

FIRE SAFETY ENGINEERING

No two buildings are exactly alike. Many have similar functional requirements, but each is unique; incorporating different materials, layouts and occupants. IFC can apply fire engineering techniques, along with their exacting knowledge of standards and design acumen, to advise on robust and cost-effective fire safety engineering solutions.

Our fire safety engineering services include high level strategic advice using detailed bespoke engineering analysis, computer modelling and negotiating positive outcomes for our clients with approvals bodies.

Our service includes expertise in relation to matters such as fire regulations, fire growth, fire dynamics, means of escape, smoke control, structural fire resistance, as well as in the detailed design and evaluation of fire safety products and systems.

Fire protection is one of the most important investments and critical considerations that can be made on a construction project.

Our clients expect and demand the very best fire safety advice. They look to the IFC Group to ensure their buildings comply with recognised standards and guidance and that they are professionally designed to match the ever-greater expectations for fire safety.

Standard fire safety design guides (such as Approved Document B or NFPA 101) can be overly restrictive on the design of buildings, especially for innovative or unusual ones. Construction projects that have simply followed these guides have often resulted in inappropriate designs which can detract

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from the original concepts and plans for the building, as well as causing unnecessary or wasted expenditures.

Fire safety engineering offers an alternative focused approach to building design, that ensures the structure and its occupants are as safe from the dangers of fire as can be reasonably expected; rather than simply ensuring that it complies with a design document.

Our aim is to incorporate tailored fire safety engineering solutions so that an acceptable level of safety is provided.

Fire safety engineering can incorporate the most appropriate methods of fire protection (from a host of engineering techniques) which will help to minimise the impact of fire on the building, take advantage of real cost efficiencies and ultimately improve overall resilience and safety.

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FIRE STRATEGIES

Bespoke fire strategies, produced by the IFC Group are developed to address the specific fire risks that may exist within a building.

Projects gain the greatest value when IFC work with designers to develop the strategies in alignment with early building plans. However, we regularly provide innovative solutions in order to revise existing plans and gain approval for a design that doesn't yet comply with standard fire safety codes; or when renovation work is being conducted, meaning pre-existing strategies need to be reviewed and updated.

The fire strategy will refer to any fire engineering solutions and analysis used to formulate the report's conclusions, such as computer modelling (CFD), structural fire engineering or radiation analysis and will detail various elements as required, including:

- ✓ Evacuation routes
- ✓ Firefighting provisions
- ✓ Passive & Active systems
- ✓ Material classifications & recommendations
- ✓ Occupant risk profiles
- ✓ Fire spread issues

STRUCTURAL FIRE ENGINEERING

In most types of buildings, it is necessary to ensure that the core structure will remain in place for a reasonable period during a fire.

Structural fire engineering is a technique used by IFC Engineers where the actual fire severity can be accurately predicted for key locations within the building and precise calculations carried out on the impact the fire has on each element of structure.

Actionable advice can be used to identify and plan the best and most effective solutions for the building, often resulting in significant reductions in the amount of fire protection that is required and major cost savings.

COMPUTATIONAL MODELLING (CFD)

Engineers at the IFC Group are able to use leading-edge technology in order to incorporate Computational Modelling into our assessment and design processes.

Using Computational Fluid Dynamics (CFD) we are able to very precisely calculate flow speeds, pressures, behaviours and other characteristics that enable us to model specific scenarios in a digitally created environment. This allows us to determine how a fire in a given scenario will develop without the need for expensive physical tests.

Scientific data and analysis can be extrapolated into 'what if' models that can provide a true understanding of potential risks and form the basis of recommendations that support any engineering conclusions.

At International Fire Consultants we deliver robust, innovative and cost-effective fire safety solutions to a range of diverse clients. We have extensive expertise across the built environment including every day buildings such as; residential, education facilities, healthcare and retail spaces, as well as niche buildings such as historical royal palaces and stately homes.

Visit www.ifcgroup.com to understand more about our comprehensive range of services

