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The human
impact of fire

Foreword

With an increasing number of large and complex fires being experienced by organisations of all types and sizes, what is the impact on those affected?

Zurich is seeing a growing number of large and complex fire claims, and as an insurer, we are concerned about the impact these losses have upon the wellbeing of individuals and organisations.

Changes to the built environment, including the type and combination of materials used, have contributed to fires being more complex, more severe, and harder to tackle for firefighters. At the same time, the most common causes of fire, including arson, electrical faults, hot works and accidental ignition, remain as prevalent and as dangerous as ever.

In recent years, we have seen the increasing use of combustible cladding and insulation materials, in part to achieve sustainability goals, reduce the carbon footprint, and demonstrate compliance with climate change objectives. It is argued that these comply with building regulations and standards. However, in the case of timber balconies and combustible cladding, the

government has recently provided clarification on what is acceptable in order to minimise the associated fire risk.

In the built environment, we need to take greater recognition of how properties are being used in reality, and how fire events can affect the wellbeing of individuals and families. Compliance with building regulations alone has, in our experience, been insufficient to achieve these two objectives.

We have noted an increased awareness and sensitivity to fire safety from those directly or indirectly affected. Research into the mental health of these individuals also suggests that this is adding to anxiety. As an example, we have seen a number of fires involving combustible balconies, which are now causing residents significant concern.

Whether directly or indirectly, fires can also affect individuals in other ways. From tenants waiting for alternative

accommodation, to staff having to commute twice their normal distance to work, to the loss of personal or business items, these events can add significant turmoil to daily life.

Zurich recognises the risk that fire presents to public and voluntary sector organisations, and the widespread impact it can have upon individuals and communities, and we have developed a number of fire risk resources in response. We will continue to commit resources to tackle fire risk and are expanding our research and are developing tools to help manage that threat.

In this whitepaper, we look at the human impact of fire risk, discuss what this means for public and voluntary sector organisations from a practical and reputational perspective, and explain how Zurich Municipal can help.

Andrew Jepp,
Managing Director, Zurich Municipal

The human impact of fire risk

Fire is one of the most significant risks facing any property owner, but beyond the economic cost and the threat to physical safety, what is the emotional impact on those affected?

One of the biggest challenges facing organisations after a significant or total loss due to fire, is finding replacement buildings that will allow those impacted to carry on with their lives as quickly as possible.

Paul Redington, Regional Major Loss Manager at Zurich, says: "Finding suitable local alternative accommodation can be difficult. In some cases, shortages have meant that novel approaches have been adopted – even including paying for people to go on holiday. It is important that organisations plan in advance for the worst-case scenario and consider all options for temporary accommodation, especially in the days following a loss.

"This is particularly true if the fire happens in congested city or town locations. Zurich has accommodation suppliers that can assist, but securing long-term lets can be challenging, and even securing local hotel rooms at short notice may be impossible. Emergency plans should consider whether a property is close to conference centres or sports stadia, for example, that may periodically tie-up hotel accommodation in the area. Organisations should complete workshops with all key stakeholders that plan for such eventualities."

Being displaced following a fire is distressing enough, but not being able to find suitable local accommodation can exacerbate the situation. Paul adds: "Following a residential fire, the trauma felt by those involved – who may have lost their homes and possessions – can be huge. An additional day, week, or month could make all the difference, and organisations need to factor this in when responding."

Specific challenges for the education sector

Schools and academies can find it particularly challenging to bounce back quickly following a fire. With 7,000 fires affecting education premises over the last decade, the impact on education provision can be huge.

Stuart Blackie, Property Team Leader at Zurich, explains: "Fires can occur at any time, but those prior to the exam period can be particularly distressing for pupils. While teaching materials can be replaced, it is much harder to replace valuable course work."

In many cases, Zurich is able to provide on-site temporary buildings, but in other cases – particularly if space is

limited – then off-site alternative accommodation needs to be found. While this is covered within the insurance policy, it increases the stress for pupils and teaching and management staff alike.

Once alternative classrooms are found, the logistics of getting children and staff to a new site can be challenging. Stuart adds: "Often, this will involve transporting children to an alternative site, often much further away. This not only affects children – who may have to get ready for school much earlier – but also parents, who may need to find alternative travel arrangements. This

kind of disruption can easily go on for many months, and in some cases, much longer."

Any major fire can also add to the pressure and demands on staff. In the social media age, an organisation is likely to receive a deluge of enquiries. As part of an organisation's emergency planning, the level of media interest should be considered carefully, and clear guidelines put in place to establish which individuals are authorised to speak. Staff training in this area can be worthwhile, and can help reduce the stress individuals may experience following an incident.

An enormous impact on staff

Any major fire can also add to the pressure and demands on staff. Ralph de Mesquita, Principal Risk Analyst at Zurich, says: "Many public and voluntary sector organisations are already dealing with the pressure of cuts, so when you layer on the effects of a catastrophic fire, the pressure can be enormous. In the social media age, an organisation is likely to receive a deluge of enquiries from affected individuals, and often, the media.

"Organisations, through media planning and scenario-based workshops, can develop clear media and communication strategies. These workshops can also lead to learnings that will help organisations identify and mitigate risks they are exposed to."

The human resources required for recovery means that staff will be under considerable pressure to not only manage the loss, but to remain fully focused on their existing responsibilities. To ensure that suitable recognition is given to the extra work involved, staff should be encouraged to record their additional hours of working. De-briefing meetings for those involved will also help to identify the additional work and allow strategies to be re-focused as situations evolve.

The human cost of risk can reverberate for years. Ralph adds: "Fortunately, the chances of a serious fire are small. However, when one does occur, minimising the human cost is all about being prepared, recognising the risks, and being in a position to respond quickly."

Find out how we have helped some of our education customers get back up and running following major fires – see St Bede's School (video) and Selsey Academy (article).

Risk areas in focus

Arson and hot works are among the most common causes of fire in the UK. Changes to the built environment, for example increasing use of modern methods of construction, are also a leading factor in many fires. But how can organisations manage and mitigate the risks?

Arson and wilful fire-raising (see boxout) remain the most common causes of fire in the UK, and are often the most damaging. According to the National Fire Chiefs Council, arson accounted for 50.5% of all fires attended by fire and rescue services in the UK in 2017/18, and the estimated economic loss over this period was between £5.73bn and £11.46bn. While cases of arson declined by 30% in the period following 2011/12, there has been an upward trend since 2014/15.

Paul says: "During the last recession, where we saw a large increase in the number of vacant buildings, we also saw a rise in arson. Since then, the Property Major Loss team continues to see claims that have resulted from arson, which put both property and lives at risk.

"Malicious or deliberate fires are not uncommon in empty premises, but very often claims involve occupied buildings, many of them residential. While such fires will remain a significant issue regardless of the wider economic situation, the fear is that in the event of an economic downturn, we may see more deliberate fires, particularly if the volume of vacant properties increases."

Schools can also be at greater risk of malicious damage and fire setting, particularly during holidays.

Organisations can take a number of measures to reduce the risk, from reviewing and upgrading building security, to relocating combustible external structures such as sheds, waste bins, litter bins or temporary buildings away from main buildings. Organisations should also conduct routine inspections of high-risk sites (regardless of whether or not they are occupied), ensure procedures and maintenance schedules are up-to-date, and implement an effective incident reporting process.

Our recent white paper, *Fire safety: addressing risk improvement actions*, provides tips and guidance for organisations looking to reduce the risk of arson and wilful fire raising.

Hot works

Hot works – defined as any building, maintenance or refurbishment work that requires the application of heat, such as grinding, welding or torch-applied roofing – represents another major fire risk, with Zurich claims data revealing that 15% of all fires in commercial and industrial properties are caused by hot works. Over last three years, this has accounted for losses worth over £250m when both property damage and business interruption losses are accounted for.

Recent high-profile examples have included substantial fire damage caused to a hotel after a planted green wall was set alight by nearby welding work. Elsewhere, major fire damage was caused to a hospital and cancer research lab as a result of hot works in the rooftop plantroom.

The potential risks of hot works include: extensive fire damage; explosions as a result of sparks coming into contact with flammable gases or combustible dusts; and injuries including burns and inhalation of fumes. The inherent risks of hot works can be exacerbated by poor practices and processes.

Wilful fire-raising

Wilful fire-raising is a criminal offence in Scotland that is similar to arson, but not identical. Wilful fire-raising only covers fires that were started deliberately, whereas arson includes fires that were reckless but not deliberate.

These can include a failure to:

- Fully understand the nature of the works taking place and the specific risks they pose
- Select an experienced contractor who will select the lowest risk methods
- Remove all combustible materials from the site vicinity or apply the right controls
- Maintain fire watches during breaks in the day and after hot works have finished
- Establish proper procedures for dealing with an emergency

We are continuing to invest in technology and digital solutions to help reduce the risks posed by hot works. To learn more about our approach to tackling hot works risk, and for guidance on identifying and addressing the key challenges you could face, download our recent whitepaper, *An in-depth guide to hot works safety* or read our *interactive guide to hot works*.

Changes to the built environment

More and more public sector organisations, particularly local authorities and housing associations, are embracing modern methods of construction (MMC).

These new technologies are used in the construction of a variety of buildings, from small blocks of flats to education, health and leisure centres. Indeed, as construction practices and technology continue to rapidly develop, taller and more complex buildings are being erected using MMC.

The use of MMC can be particularly attractive to local authorities and housing developers looking to construct public buildings and social housing developments in the most efficient manner, while also meeting the latest standards on sustainability and environmental performance. These methods, if used appropriately, can: minimise waste; deliver quality architecture; reduce costs and build times; ensure greater consistency and quality standards; and satisfy green energy requirements.

Zurich is clear that the potential benefits of innovation in construction can be far-reaching. However, despite the range of benefits, many popular MMC solutions also introduce added risks and reduce resilience when compared with more traditional builds, both during construction and throughout a building's lifetime.

Pre-fabricated designs

Advances in pre-fabrication are enabling larger and more complex components, ranging from wall panels to whole sections of buildings – including plumbing and electric fittings – to be manufactured offsite and assembled onsite. This can make construction quicker, cheaper and more accurate. However, there are also additional risks. For example, voids between modules can allow fire, water and smoke to spread quickly through a building.

Cladding

Many of the cladding materials now employed are combustible, and there have been several incidents globally where fires have quickly spread up the side of buildings. It is important that entirely non-combustible systems are chosen, which include all components of the wall build-up. This is a complex area and there are a variety of standards that apply across the built environment.

Timber construction

Timber is considered more sustainable than traditional masonry, making it an attractive option for designers. Engineered material, such as cross-laminated timber (CLT), is also now enabling timber to be used much more comprehensively, and on much larger projects. However, the obvious issue is that timber burns, meaning that its handling in respect of fire safety is extremely complex. We have seen a number of fires that have become more severe due to issues with fire stopping, hidden fire spread in voids, and inappropriate use of combustible cladding.

Many modern methods of construction have been influenced by sustainable building components, which can add elements of risk if not handled appropriately. It is essential that those responsible for constructing the building not only have the appropriate skills, but also that they are overseen by a third-party to ensure build quality. In addition, it is important that residents, maintenance staff and firefighters can all access relevant information quickly and in a format that is simple to understand.

Changes of use

In the modern built environment, many buildings are changing use, which can present new fire risks. Paul Redington explains: "A few years ago we saw a number of former refrigerated warehouse units being converted into offices and other uses, but with the original combustible insulation still in place. That situation has changed, but we need to avoid sleepwalking into a similar scenario as other buildings are re-purposed."

Campaign to expand the combustible cladding ban

Limiting the ban on combustible cladding to high-rise residential buildings could lead to future difficulties if a building is subject to a change of use – from office to residential, for example.

Zurich has also been campaigning for the combustible cladding ban to be extended to apply to the entire external envelope of buildings. Extending the ban to both residential and non-residential developments will ensure that a fire at a lower level does not negatively affect the level of safety provided to the overall building, while also ensuring that future occupancy changes do not result in reduced or inconsistent safety standards.

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Going beyond basic fire safety guidelines

Fire safety and building regulations and standards provide a starting point, but to reduce the human impact of fire, these should be treated as the bare minimum requirement.

Fire remains one of the most prevalent and destructive risks property owners and occupiers will face, and the human impact can be enormous. Many building owners consider basic fire safety and building regulations to offer a good degree of fire safety. However, our fire loss history in the built environment shows that these fail to fully protect properties from fire, and lack the required human element. Ultimately, this means that they fail to sufficiently encapsulate elements of resilience, both physical and mental.

Our recommendation is that organisations go beyond regulations and standards, and carefully consider the human impact of fire.

With the likelihood and severity of large and complex fires increasing, the human cost of fire has never been greater. This has major implications for municipal organisations, and the individuals and communities they serve. Managing fire risk has never been so important.

How Zurich Municipal can help

Visit **newsandviews.zurich. co.uk** to find all our content on managing fire risk, including our dedicated *Fire Risk Resource*.

Or, to discuss any aspect of this whitepaper further, or for more information, email us at **info@ zurichmunicipal.com**, or call us on 0800 232 1901.

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