

Passive Fire Guidance For Property Acquisition

A guide to Passive Fire Systems by Evolutions Fire



SAVING LIVES
SAVING COSTS
SAVING TIME

www.evolutionsfireprotection.com





Passive. Prevention. Protection



The latest economic cost of Fire in England was estimated to be £8.3 billion

Source: National Archives Economic Cost of Fire Estimates 2008

FIRE

Fires are an ever-present threat that impact people, property and the economy in all countries around the world. They are a case of when not if.

GRENFELL serves as an everlasting example of what can happen if the right measures are not in place.

In three years since the tragic event that ended the lives of 74 people the inquiry continues. Findings from the inquiry reveal significant flaws in modern construction practices.

It's absolutely vital that an incident of this scale never happens again. Therefore, this document has been put together to help inform potential property buyers of key factors to look for when purchasing a new or old building.

The fire regulations are currently under review and are likely to introduce some significant changes.

By following this guidance alongside the Regulatory Reform (Fire Safety) Order 2005 (RRFSO) and Approved Document B it will allow the purchaser to make an informed decision into the building that is being purchased to determine its feasibility. This document will also cover the measures which must be undertaken in any building to provide safety in construction.

Ryan Farmer
Director
Evolutions Fire Protection

R. Farmer



Of 15,005 Primary Building Fires 16% affected the entire building from 2018 - 2019

Source: National Statistics Detailed Analysis of Fires 2018-2019

Negligence can cost time, money and lives.

Making growth a safe thing

Acquiring a property can be a great investment, but without conducting thorough due diligence checks it can be a costly experience.

£900 BILLION is the estimated size of the UK commercial property market¹. This market is full with hundreds of potential properties for the right investor. But what checks have been conducted to say that the property being purchased is safe in the event of a fire?

No investor wishes to purchase a condemned building. Taking into account that over the past few years insurance claims for fire damage have reduced in number, the value of each claim has risen significantly in cost. Therefore stricter measures are put in place by insurance underwriters to include the provision of suitable protection. This change is due to a number of factors including modern construction practices, advances in technology and the effects of significant fire spread.

Given these factors, it is only suitable that an equal standard of protection is afforded in the event of a fire. This protection can take two forms; Active Protection and Passive Protection.

Active Protection being the provision of fire alarms, smoke detectors, heat detectors, sounders, mechanical extracts and sprinklers.

And Passive Fire Protection is the provision of fire doors, fire stopping and the protection of structure and load-bearing elements to withstand fire, which Evolutions Fire specialise in. The locations for these measures are defined by a Fire Strategy Drawing. Every commercial or complex building should have one, If the property does not have a fire strategy to hand, it is not unreasonable to assume that it has little to no provision for passive protection.

¹ Shawbrook Bank Commercial UK Property Market Recent Trend 2019





Shine the light, spot it early

It is important to spot defective passive fire protection early. It is often overlooked in preliminary inspections but can often have the largest cost to put right. So its absolutely vital a detailed compartmentation survey is carried out to understand what the condition of the property is.

Passive Protection

Unfortunately, not every building has Passive Fire Protection. Even those that do, may not be to the required specification to abide by modern regulations. Passive Fire Protection can take many forms but they all revolve around a core principle.

Compartmentation.

Compartmentation is a proven strategy to control the spread of fire and smoke by creating sub-divisions within the structure of a buildings, such as protected zones, corridors, rooms that will physically stop the smoke/flame spread for a set duration. Without compartmentation a fire could freely and quickly travel into rooms, corridors or floors.

In order to provide Compartmentation, it is vital the structure can physically withstand the duration required as defined by its Fire Strategy. Most internal walls can take the form of masonry construction or plasterboard construction. Its important that both can meet the required specification to provide means of structural protection and fire resistance.



“It would not be unreasonable to assume that during the past decade, our commercial building stock has become less resilient to fire – and this goes some way to explaining the steep increase in fire losses”.

Roy Watkinson,

Technical & Commercial Insurance
Director, AXA Insurance, FRM Journal 2011

After the structure is acceptable, suitable protection should be made for services, openings or hole penetrating a compartment wall, floor or ceiling, that may be present in the inner workings of the property or in the accessible corridor of the property.

This protection can take many forms, one form is Fire Stopping which is the combination of fire resistant materials with the constructional fabric of the building to create an air-tight and sealed structure. This prevents the spread of flame, smoke and heat throughout the building.

Fire Stopping is a crucial component not only because it is a legal requirement. It's sole purpose is to protect occupants and the building in the event of a fire, thus giving as much time as possible for the Fire Brigade to gain control of the fire reducing damage, cost and saving lives.

Fire Doors are a secondary form of passive protection. Designed to allow an individual travel to through compartments freely without hindrance to the structural compartmentation. Due to the door set being designed to match the fire resistance of the compartment it is within. However, a fire door has a set series of requirements which must be maintained regularly to ensure that it will function when required.

Modern Construction

Construction is ever-evolving as competitors aim to build eco-friendly, competitive, attractive buildings there has been a significant change in the materials used, the most prevalent being combustible materials, but there are very

few provisions or requirements for these materials.

The use of combustible materials has called for an ever growing need to change the current building regulations to account for them. As the current regulations account for properties constructed of concrete, brick and mortar they do not consider many modern systems. This loophole allows modern construction to be interpreted in comparison to the original system.

Without a set definition in the regulations for modern systems this loophole allows exploitation in many areas of modern construction. Which may result in the unsuitable fabrication of compartmentation.



Real Example



Kingfisher Court,
Kirklees Student
Accomodation
CLOSED

NO IMMUNITY, an example is Kingfisher Court in Kirklees which was vacated after a prohibition order was served by West Yorkshire Fire and Rescue Service (WYFRS) in Aug 2019. The block was opened in 2018 and a few months later was issued an enforcement order due to the severity of the fire safety work required which was estimated to cost £635,000.

In September 2019, it was shown to have 220 different safety flaws despite being signed off as a safe accommodation. The 'catalogue' of fire safety 'shortcomings' was explained in a survey undertaken by an independent firm. Commissioned by the administrators, highlighting defects such as incomplete walls, 'unsuitable' use of non-fire resistant expanding foam, walls

Ignoring your responsibilities as an owner may come back to haunt you in the future.

'not built in line with the manufacturer's specification' and a 'complete absence' of fire-resistant paint on beams and columns.

Just to reiterate, the building required work costing £635,000 to repair and rectify the issues and make them 'habitable'. This was not paid as the investors could not reclaim their investment or collect any rent on the accommodation given the necessary prohibition notice. The building owner Mederco then collapsed last year. With up to £152 million owed and only £17 million repaid it's set to be a long drawn out road for all of the investors. A leaked administrators' report into Mederco's collapse revealed that 'cleaning up the financial mess' could take 'another two years.'

It is fortunate that the building was prevented from opening quickly after the issues were identified to protect the next generation of academics. With the additional financial cost to investors whose average investment was £35,000, hold no opportunity to reclaim their investment with the additional legal and financial implications.

Catch the issues early, save time & cost.

Impartial Review

It is important to have an independent survey conducted by a third-party accredited specialist who has no ties to the main contractor to avoid bias and get the true insight to what protection the building could provide. We often recommend that two independent surveys are conducted one by an accredited installer of passive fire protection systems and one by a governing body such as ASFP, BM Trada, IFE or similar both of which should reveal similar outcomes;

- Insight into the current condition of the property
- An estimated cost/proposal to rectify any current defects
- Potential reduction in purchase price to account for remedial works required

If Mederco had conducted an independent inspection it could have prevented them from taking over the inadequate building and put the onus back onto the Builder who failed to provide suitable compartmentation.



A competent seller would have all evidence made available with no delays

Warning signs

MULTIPLE FACTORS Knowing the warning signs can be complex with regards to compartmentation and passive fire protection measures. One of the primary warning signs is documentation. If the property does not have sufficient information to identify all present fire compartments (Walls/Floors), fire stopping contractors and their relevant documentation or even a regular

maintenance schedule for the fire door sets. Then it's clear that there has been little regard for the provision of passive fire protection. The most common warning sign are Fire Risk Assessments as they highlight compartmentation defects in the accessible compartments such as Risers/Communal Area. If defects are present in these locations it is not unreasonable to assume they exist elsewhere

What to look for

It's essential to look for the following with regards to passive fire protection systems to ensure that the potential acquisition has been conducted to the best of capabilities.

1

INSTALLER Are they NVQ Level 2 certified? Do they know the manufacturers installation specifications? When were they last trained? Do they have an in-date industry approved accreditation? (FIRAS, ASFP, BM TRADA)

2

PRODUCTS Correct product selection is vital to the success of a firestopping seal. Products used must be BS476 Pt 22 or BS EN 1366-3/4 tested. This test dictates the fire resistance on non-load bearing elements.

3

DOCUMENTATION A competent contractor should provide as much documentation as possible. (Product data, safety data, certificates, manufacturers installation specifications, before and after photos, labelled installs, and suitable recording methods among others) If this is not available then its of grave concern.

4

ACCREDITATION An accredited installer is regularly audited to ensure they are still complying with the requirements to provide passive fire protection. Only those with an accreditation have the highest chance to provide competent fire stopping.

Saving costs



* Costs to rectify vary on a per building basis, this statement is indicative into the ultimatum of rectifying the building or ignoring it running the risk and being shut-down.

It is easier and more cost effective to resolve any defects during the construction stage of a property. However it will always be cost effective and a legal responsibility to rectify the buildings defects at any stage to prevent loss of life in comparison to handling the aftermath of a fire with associated costs. By being proactive in the search for defective compartmentation, potential cost savings can be made. Rectification is often a cost that catches many by surprise but based on the severity of construction, lack thereof protection and accessibility or time frame may requires the building to be rebuilt internally from scratch. The figures provided in this page are merely speculation but are similar to costs that Evolutions Fire Protection have witnessed in the industry talking with clients.

OPTION	DIFFICULTY	PRICE*
Fix a building at Construction	Easy	£30,000
Fix a building after Construction	Achievable	£ 300,000
Fix a building under a Prohibition Notice	Mediocre	£ 600,000
Fix a building under a Enforcement Notice	Difficult	£ 900,000
Fire Damages & Loss of Life	Impossible	£4.5 million

* Costs to rectify vary on a per building basis, the figures provided are speculation. The increase of cost can be placed to a number of factors such as increased labour requirements due to time constraints or access to the areas of compartmentation or the condition of the property.

Saving lives

PEOPLE MATTER no one should die in a fire, people are more likely to be overcome by smoke or gas than to die directly by the fire. Of the 2977 fatalities caused by fire since 2010¹, 1057 were recorded to have been overcome directly by the gas/smoke, compared to the 771 who directly died by burns. While 1149 died from both burns and Smoke or unknown/other causes.

It is therefore absolutely vital that adequate measures to prevent the travel of smoke and flame are taken seriously. By conducting an independent survey into the property before the purchase it can prevent the acquisition of a future disaster saving the lives of those who may be within.

¹ FIRE0504 Fatalities from fire by cause of death, England 2009 - 2019



How can we help?

We have four steps to be followed to ensure that your purchasing a safe building.



Survey

The first step is to have an independent survey. Evolutions Fire Protection will attend site, inspect all compartment walls and floors including concealed voids to locate any defects.



Rectify

Evolutions can then rectify those defects in-house using our BM Trada accreditation for Fire Stopping & Fire Doors to bring the building to a safe condition.



Restore

Evolutions will be able to restore the property to the high level of finish it may have previously had to ensure it is ready for use in quick succession.



Purchase

Evolutions Fire will certificate all installations and confirmation of compartments thus ensuring the building is completely safe for use and ready for purchase.

Our areas



Fire Stopping



Fire Doors



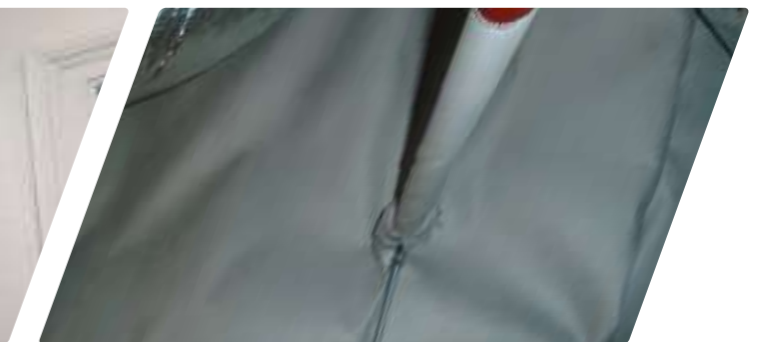
Fire Rated Paint



Fire Walls



Fire ECU Unit



Fire Curtains



 **evolutions**
fire protection
Evolving the Industry

YOUR legal responsibility to
protect
YOUR building and its
occupants

Saving time

By using a BM Trada Accredited Installer it can be guaranteed to save headache and delays by providing leading protection.

THE DIAMOND IN THE ROUGH Get us involved with your investment or purchase and we will assist in locating the pitfalls with Modern Construction and the financial burdens it may reveal. Ensuring the investment can grow and be safe from the unforeseen.

By using a Third-Party Accredited Installer such as Evolutions Fire Protection our competence is regularly proven by BM Trada thanks to the bi-yearly audits they conduct. Ensuring only the highest quality, warranted and competent seals possible.

Turn over & contact us today for cost, time and life saving services.

Don't become a relic, keep up with the change and save money at the same time.

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