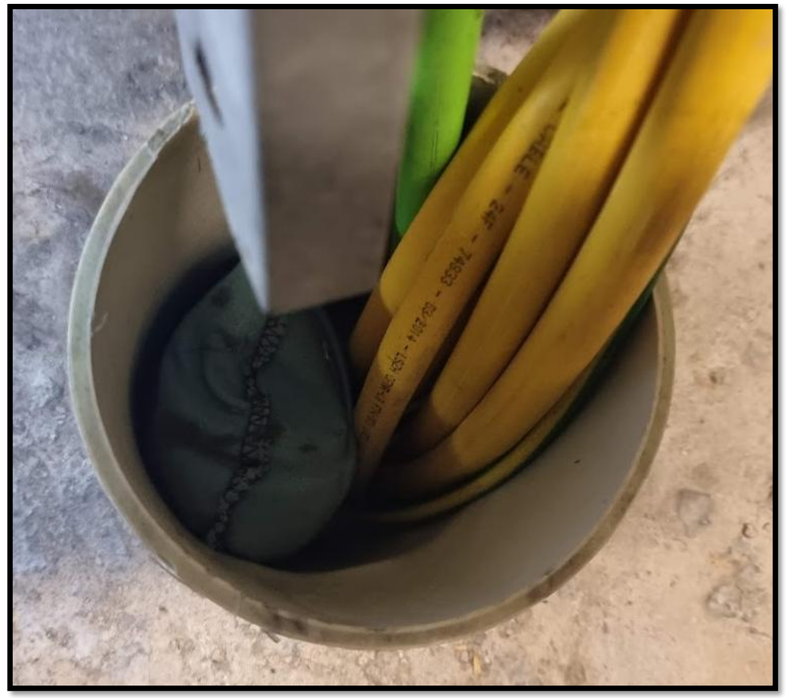
Fire engineer specified and relied on smoke seals for extended travel distances assessment.

MAINTENANCE vs DESIGN



Did the owner not maintain it or was the installation not fit for purpose?

RELIANCE ON WORK BY OTHERS



Can we rely on passive fire stopping?

TRUST WHAT YOU CAN’T SEE

Can we assume it is there if we cannot see it?

COMPLIANCE

Is compliance all we need?

LONG-TERM SOLUTIONS

Are fire-rated ceilings a good idea?

CONCLUSION

- Safety is a shared responsibility
- Holistic, documented, collaborative approach essential
- Learn from past cases to improve future outcomes
- Is compliance always sufficient?