



# One property manager registers 450 buildings for safety fund

NEWS: 02/09/20 - 4.00pm by **PETER APPS**

One of the UK's largest private property managers has applied for cladding remediation funding for 450 buildings, representing 75% of all the high-rise blocks it manages and enough work to take up 90% of the total fund.

**In a briefing note to leaseholders, Rendall & Rittner said it had registered “well over” 450 buildings for the government’s £1bn Building Safety Fund. The company has 615 buildings on its books.**

The figures are the latest indication of the scale of demand for just [£1bn of funding put forward in March](#) to pay for the removal of dangerous cladding systems from high rises.

The government estimated that a total of 1,700 buildings taller than 18m would need funding, but the figures from Rendall & Rittner suggest that this may be an underestimate.

The £1bn fund [will cover only about 500 buildings](#) and will be allocated based on the speed with which cladding removal can begin.

The document, obtained by Inside Housing, also outlines the scale of the issues that property managers and leaseholders face.

Discussing the process of securing ‘EWS1’ forms – confirmation from a surveyor that a building’s external facade is safe – the document reads: “There is a national shortage of experts who have the skills, together with the necessary professional indemnity insurance cover to carry out these checks, which are by their nature specialist.”

It noted that [the application of government advice to buildings below 18m](#) in January appears to have brought “an additional 88,000 buildings into scope”.

The firm has managed to secure EWS1 forms for 22% of its portfolio, with a further 8% of its blocks currently being investigated. In 14% the freeholder is carrying out the checks, and the remainder have not yet got EWS1 forms, meaning leaseholders will be unable to sell their homes.

Rendall & Rittner manages a total of 1,087 buildings, including the 615 high rises, comprising an estimated 75,000 units.

The firm noted that interim safety measures, such as a waking watch, cost “£10k per week or more”, while the cost of alarm systems ranges from between “£100k to over £250k depending on the size and complexity of the building”.

It added: “Whilst the costs of building remediation are covered by the fund, these mitigating measures are not and are having to be borne by leaseholders. We believe that this is inequitable and places an extreme financial and emotional burden on our leaseholders.”

It also added that once defects are declared to insurers, premiums rise “six to 10 fold”.

“Again, this extra cost is having to be borne by leaseholders, through no fault of their own,” the document said.

“We understand that these are extremely challenging times for all and have long had concerns over the impact which government policy relating to facade safety is having on the safety as well as the financial and



The £1bn Building Safety Fund will cover only about 500 buildings and will be allocated based on the speed with which cladding removal can begin (Picture: Getty).

emotional well-being of our customers,” the document said.

“In many cases our customers are facing huge bills for interim safety measures. Others are unable to re-mortgage or sell their apartments in the absence of an EWS1 form.

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“We do not believe that it is fair that leaseholders have to foot the bill for what is a systemic failure by consecutive governments over many years to maintain appropriate standards of fire safety in construction methods. In light of the size of the challenge and the risks attached, we believe that the government should step in and ensure that this cost burden is not focused on a relatively small number of individuals.”

#### READ MORE

- [Housing association leaseholders face huge cladding costs if Building Safety Fund applications fail.](#)
- [Khan writes to 51 private and social landlords over ‘unacceptable’ pace of Grenfell-style cladding removal.](#)



Leaseholders launch judicial review against ‘irrational, unfair’ cladding funding rules.

# One in three landlords expects to need at least two years to comply with Building Safety Bill, survey finds

[NEWS](#): 15/09/20 by **LUCIE HEATH**

**A third of housing bosses expect their organisations will need more than two years to get up to speed with the Building Safety Bill’s requirements, while costs remain a major concern, new research has found.**

[A poll of social and private landlords](#) representing a total of 1,048 high-rise buildings found that 33% thought it would take them more than 25 months to demonstrate compliance with all parts of the Building Safety Bill.

Published in July, the bill [contains wide-ranging changes to current laws concerning building safety](#), including the introduction of a new regulator that can impose sanctions on those found to be in breach of safety standards.

Respondents highlighted several issues with complying with the legislation, including its complexity, the absence of clarity, competing organisational priorities and the volume of high-rise buildings some would need to submit to the new regulator.

The cost of becoming compliant was also an issue, with 45% saying the bill would have a significant negative impact on their organisations’ finances and a further 33% saying it would have a moderately negative impact.

More than half of respondents (56%) had fewer than 20 high-rise buildings in their portfolio, with 33% having 20 to 150, and 11% having more than 150.

More than three-quarters of respondents (78%) said their organisations had so far written no ‘building safety cases’, while 22% said they had written between one and five.

Building safety cases are part of a new building safety regime the government proposed in April as part of its [response to its ‘Building a Safer Future’ consultation](#).

Organisations will also have to name ‘dutyholders’ responsible for fire and structural safety risks in buildings. Dutyholders will be required to create a safety case containing all the relevant information for each building.

No respondents said they could provide an estimate for the average cost of producing each building safety case.

The survey was carried out by software platform TrackMyRisks on behalf of the Building Safety Register.

Matt Hodges-Long, co-founder of TrackMyRisks, said: “Much of the media attention relating to Building Safety Bill impacts is understandably written from a resident’s perspective.

“We felt it was important to understand the scale of impact on the supply side of the equation so we surveyed senior housing execs representing more than 1,000 higher risk buildings.

“The overwhelming narrative through all of our one-to-one interviews was the absence of guidance, the scale of the implementation challenge and how long it would take to achieve the required level of cultural change.”

# Defective' cavity barriers 'contributed nothing' to slow fire in Worcester Park blaze, report reveals

NEWS: 09/09/20 - 6.00pm by  
**PETER APPS AND LUCIE HEATH**

A timber-framed housing association block in which a serious fire broke out last year was fitted with “defective” cavity barriers that “contributed nothing to control of the fire”, a report obtained by *Inside Housing* reveals.



**Richmond House – a 23-flat building in the Worcester Park development in south-west London, owned by housing association Metropolitan Thames Valley Housing (MTVH) – was almost totally destroyed in the fire one year ago today.**

The report, prepared by consultancy Probyn Miers, reveals that flames were able to rip through a 16cm cavity between the building's main structure and cement board cladding.

This cavity contained three layers of timber

battens, which provided fuel for the fire to burn behind the non-combustible cladding.

This fire spread should have been slowed by cavity barriers – dense blocks of mineral wool insulation that are pressed into gaps to

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## THE RICHMOND HOUSE REPORT: KEY FINDINGS

- **External walls:** The external walls were built with limited combustibility cement board material called HardiePlank, which has a strong A2 fire rating. However, it was fitted to a cavity 16cm deep with three layers of natural timber battens. These burned fiercely during the fire, allowing flames to spread rapidly, vertically and horizontally, inside the wall. Cavity barriers that should have slowed this spread were too small and had almost no effect. This was apparently the result of “errors in the design”.
- **Balconies:** Balconies were made from steel, finished with glass reinforced plastic and timber decking. Both burned during the fire.
- **Roof:** The edges of the roof were boxed in using a plastic board that burned and melted, allowing fire into the roof, which was made of timber and also burned. Cavity barriers that should have prevented the spread of fire were missing. Fire-stopping “may have been absent” but this “probably contributed little”, given how far the fire had already spread
- **Internal walls and doors:** Internal walls were constructed with plasterboard attached to timber stud walls. They resisted the spread of fire more effectively than the outer walls. The walls largely prevented the spread of the fire to the north-east of the building, despite the south-west being almost completely destroyed. An escape staircase remained largely undamaged.

close them to flame. But the barriers installed at Richmond House were defective, the report found.

“In Richmond House, the cavity barriers that were fitted were defective: they were too small to close the cavity and they would have contributed nothing to control of the fire,” the report said. “Based on the limited number of drawings that I have seen, the defects in the cavity barrier installation appear to be the result of errors in the design.”

This issue meant the fire was able to spread “almost unhindered both horizontally and vertically” through this cavity. When it reached the roof, it met a plastic board attached to the battens that “burned readily and melted away”.

Cavity barriers should have been fitted to prevent spread into the roof, but these were entirely absent.

“There was no effective obstacle to prevent fire spreading into the roof, which there should have been,” the report said.

Absent cavity barriers were an issue in the cladding system at Grenfell Tower, where they were omitted above windows and at the top of the cladding system – in breach of official guidance.

A report on Persimmon Homes developments in December last year concluded that Persimmon has a “systemic nationwide problem” with missing and/or incorrectly installed cavity barriers in its timber frame properties.

The Richmond House block was built by St James, an arm of large house builder Berkeley Group, in 2011, before being sold to Metropolitan Thames Valley for use as shared ownership affordable housing.

Around 60 people, including 17 children, were present in the block at the time of the fire. Although they all escaped alive, they have been rendered homeless, and many are still in temporary accommodation.

Today they made a submission to government calling for reforms to its planned building safety legislation to prevent another fire like the one at Richmond House.

They say the current package of reforms “fails to tackle the fundamental need to hold construction companies and property owners responsible for the construction failures they were responsible for”.

“We had to run for our lives in the middle of the night, in many cases carrying babies and young children, and wearing only our nightclothes. Residents opened their curtains to see a wall of flame. We all escaped the flames by moments and were lucky to come out with our lives,” the submission says.

“The requirement for cavity barriers is not new, complex or unknown. It does not arise because of modern cladding materials but is a basic fire safety requirement identified within the existing building safety regime. The nature of construction is that failures can remain hidden for years and are only revealed, as with us, when there is a fire. By this time construction companies have moved on and seek to avoid or deny liability.”

It adds that Berkeley and MTVH are “refusing to pay compensation and have instructed commercial professional dispute lawyers to deny any liability”.

It also notes that Richmond House – which was below 11m in height – would not be considered a higher-risk building under the new regime.

They say the bill needs “an increase in scope to cover all innocent leasehold victims coupled with backing of real financial consequences that cover the costs of remediation”.

Former resident Jennifer Frame told Inside Housing: “The attention and focus and funding has been so much on cladding, which is obviously a huge issue, it’s the most visible one but there’s so many other less visible issues that are not getting the

attention they deserve. We’ve seen with our own eyes what a lack of cavity barriers and compartmentation can do to a building.”

A spokesperson for MTVH said: “In November 2019, MTVH provided Richmond House residents with the intrusive survey report into their building from forensic architects, Probyn Miers.

This was in line with our commitment to understand what happened on the night of the fire and to share information with residents. The report was discussed openly at a meeting attended by the residents and other stakeholders.

“At the same time, independent experts also carried out assessments of the other buildings at The Hamptons owned by MTVH, and the findings of these investigations were then discussed at a series of drop-in events with residents, where the proposed remedial works were outlined. St James will be carrying out the remedial works on behalf of MTVH on the properties we own on the estate.”

Richmond House will be rebuilt in the same style of construction, with planning permission granted by Sutton Council last week.

A spokesperson for St James said: “A year on, St James once again extends its sincere sympathies to everyone affected by this terrible fire. As we have explained to residents, the cavity barriers contributed to the spread of the fire, although its initial cause was never identified. Richmond House has since been demolished, planning consent has just been given for its replacement and construction work will proceed once the detailed design work has been completed and building regulations approval is in place.

“St James continues to work with MTVH, the council and all residents on The Hamptons development to make sure wider remedial works across the site are carried out properly, safely and with a minimum of disruption.”

# New balcony fire standards prompt specification warning



NEWS: 27 SEPTEMBER 2020

A fire at Samuel Garside House on De Pass Gardens in Barking in 2019 is believed to have started after a resident's barbecue on a balcony.

**Designers working on high-rise residential projects have been warned to “specify with caution” in order to meet the fire requirements of a new British Standard governing balconies and terraces.**

BS 8579 Guide to the Design of Balconies and Terraces was released at the end of August but developers and main contractors were already understood to be upgrading completed and signed-off flat developments before this in order to deliver the Class A fire performance at 18m+ they anticipated to be detailed in the new standard.

- [MMC elevates balcony blaze risk, insurer claims](#)
- [Timber balconies removed from Westminster towers amid fire safety fears](#)

The Chartered Institute of Architectural Technologists (CIAT) warned that while such moves were “to be applauded”, there were industry concerns of a “double whammy” of implementing the new standard and new, unfamiliar products coming to market which could jeopardise safety.

The CIAT said that manufacturers are responding with Class A product developments but there were still concerns in the industry that some of the new solutions coming to market may not be adequately tested or designed for use at height or outdoors.

Julian Thurbin, of specialist building products manufacturer Wallbarn, said: “This situation has the potential to affect a wide range of building components within balcony and terrace construction.

“We are receiving high volumes of calls from construction professionals, including designers and cost engineers requiring guidance on the products that can – and cannot – be considered.

“We have also heard reports of completed and fully legal products being revised with exterior materials, including balcony constructions, removed post sign-off and replaced with Class A systems – in extreme cases across the entire project and not just 18m and above.

It highlights the importance parties are placing on delivering safe, compliant buildings and underlines the need to be

absolutely sure only the best quality products and systems make it to site.”

Thurbin explained that while heavy-duty plastic pedestals have traditionally been specified to support suspended balcony or terrace decking and paving, these pedestals must now be metal to achieve Class A performance.

He added: “There’s also the question of product testing – in the case of pedestals load-bearing is critical – which we appreciate is a challenge.

However, our advice is always to consult with your original supplier (whatever the product and even if they do not supply a Class A alternative) to at least understand the questions you should be asking of a new supplier.

“Given that this issue centres around outdoor structures mounted 18m or more above ground level, industry concerns about product performance must be given serious consideration; system failure at height has the potential to have tragic consequences.”



# More than 60% of councils delay fire door safety works

NEWS 21/09/20 BY  
**NATHANIEL BARKER**

Six in 10 councils delayed fire door maintenance or inspection programmes in the first half of the year, raising concerns about the impact of the coronavirus pandemic on housing safety.

Data gathered by the British Woodworking Federation (BWF) from 147 UK local authorities that have retained housing stock show that 52% postponed maintenance and replacement works for fire doors. That figure rose to more than 60%, when delays to inspection programmes were included.

At least 26,318 fire doors were scheduled for maintenance or replacement between January and June, but work did not go ahead for 16,580 (63%), affecting at least 9,954 homes.

More than half of councils (53%) said the COVID-19 pandemic and associated

restrictions were the cause of the delays.

Nearly two-thirds (65%) intended to resume the planned work by the end of the year, but nearly a third (31%) said they had not yet set a date.

Fire-door safety entered the spotlight in March 2018 [when the Metropolitan Police revealed](#) that an undamaged flat entrance door taken from Grenfell Tower had withstood fire and smoke for just 15 minutes when tested – half the minimum time required.

Widespread issues with commonly-used fire door [products later emerged through a government testing programme](#).

In June last year, Inside Housing revealed that one in 10 fire doors across council housing stock had been identified since Grenfell as being unlikely to meet building regulations, but that only 8% of these had been replaced.

The research has been published to coincide with Fire Door Safety Week, which is organised by the BWF and is intended to raise awareness about fire doors' role in keeping buildings safe.

Helen Hewitt, chief executive of the BWF, said it was "vital" that building owners restart inspections and take action to fix any faulty fire doors "as soon as possible".

She added: "It is clear COVID-19 has understandably impacted on service delivery across a variety of sectors, but fires do not stop.

"With the UK lockdown period forcing many people to spend more time at home, people without fit-for-purpose fire doors have been put at risk.

"There is a need for continued and urgent focus on ensuring the safety of all building occupants, whether in local authority or privately-rented accommodation, workplaces or other building types."

Several councils surveyed said they had continued emergency fire door works throughout lockdown, the BWF said.

But 31% said fire door inspection programmes were delayed, affecting at least 12,596 doors.



# Catalyst increased fire safety spend by 1,800% in the year

NEWS: 02/10/201 2:30PM BY **DOMINIC BRADY**

London-based association Catalyst has seen its fire safety spending explode from £800,000 to £15.8m in the past year following new fire safety guidance from central government, its annual accounts reveal.

In its 2019/20 annual report, the 34,000-home landlord's spending on fire safety measures soared by 1,875%, causing it to miss its social housing operating margin and put pressure on its general operating margin.

The G15 landlord said the sharp increase was due to a major programme to remediate Grenfell-style aluminium composite material cladding from all its buildings that stand at 18m, as well spending on temporary fire safety measures such as waking watches, the costs of which have not been passed onto customers.

Catalyst said its performance against its "high business performance corporate objective" has been impacted by "increasing need to invest in fire safety measures for our properties, an additional £4m was spent above the amount originally budgeted".

The housing association said that after 22 successive advice notes from the central government on fire safety, "hopefully the goalposts have now stopped moving".

It added: "The level of investment necessary to implement the emerging standards is substantial and will only be very partially covered by government grant.

"We have reviewed our financial capacity to fund our new homes programme and have scaled this back somewhat over the next three or four years to accommodate the much higher spend on fire safety modifications to existing buildings."

The organisation identified "evolving fire safety guidance" as a potential risk to the business going forward.

Surplus before tax rose from £30m to £82m but Catalyst noted that this is due to its [merger with Aldwyck](#), which was completed in the year, and said its adjusted surplus grew by less to just £40m.

Turnover at the landlord also rose significantly from £286m to £63m and Catalyst increased its liquidity by issuing £100m in retained bonds and signing £125m of new facilities.

Ian McDermott, chief executive of Catalyst,

said: "This has been a year of integration and consolidation. Since Aldwyck joined Catalyst in May 2019, we have made a strong start in delivering on the promise,

and promises, of a union between two like-minded and complementary organisations. We approach the year ahead and beyond with ambition and confidence."



# Fire safety checks hit record low in England

Nationally, the number of fire safety checks by Fire Rescue Services across the country fell to a record low of 48,400 last year – 43% fewer than in 2010-11.

Fire services conduct fire safety checks (audits) on most public buildings and the shared areas of residential properties such as flats to make sure they are in line with safety laws. For instance, Dorset and Wiltshire firefighters carried out nearly 1,000 fewer safety checks on buildings last year compared with a decade ago, new figures reveal.

In addition, Home Office data shows Northumberland Fire and Rescue Service completed 427 fire safety audits on buildings in 2019-20. This was 1,133 fewer than the 1,560 inspections recorded in 2010-11, when comparable records began.

Lancashire Fire and Rescue Service completed 1,418 fire safety audits on buildings in 2019-20. This was the lowest number of inspections since comparable records began in 2010-11.

Consequently, Matt Wrack, Fire Brigades Union general secretary, said: “The Grenfell Tower fire exposed the shameful state of building safety in the UK. The scale of the building safety crisis is beyond all current comprehension – and firefighters have a crucial role to play in tackling it.”

Mr Wrack said the union supports the Government’s [new bills on fire safety and building safety](#), which aim to expand firefighters’ prevention and protection work, but added: “To be effective, the fire and rescue service must be properly funded.”

Almost three-quarters of respondents to a CIOB survey on the ‘golden thread’ – the looming requirement for accurate and up-to-date records of project data – said it should apply to all buildings, not just the higher-risk residential buildings as set out in the government’s draft Building Safety Bill.

The research, carried out by the CIOB and software company i3PT Certification, asked industry professionals about their understanding of the golden thread and how it will be delivered in practice.

Initial analysis shows some 74% of respondents felt the draft bill did not go far enough, and that the golden thread should become law for all buildings, while a further 13% said it was ‘relevant’ to other sectors. Many were concerned about healthcare, care homes and schools.

The research indicated that industry culture would be the biggest obstacle to implementing the golden thread. Some 82% of respondents picked this out as a ‘blocker’ to change, followed by commercial investment (52%), lack of repercussions (48%), unclear requirements (43%) and technology (32%).

Furthermore, more than half (54%) agreed with the statement, “the industry understands the need to change but the right culture is not in place to support it”. Only 9% disagreed.

The consensus is it will take construction a long time to implement the changes necessary to deliver a golden thread of

information on all high-risk projects. Only 7% of respondents thought it would take less than 12 months, while one in five said it would take between one and two years. Some 41% thought it would require two to five years and 23% said over five years.

Encouragingly though, 85% of survey respondents said the golden thread will “enable better decision-making and create a clearer chain of accountability across the built environment”.

The ‘golden thread’ was identified by Dame Judith Hackitt in her Independent Review of Building Regulations and Fire Safety, published after the Grenfell fire. She highlighted the need for “robust record keeping, with a digital ‘golden thread’ of key building information running through all phases of design, construction and occupation”. The i3PT/CIOB survey gathered responses from 156 built environment professionals and organisations. A full analysis will be published this month.



This news story is in partnership with [Barbour EHS](#), a specialist information service provider supporting professionals across sectors including fire and security, FM, health and safety, sustainability and energy.



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# High-rise apartment fire in South Korea leads to “dozens hospitalised”

A fire on the evening of October 9 in the city of Ulsan in South Korea has led to “dozens hospitalised” according to reports, with the blaze continuing until the early hours of Friday morning. Multiple floors of the 33-storey building were engulfed.

While [no deaths have been reported so far](#), 93 people have been sent to hospital with minor injuries caused by the smoke and damage and over 1,000 emergency service members responded to the incident. Slabs of concrete were seen falling to the street, as videos surfaced on social media not long after the blaze broke out.

According to the city’s news agency, “strong

winds fanned the flames and made it difficult to completely extinguish the fire”, with flames still burning on the top three floors of the building into Friday morning. The blaze is now said to have [been brought under control](#).

The cause remains unconfirmed, with an investigation already underway. Reports suggest that the fire started between the eighth and twelfth floors.

Back in late April, in a city not far from South Korea’s capital, Seoul, a fire also [broke out an unfinished warehouse construction site](#), leaving 38 workers dead and another 10 seriously injured.

Incidents such as this were on the agenda at the recent Construction Fire Safety Conference, which took place on Wednesday 14 October.

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# Are two fires on the Shetland Islands a canary in the coal mine for modular construction?

**INSIGHT:** 16/10/20 7:05AM BY **[PETER APPS](#)**

The total loss of a hotel and bird observatory to fires on the Shetland Islands have not made much of an impact on the built environment sector. But should they serve as a warning about the risk of offsite construction, asks *Peter Apps*.

It was 12.30am when Jonathan (not his real name) woke up. An automated voice had disturbed his sleep: “There is an emergency situation in the hotel. Please stand by for further information.”

A worker on an offshore gas plant, he was used to alarms in the middle of the night, and he went to the window to check for any signs of fire. He saw none – just the dark night of the Shetland Islands, nearly 300 miles off the coast of Scotland.

But there was no noise, no smell of burning. Jonathan started to think he had dreamt the alarm, and was about to go back to bed. But then it crackled into life once more: “There

is an emergency. Please evacuate the hotel immediately.”

Jonathan grabbed his phone and walked out of the building – The Moorfield Hotel in the village of Brae, Shetland. His colleagues, all workers on a Total offshore gas rig, and a couple, who were visiting Shetland for a cycling holiday, joined him outside. For around 40 minutes, they stood around in the chilly car park chatting, suspecting it was a false alarm.

“The boys were joking around saying, ‘My laptop’s in there, my watch is in there,’ but the fire brigade were there so we all thought they will put this out,” Jonathan recalls. But

then they saw flames under the roof. Around 30 minutes later, the entire roof was alight.

“The fire brigade didn’t really seem to have the equipment to deal with it,” Jonathan recalls. “Pretty early on when they went up and inside, they all kind of walked down pretty calmly. The impression I got was, ‘There’s not much we can do here.’”

Coaches arrived to take the guests to another hotel. As they left, Jonathan and his colleagues could see flames spreading down into the hotel rooms, devouring the possessions they brought for their long stints on the rig. By morning, the entire hotel was a heap of smouldering rubble.

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The Moorfield Hotel following the fire (picture: Alamy)

Fires should not spread in this way. Whole buildings should not be lost. But this is not the first time the islands had experienced such an event recently. In April 2019, a blaze broke out in a large bird observatory and guest house on Fair Isle, tearing through its structure.

Volunteer firefighters on the tiny island (population: 60) found themselves contending with a fire they could not hope to contain. Additional firefighters landed in helicopters and arrived by ferry. But like the hotel, the observatory was reduced to a pile of wreckage.

The loss was felt intensely on Fair Isle. The building – which had 24 bedrooms, lounge and dining facilities, a shop, offices and separate accommodation for the warden and his family – was the linchpin of the small island's fragile economy.

What links these two buildings, as well as their destruction in a fire, is the way they were built.

Shetland is not an easy place for traditional construction. Not only is it remote, but the weather conditions in the middle of the North Sea are far from ideal. So in recent years, the islands have embraced something that is now becoming increasingly popular in mainland UK: modern methods of construction (MMC). Both buildings were constructed into modules in factories and then shipped to Shetland on ferries and assembled on site.

The 106-bed Moorfield Hotel was built in 2013 from modules constructed in a factory

in Northern Ireland out of structural insulated panels (SIPs) – combustible polyurethane insulation held between two sheets of oriented strand board, a product made from compressed wood flakes.

This makes a strong, light building product, but also one that is vulnerable to fire. The strand board had a surface spread of flame rating of Class 3 – making it a 'high-risk' product in Scottish building regulations – and the plastic insulation was combustible. The hotel was built by contractor McAleer & Rushe.

Frances Maria Peacock, a fire engineer and director of FMP Architectural, says the images of the hotel were "horrifying".

"No building should be able to burn to the extent that there is nothing left of it, and the level of destruction in this case is indicative of how combustible the SIPs were," she says.

McAleer & Rushe did not respond to a request for comment on this story, but has previously said it has provided all relevant documentation to the local fire service for review.

The bird observatory was constructed to replace a previous observatory in 2010. It too was built into modules offsite, at a factory in Orkney. It was constructed from glue laminated timber and JJI-Joists – engineered timber made by James Jones & Sons. The firm's website boasts of a 45% market share and use by "every major UK house builder".

A spokesperson for James Jones & Sons said that as it had no influence on the design or

specification of the building, it did not wish to comment.

Still listed as a case study on the Timber Trade Federation website, the structure comprised 30 engineered timber modules, made from 9,300 linear metres of wood.

The exterior was made from timber cladding panels with an insulation system comprising a cavity and a heat pump to keep the building warm.

Investigations into both fires are ongoing and – given the total destruction – likely to be difficult. But both fires raise a large and urgent question: are these buildings a canary in the coal mine for the use of modular more widely in the UK?

Modular and MMC construction is a rapidly growing trend in UK construction. The case for it is well known: it can be both quicker and far more environmentally friendly than traditional building methods and may help to solve some chronic workforce and construction quality issues.

The number of residential developers has grown in recent years and housing associations are required to deliver 25% of their 'strategic partnership' deals with government through MMC. But as we expand this sector, have we taken the time to really understand the fire risks?

"The huge benefit of modular construction is if you do it right you can do everything better and safer. But you need to invest in the research and design up front to ensure you understand the risks. I'm not seeing that

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being done," says Dr Rory Hadden, a lecturer in fire investigation at the University of Edinburgh. "If you use the analogy of building a car, you invest a lot of time in the research and design, the crash testing, the safety – and line all of that up before selling to people. The construction sector hasn't quite got that mindset."

There are two aspects of modular construction that worry experts: the use of combustible materials for the structure of the building and the presence of large cavities through which fire can spread.

Jon Curtis, director of Ringley Building Engineering, says: "You can have a superb compartment fixed to another superb compartment, but there will be gaps and cavities where they join. That's where we need the focus to be. If you can't put the Meccano set together properly what you create is a risk for substantial fire spread."

This is a serious problem. If flames enter a cavity, it is near impossible for the fire service to put the blaze out. And if the structure is combustible, you have the conditions for rapid fire spread, which could totally destroy the building.

Ian Abley, technical designer and fire safety expert, adds: "The nature of a modular building is that you are stacking boxes on top of each other, and once you've stacked them up you are often left with gaps between them. Those cavities can potentially run straight through from the facade to the core of the building. When fire gets into the cavity if you've got modules made from combustible materials, the fire is just going to spread from one compartment to the next."

Building regulations require these cavities to be fitted with barriers so fire cannot spread. But achieving this in the design and then assuring it is achieved when the modules are installed on site is a big problem.

"Intumescent cavity barriers don't last 50 years. The products don't exist. That's where the innovation needs to be," Mr Abley says.

Mr Curtis says that constructing the necessary barriers is not beyond the industry, but ensuring they are properly installed is the challenge.

"You can make a very accurately engineered section in a factory environment. This is not beyond the wit of man," he says. "But you need to skill up the people who are going to be doing it on site. The corners which have been cut in traditional construction can't afford to be for modular. The implications are more disastrous in this form of construction."

Many modular developers do take quality seriously - keenly aware of the lingering consumer suspicion that is associated with 'prefabricated' homes.

Many have secured warranties specifically assuring the quality of their products and the Build Offsite Property Assurance Scheme offers certification that the buildings are constructed to a standard that will last 60 years. A recent Memorandum of Understanding between various warranty providers set a minimum standard for assessing modular buildings, which should help maintain consistent standards in the nascent industry.

The industry argues its buildings are fire safe, so long as they are built and maintained properly. They are also required - like all developers - to comply with building regulations.

But do regulations - written with traditional building in mind - properly reflect the challenges of modular?

He said that this requires better oversight of what is happening on site and reform of

building regulations to make them more applicable to modular building. "It's just not a straight read across," he says. "You need regulations that are directly applicable. As a construction sector we have the turning circle of an ocean liner and we need to learn to walk before we run with this technology."

Dr Hadden believes these are issues that can be fixed. "We spend our lives surrounded by products we have deemed safe enough. You can make it [modular] safe if you invest in the R&D – you need destructive testing to see where the flaws are and to fix them," he says.

The problem is buildings are going up without this work being done, and by the same construction sector which has shown a poor track record for safety and quality in recent years. The country is scrambling to deal with the enormous fall-out of this with regards to Grenfell Tower, and the thousands of other properties around the country with dangerous external walls.

Everyone walked out of The Moorfield Hotel alive and the Fair Isle bird observatory did not have guests on the morning of the fire. The warden and his family who lived there all year round were at church when the fire broke out and smoke was spotted by a passing ferry. Both fires were non-fatal. But similar technology is being used to build schools and high rises, with limited escape stairs and no fire alarms.

"A two-storey hotel where everyone is going to get a heads-up is one thing, but if you turn it vertically and it's a building with a sleeping risk it's a different thing," Mr Abley says.

"We are building big towers using these construction methods. The industry is going to come to a crashing halt if the first fire comes about."

And that is an outcome the entire sector will want to avoid.

