

## 25<sup>th</sup>

# ANNUAL FIRE SAFETY CONFERENCE

23 & 24 February 2023  
Armagh City Hotel

## “The changing face of fire safety”

Marking **50** years of the Building Regulations in  
Northern Ireland

[www.buildingcontrol-ni.com](http://www.buildingcontrol-ni.com)

# The Impact of Changes to Fire Engineering

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23<sup>rd</sup> February 2023

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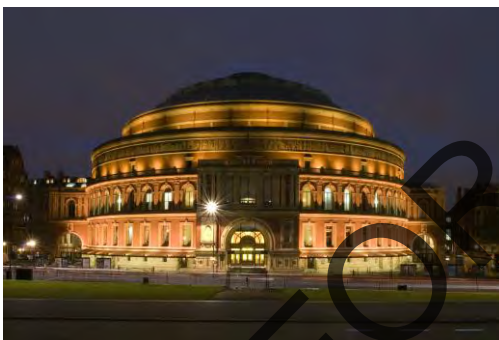


# About The Fire Surgery



THE FIRE SURGERY

- Small Fire Engineering consultancy of 12 based in the City of London
- The company commenced trading in October 2011
- We specialise in designing unique fire strategies
- SFPE Best Fire Strategy 2015 for the Sam Wanamaker Theatre
- SFPE Best Fire Strategy 2016 for Croome Court
- SFPE Best Fire Strategy 2021 for The Royal Albert Hall
- Engineering Talent Awards small-medium enterprise of the year 2020





## Current heritage projects





## Recent Commercial Offices



- Largest loss of life fire
- Change in Legislation
- Change in guidance
- Change in design approach
- Change in attitudes
- Change in Culture
- Nervousness around fire safety design....



# Professional Indemnity

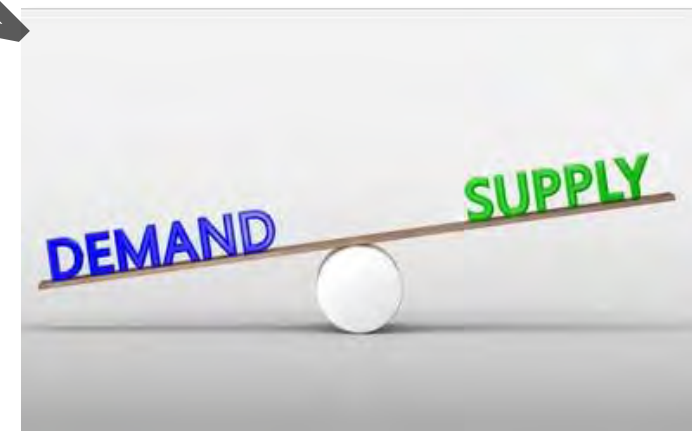
- ✚ Insurers have all but left the fire engineering market
- ✚ Our insurance premium has increased 200% whilst our cover has reduced significantly
- ✚ Clients want tighter contracts with appointments
- ✚ Significant costs in legal fees
- ✚ Because we are in such high demand we can to some degree control the appointments....





# Supply and Demand

- ✚ The demand for fire engineers is unprecedented
- ✚ Pre-Grenfell – only the good design teams knew they needed fire engineers
- ✚ Now – Most recognise they need fire engineers
- ✚ There are not enough competent fire engineers
- ✚ We turn down on average about 8-10 projects a week
- ✚ Maintain a healthy work/life balance
- ✚ Reduce the risk of mistakes
- ✚ Fierce competition leading to an over promoted / under qualified industry...





- Questions of Competency are now more prevalent
- Gateway 1 at planning in London requires fire statements written by Chartered Fire Engineers
- What defines competent fire engineers? How does a client choose?
- Consider the knowledge required for all aspects of fire safety through design and construction
- Competencies are the knowledge, skills, abilities, personal characteristics and other "worker-based" factors that help differentiate superior performance from average performance under specified circumstances. Competencies are identified to clearly define the essential functions of the job.
- Competency statements on all formal reports
- Can I successfully defend my solutions if interrogated by an industry expert?.....

# Third Party Reviews

- Once reserved for very complex fire strategies, now very common
- Particularly by Building Control who lack competency in certain areas
- Undertaken to varying degrees of interrogation
- Needs to be an agreed approach for professional consistency
- SFPE has some good guidelines
- Known in advance so part of the QDR process and the fire engineers scope.....





# Increased and changing scope



Historical



A fire strategy



Sometimes



Deskilling



Expectations



Fire strategy



Our costs



Essential

| A description of the complete works | Please provide a design and access statement or alternatively a full description of the works  |
|-------------------------------------|--|
| Images                              | Please provide CGI images of the internal and external aspects of the building   |
| Section                             | Please provide a section of the building to highlight the height of the building from external ground floor  |
| Site Plan                           | Please provide a site plan which show clearly the legal boundary to work out external fire spread also the roadways suitable for access for fire appliances    |
| Cavities                            | Please provide a description of the cavities within the building, including cavities in the external façade, raised floors, suspended ceilings, roof voids etc |
| Roof access                         | Please highlight where access is provided to the roof  |
| Occupant Numbers                    | Please confirm if there are any areas where increased occupancy is required  |
| Internal linings                    | Please provide a list of the surface linings being used in the main areas of the building  |
| Fire Doors                          | Please highlight where there are special requirements for fire doors, hold open devices, glass doors etc   |
| Cavity insulation                   | Please provide information on the type of insulation provided in the façade.   |
| Existing buildings                  | Please provide the existing plans, existing fire strategy and existing fire strategy plans   |
| Elevations                          | Please provide elevations to assist with working out external fire spread  |
| Phased occupation                   | Please provide details of any phased occupation  |
| Required flexibility                | Please provide details of any future flexibility that needs to be accounted for, e.g. tenancy splits, change of use  |
| Empty spaces / lobbies              | If any empty spaces / lobbies are not intended to remain sterile please provide details of how they will be used   |

ance

(3)

guidance!

age 6...

# Construction monitoring

- Monitor the fire strategy through construction. There to check the fire strategy is built correctly
- Not a clerk of works or building control. Currently we don't sign off.
- Extra-net sites with 1000's of drawings and details
- Agree methodology
  - Specific emails for comments
  - Monthly site meetings with BC
  - Single point of contact with contractor
  - Develop a tracker of changes
  - Produce a final condition report
- Work with specialist sub-contractors and comment on non-tested details.....

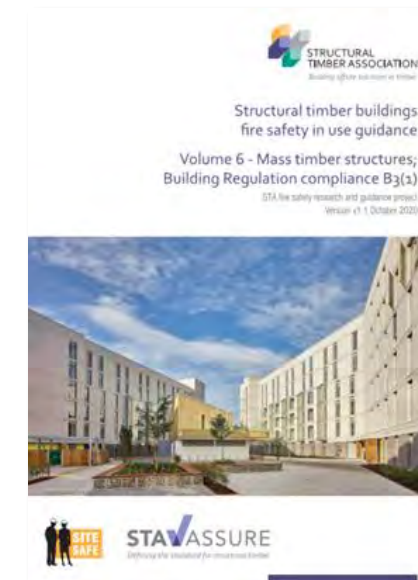


- Everyone wants it in the current climate. Clients for warranties, Contractors for warranties and approvals, sub-contractors to meet accreditation etc
- Its commonly not available. This leads to a procurement impasse
- Agree methodology
  - Assemble a team of key stakeholders
  - Is there an alternative product that is tested for this detail?
  - Can we get a view from the supplier?
  - Can we enhance the product or detail?
  - Agreement by all parties
  - Provide a clear audit trail.



# Cross Laminated Timber - CLT

- Urgent climate needs for sustainable construction methods
- Historically over simplistic views and approach to fire safety design
- Building Regulations requirement is based on non-combustible structures that resist complete burnout without failure
- CLT structure is combustible and will contribute to the fire
- Will the CLT continue to burn until structural failure?
- Structural Timber Association Vol 6 October 2020
- Partner with IGNIS a Zurich University spin off company who are timber fire specialist .....





# Lithium-Ion Battery Fires

- Scooters, Cars and E-Bikes as the sustainable method of transportation
- Lithium-ion battery fires are fierce and there is currently no guidance available for the design in buildings.
- The FIA have produced a guidance note
- Currently working on a project for Amazon logistics with 400 E-Cargo bikes
- We developed a fire strategy with a QDR process and key stakeholders based on a structured approach, Prevention, Detection, Comms, Contain, Suppress
- Don't wait for Government – Judith Hackitt



## Summary and looking forward

- We live in a nervous post Grenfell World which has seen a big impact on fire engineering:
- I think fire safety design is likely to become more prescriptive, certainly for relevant buildings
- Insurance is very problematic. I would like a combined voice for fire engineering companies to help address industry issues
- Fire engineers are in high demand - danger of under qualified over promoted industry
- Competency is a key issue across all aspects of fire safety hoping working group 6 will address this
- Third party reviews need to be more professional with a structured approach
- The scope of a fire engineering services has increased and changed and continues to change
- Construction support is essential and helps the future design process
- Developing management strategies is critical
- Extended application or desk top studies for non tested details should be formalised
- Quicker change in developing guidance recommendations to keep up with industry

Treating your fire safety concerns