

TennysonSuite

HEALTH, SAFETY & TRAINING
CONSULTANTS

Using AI in Fire Safety

Risks and Benefits

Tall Buildings Fire Safety Conference

21 May 2026

Tom Lawrence

Tennyson Suite

Health, Safety and Fire Safety Consultants



Why AI Matters Now

AI is moving from novelty to everyday professional tool.

In fire safety, it is already beginning to influence:



- Design review



- Document checking



- Report drafting



- Resident communication



- Risk assessment support



- Compliance management



**The question is not whether AI will affect fire safety.
The question is how safely we choose to use it.**



What Do We Mean by AI?

AI is not one single tool.

For fire safety professionals, it may appear as:



Generative AI

Drafts text, summaries, reports and responses.



Image generation

Creates or enhances visuals, sketches and illustrations.



Computer vision

Analyses images or video to identify objects, defects or patterns.



Predictive analytics

Uses data to identify trends, priorities or likely risks.



Automation

Carries out repetitive checks, reminders or admin tasks.



Decision support

Helps structure professional review — but does not replace judgement.



Where AI Can Help Fire Safety

Used carefully, AI can support the work around **professional judgement**.

Potential uses include:

- ✓ Summarising large document packs
- ✓ Drafting first versions of reports
- ✓ Checking consistency across documents
- ✓ Comparing inspection records
- ✓ Turning technical content into clearer language
- ✓ Supporting training and toolbox talks
- ✓ Helping structure risk reviews
- ✓ Improving communication with residents and project teams

**AI should assist the competent person —
not become the competent person.**



Tall Buildings: Why the Stakes Are Higher

Tall buildings combine:



Complex evacuation strategies



Multiple dutyholders and stakeholders



Vulnerable residents



Legacy construction issues



Compartmentation uncertainty



Fire doors, smoke control and active systems



Large volumes of records and evidence

**Small errors can have major consequences.
This makes AI both attractive and risky.**

Benefits: Speed, Scale and Clarity



Speed

Reducing time spent on repetitive drafting, sorting and summarising.



Scale

Reviewing large volumes of documents, records and inspection data.



Clarity

Translating complex technical issues into clearer communication.



The opportunity:

More time for **professional judgement**, **site understanding** and **risk-based decisions**.



Image Generation: Useful Visuals or False Evidence?



Benefit: clearer communication

AI can help turn rough sketches into clearer visuals for:

- ✓ Fire strategy concepts
- ✓ Escape routes
- ✓ Compartmentation principles
- ✓ Fire stopping details
- ✓ Project and design team discussions



Helps teams understand ideas quickly.
Improves clarity and alignment.



Risk: unreliable evidence

AI can also create or alter convincing images of:

- ✗ Site conditions
- ✗ Fire doors
- ✗ Defects
- ✗ Completed works
- ✗ Damage or remediation



AI images may look real but be inaccurate or entirely fabricated. Verify source, date and authenticity.



Use AI images to explain ideas — not to prove facts.









This Agrément Certificate Product Sheet⁽¹⁾ relates to REDACTED⁽²⁾, a fibre-reinforced cement plank for use as an exterior non-loadbearing lap cladding over timber stud or masonry walls, or steel or aluminium subframe in residential and commercial buildings.

(1) Hereinafter referred to as 'Certificate'.

(2) REDACTED is a registered trademark of REDACTED International Finance B.V.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED

Strength and stability — the product has acceptable resistance to wind and impact loads (see section 6).

Performance in relation to fire — the product is classified as A2 - s1,d0 in accordance with BS EN 13501-1 : 2007 (see section 7).

Weathertightness — the product, when installed on a non-watertight supporting wall, is not weatherproof and must be used in conjunction with a suitable vapour permeable membrane (see section 8).

Durability — the product is durable and can be expected to have a service life in excess of 30 years, although it may be necessary to overcoat the product within this service life (see section 10).



This Agrément Certificate Product Sheet⁽¹⁾ relates to REDACTED⁽²⁾, a fibre-reinforced cement plank for use as an exterior non-loadbearing lap cladding over timber stud or masonry walls, or steel or aluminium subframe in residential and commercial buildings.

(1) Hereinafter referred to as 'Certificate'.

(2) REDACTED is a registered trademark of REDACTED International Finance B.V.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED

Strength and stability — the product has acceptable resistance to wind and impact loads (see section 6).

Performance in relation to fire — the product is classified as Euroclass D - s4,d1 in accordance with BS EN 13501-1 : 2007 (see section 7).

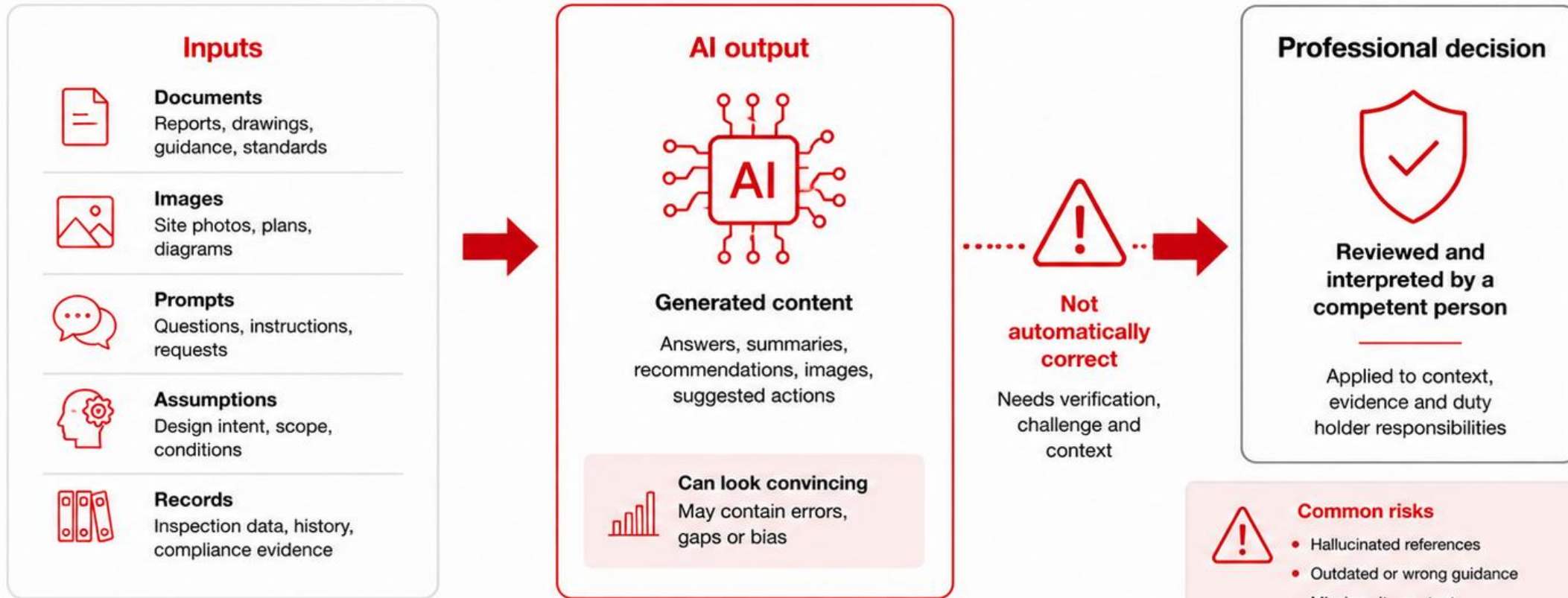
Weathertightness — the product, when installed on a non-watertight supporting wall, is not weatherproof and must be used in conjunction with a suitable vapour permeable membrane (see section 8).

Durability — the product is durable and can be expected to have a service life in excess of 30 years, although it may be necessary to overcoat the product within this service life (see section 10).



Risks: Bad Inputs, Bad Outputs

AI can produce **confident** answers from weak foundations.



 **A polished answer is **not** the same as a correct answer.**

Accountability and Guardrails

AI can assist. It **cannot** hold responsibility.

Practical guardrails:



Keep a human in the loop

A competent person must review and take responsibility.



Protect confidential and personal data

Use secure tools and follow data protection principles.



Check sources and references

Verify guidance, standards and evidence before use.



Verify images and evidence

Check authenticity, source, date and context.



Define approved use cases

Be clear where AI may and may not be used.



Record assumptions and limitations

Make assumptions explicit and document limitations.



Keep audit trails

Record prompts, outputs, edits and decisions.



Escalate high-risk decisions

Seek competent review for critical judgements.



Responsibility remains with people, organisations and dutyholders.



Using AI Well



AI used carefully

It can improve:



Speed

Faster drafting, sorting and summarising.



Consistency

More consistent outputs across teams and projects.



Communication

Clearer language for residents and stakeholders.



Prioritisation

Better focus on the issues that matter most.



Learning

Stronger knowledge capture and training support.



AI used carelessly

It can create:



False confidence

Confident language that sounds authoritative.



Poor evidence

Unreliable or altered images presented as fact.



Unchecked assumptions

Hidden gaps and context that are not challenged.



Unclear accountability

Responsibility becomes blurred or misattributed.



Missed risks

Important issues remain undetected or misunderstood.



The future is **not** AI instead of fire safety expertise.

It is fire safety expertise **using AI well.**

TennysonSuite

HEALTH, SAFETY & TRAINING
CONSULTANTS



Working
together in safety.

Thank You

Any Questions?

Thank you for your time and attention.

Tom Lawrence

Tennyson Suite

Health, Safety and Fire Safety Consultants



AI should support professional judgement, not substitute for it.

TennysonSuite

HEALTH, SAFETY & TRAINING
CONSULTANTS



Working together in safety.