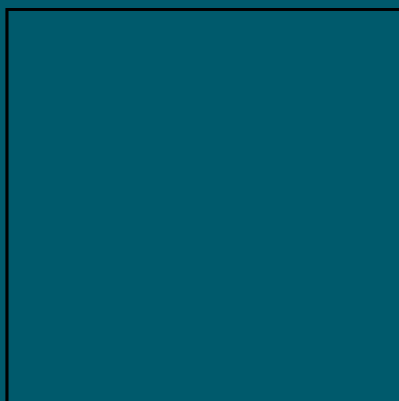


Installation and Refurbishment of Offices

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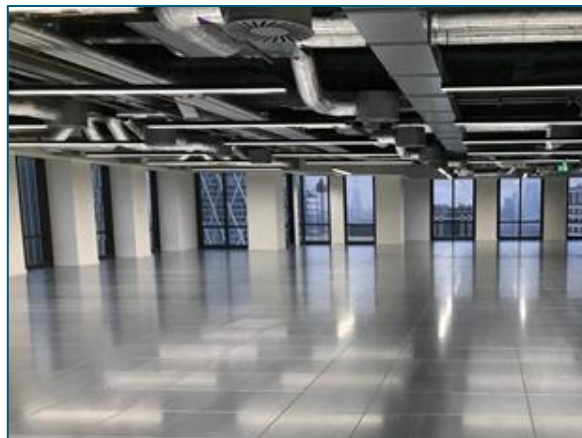


Alterations to new or existing buildings, whether involving initial fit out, strip and fit outs on individual or multiple floors, exposes the property and persons within to additional risks. It is essential that these risks are identified and that appropriate control measures are implemented to prevent damage such as fire to the building and/or loss of life.

Introduction

Alterations to new or existing buildings, whether involving initial fit out, strip and fit outs on individual or multiple floors, exposes the property and persons within to additional risks. It is essential that these risks are identified and that appropriate control measures are implemented to prevent damage such as fire to the building and/or loss of life.

Each building is different, having unique features with works and alterations occurring at differing phases, necessitating a tailored approach to the management of risk both prior to and during alterations. Regardless of whether the building may be unoccupied or be occupied with a high number of persons working within on a daily basis, it is vital that all parties involved from the principal designer/contractor, user, owner to building managers not only fulfil their legal duties such as required under the [Construction \(Design and Management\) Regulations 2015](#) and [Health and Safety at Work etc. Act 1974](#), but also ensure adequate protection of the property. Parties involved need to have a clear understanding of the risks to which the building and persons within are exposed and ensure that appropriate and any required control measures are implemented and regularly monitored throughout the project to ensure compliance.



Existing building fire protection systems such as sprinkler and automatic fire detection and alarms need to be taken into account to ensure that alterations/impairments of such systems do not result in unnecessary increased exposure to property damage and life safety. Isolating any fire protection system without initially taking proper precautions, or leaving such systems impaired longer than necessary is to be avoided. Additional considerations are needed for high-rise buildings, which may be occupied by other tenants, involve multiple floor projects, structural alterations and changes to the building's original fire strategy/fire compartmentation.

Hazards and Exposures

Works to new and existing buildings introduce a wide range of additional hazards and increased exposures, which can include:

- Fire Inception
 - hot work processes, such as welding, use of blow torches, hot air guns, cutting, grinding and drilling
 - electrical wiring faults/defects of existing and temporary supplies
 - **contractor's electrical appliances (office and welfare), with inadequate electrical supply (use of multiple extension leads)**
 - **contractor's tools**
 - temporary heating to office and welfare areas including drying-out building and contractor's clothing
 - use and storage of flammable substances
- Increased Fire Load
 - **contractor's site offices, changing rooms and welfare facilities**
 - combustible waste accumulating on floors and within the building, prior to removal
 - storage of combustible building materials including packaging, prior to installation
 - use of plastic waste bins
 - use of non-flame-retardant sheeting/protective sheeting

- Impairment of Fire Protection Systems
 - isolation of sprinkler systems
 - isolation of automatic fire detection and alarm systems
- Compromised Passive Fire Protection
 - removal of existing building services, including data cables, prior to reinstatement of fire stopping
 - fire doors left/propped open, including fire doors to mechanical and electrical risers
 - fire shutter and fire curtain operation obscured or isolated
 - floor penetrations, including provision of accommodation staircases

Management

- Property insurers should be informed of planned works to ensure compliance of insurer's latest guidelines and any specific requirements.
- An Impairment Policy should be operational for the disclosure to insurers of planned and unplanned impairments of fire protection systems.
Aviva's property 'Impairment Management' Loss Prevention Standard guidance document is available, see 'Additional Information'.
- Managing Change formal procedures should be introduced, to identify and manage hazards and exposures which left unchallenged could lead to damage or loss.
Aviva's 'Managing Change' Loss Prevention Standard guidance document is available, see 'Additional Information'.
- Risk assessments and method statements (RAMS) should be prepared and agreed in advance of works by all parties.
- A Site Fire Safety Plan should be prepared, specific to the site and based on up to date fire risk assessments, and this documentation should be reviewed and updated at regular intervals throughout the schedule of works and as circumstances change.
- Formal documented inspections and regular site meetings throughout the period of works should be regularly undertaken by both building management and the Principal Contractor to ensure compliance of agreed/required controls measures and to identify any new additional risks and originally unforeseen risks.
- Supervisors/fire marshals should ensure compliance of control measures on a daily basis.
- Procedures are to be in place to ensure that contractors receive training of site-specific hazards and control measures by way of induction and toolbox talks.
- The latest edition (9th) of The Joint Code of Practice on the Protection from Fire of Construction Sites and Buildings Undergoing Renovation (JCoP) is to apply. First published in 1992, the Joint Code of Practice was introduced in response to two large fire losses.

Control Measures

Multiple Floor Projects

Work on multiple floors at the same time can result in unnecessary large exposures and should be avoided where possible. However, it is acknowledged that this may not always be possible, and when this occurs, there may be a need for greater control measures in addition to those normally required for single floor fit outs and those included within this document. Examples include:

- **Work on Consecutive Floors**
Impairing fire protection systems (including sprinklers, any other fixed extinguishing systems and automatic fire alarms) on consecutive floors. This should be avoided so that impairments of different floor levels are planned so that no two adjacent floors are impaired at the same time.
Should a multiple floor impairment of consecutive floors be required, the Principal Contractor should submit a formal application to the property insurers detailing the additional measures to be adopted to reduce the exposure to loss or damage during the period of any multi floor impairment.
- **Installation of Accommodation Staircases**
Penetration of one or more floors: Opening floor plates may adversely affect the building's ability to withstand a fire as originally designed, especially in high-rise buildings involving a number of floors, and thereby creating an unprotected vertical shaft allowing fire, smoke and hot gases to rapidly spread throughout the building which may otherwise have been contained by the building's original horizontal fire compartment design. Firefighting becomes more challenging and exposes the building to greater damage/loss of life in respect of other building occupants.

Protection measures include the installation of temporary fire-rated enclosures/sprinkler protection around floor openings and maintaining horizontal compartmentation for high-rise multiple floor projects.

Fire Alarms

- **Fire Alarm Detection/Fire Marshals**
An automatic fire detection and alarm system is to be provided and made operational both during construction and non-construction times. Where an existing system is not present, a temporary automatic fire detection and alarm system is to be installed. During periods of fire alarm detection isolations, fire marshals are to be provided.

Fire detection and alarm systems (including temporary) and manual call points are to maintain a **connection to the main building alarm system and operation of the building's cause and effect, with identification of the floor of activation.**

Alternatively, 24-hour fire marshals are to be provided, ideally full-time dedicated (not part-time role). At least one fire marshal per two floors, although the required number may differ based on various factors, such as the building size, occupancy layout and if multi floor projects/impairments are involved. An **established means of activating the main building alarm and maintaining the building's cause and effect** should be in place. Automatic fire detection should still be installed within high-risk areas, including temporary accommodation used for cooking, drying clothes, offices and storage of flammable liquids and gases.

Sprinkler Protected Buildings

- **Site Office/Welfare Facilities/Stores**
The introduction of a fire load into a building where the sprinklers are impaired or without afforded protection such as at shell and core/CAT A stage, places the building and persons within at a greater risk of **damage/loss of life. Contractor's offices, welfare facilities and stores (including building materials) should be sprinkler protected.** Temporary sprinkler protection may be provided, or early commissioning of planned sprinkler protection within these areas.
- **Atria**
Sprinkler protection to atria is to be maintained, where provided. Alternatively, a 1-hour fire rated wall should be installed to the internal perimeter (accommodation side) of atria glazing.
- **Strip-out**
Combustible items such as carpets, furniture and waste should be removed prior to impairment of the sprinkler system.
- **Suspended Ceilings**
Where sprinkler protection is maintained, all ceiling tiles of suspended ceilings are to remain in place. Missing ceiling tiles will allow hot gases and heat from a fire to vent directly into the ceiling void, which may then spread the fire into the void and beyond in addition to delaying or preventing the operation of sprinkler heads and any fire alarm detectors in the area below.
- **Early Commissioning**
Restoration/commissioning of sprinkler protection should be undertaken at the earliest opportunity. Ceiling works should be scheduled for early completion to permit sprinkler protection to be charged on a floor by floor basis prior to the commencement of joinery works/introduction of fire load onto the floors.

Storage of Combustibles

Combustible materials stored in a building or area without sprinkler protection are to be restricted to the amount required for **1-day's work, fully wrapped with flexible flame retardant** ([LPS 1207](#) - *Requirements for the LPCB approval for fire performance of temporary protective covering materials for use in the interior of buildings*) protective covering and stored away from perimeter glazing. To avoid bulk combustible material storage and an unnecessary fire load within the building, arrangements can be made for materials to be delivered on a daily/just-in-time basis from either suppliers or an off-site storage location from where items can be called-off.

Flame Retardant Protective Coverings

To reduce the fire load and potential for fire spread, protective coverings such as those used to protect internal fixtures and fittings, glazing and wrap/cover combustible items are to be flame retardant, conform to the **requirements of the LPCB's Loss Prevention Standard LPS 1207** and be clearly marked.

Protection of Glazing/Heat Gain

Flame retardant LPS 1207 protective coverings are to be affixed to the accommodation side of all glazing (full height), to reduce the risk of heat gain to combustible contents, as well as to protect against damage.

Waste Bins – Metal

Metal bins (lidded) should be used for the removal of waste daily. Use of plastic bins should be avoided, thereby reducing the fire load and helping to prevent the spread of fire from ignited bins and burning plastic, along with the spread of toxic fumes.

Waste – Removal

Waste bins are to be emptied on a regular basis, with no full or partially full waste bins stored on floors during non-construction times within non-sprinkler protected areas. Sufficient allocation of lift time, waste holding area and skip removals are to be provided, to prevent an accumulation of waste and the resulting increased fire load.

Fire Compartmentation

- **Floor Openings**
Temporary enclosure (minimum 1-hour fire rated) be fitted around existing or planned floor opening to compartmentalise the opening from accommodation side, such as for new internal staircases. Temporary enclosure to be constructed a suitable distance from the planned floor opening to enable penetration of the floor, staircase and fitting of any fire curtains, etc. to be undertaken within the enclosure in a safe manner. Fire shutters/curtains will need to match the fire rating of the existing compartment floor.
- **Riser Fire Doors**
Riser fire doors provide a valuable means of preventing fire and smoke spread on to and between floors, via unstopped riser shafts. Other than when work within risers is to be conducted, riser fire doors are to be closed/locked.
- **Fire Doors/Shutters/Curtains**
Fire doors, fire shutters and fire curtains are designed to limit the spread of flames, smoke and combustion gases in the event of a fire and aid the safe escape of persons. Unless fitted with an automatic closing device, fire doors, shutters and curtains are to be kept closed at all times other than when in use and closure should not be impeded.
- **Fire Stopping**
The removal of existing building services, such as pipes, ducts and cables from within compartment walls and floors leaves breaches in fire compartments. These and any additional penetrations are to be fire stopped at the earliest opportunity in a way that maintains both the integrity rating and insulation rating of the element.

Escape Routes

Escape routes are to be kept clear and not used for storage, to ensure safe unobstructed means of egress is provided at all times.

Landlord Areas

Additional fire loads should not be introduced into landlord areas unless otherwise agreed, with established control measures in place. Sprinkler protection within landlord areas such as a loading bay where storage is present is to be maintained and not compromised such as by alterations to the system, removal of suspended ceilings/tiles and excessive storage overwhelming the capability of the sprinkler system.

Hot Works

Hot works are to be avoided where possible, but where unavoidable, should be kept to an absolute minimum and be strictly controlled under a hot work permit system. A hot work permit management system and associated permit is a formal recorded process used to help control work which is identified as potentially hazardous. Use of hot work is a major cause of losses within commercial properties especially during construction schemes, maintenance and refurbishment projects.

Before any hot works are undertaken, it is necessary to ensure that the permit system used and control measures **such as contractor's own are at least comparable with the requirements of the building owner/manager and that required by the property insurer.**

An example of an Aviva hot work permit can be found at Aviva Risk Management Solutions.

Checklist

A generic Installation and Refurbishment of Offices Checklist is presented in Appendix 1 which can be tailored to your own organisation.

Specialist Partner Solutions

Aviva Risk Management Solutions can offer access to a wide range of risk management products and services at preferential rates via our network of Specialist Partners.

For more information please visit:

[Aviva Risk Management Solutions – Specialist Partners](#)

Sources and Useful Links

- Fire Protection Association Shop - [The Joint Code of Practice on the Protection from Fire of Construction Sites and Buildings Undergoing Renovation](#)

Additional Information

Relevant Loss Prevention Standards include:

- Impairment Management
- Managing Change
- Managing Contractors
- Hot Work Operations (with sample Hot Work Permit and Checklist)
- Fire Doors, Fire Shutters and Fire Dampers

To find out more, please visit [Aviva Risk Management Solutions](#) or speak to one of our advisors.

Email us at riskadvice@aviva.com or call 0345 366 6666.*

*Calls may be recorded and/or monitored for our joint protection.

Appendix 1 – Installation and Refurbishment of Offices Checklist



Location	
Date	
Completed by (name and signature)	

	Installation and Refurbishment of Offices Checklist	Y/N	Comments
1.	Have risk assessments and method statements (RAMS) been completed and agreed in advance of works being undertaken?		
2.	Are risk assessments reviewed at regular intervals?		
3.	Has a Site-specific Fire Safety Plan been prepared and is this regularly reviewed?		
4.	Have insurers been informed of planned works and any impairments to fire protection systems?		
5.	Where impairments to fire protection systems are required, have appropriate precautions been taken and arrangements made to ensure systems are not impaired for longer than necessary?		
6.	If work involves multi floor projects, such as work on consecutive floors and installation of accommodation staircases, have insurers been informed, additional control measures agreed and are these being complied with?		
7.	Are regular site inspections undertaken to maintain fire safety and ensure compliance with insurer's requirements?		
8.	Are fire marshals/supervisors fully conversant with fire safety measures, insurer's requirements and are these enforced?		
9.	Do contractors receive training on site-specific hazards and the required control measures by way of induction/toolbox talks?		
10.	Are fire marshal duties clearly defined including procedures for raising an alarm and evacuation procedures?		

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	Installation and Refurbishment of Offices Checklist Contd.	Y/N	Comments
11.	Do work areas provide an automatic fire detection and alarm system including within defined high-risk areas, in accordance with building/insurer requirements (coverage, operation and cause and effect), and/or are the required number of fire marshals provided both during and outside working hours?		
12.	Where the property is designed to be sprinkler protected, are contractor's offices, welfare facilities and stores (including storage of building materials) within a sprinkler protected area?		
13.	Where the property is designed to be sprinkler protected, is sprinkler protection to any atria maintained, or a 1-hour fire rated wall installed to the internal perimeter (accommodation side) of atria glazing?		
14.	Where sprinkler protection is maintained, are all ceiling tiles of suspended ceilings in place?		
15.	Is combustible material storage restricted to the amount required for 1-day's work?		
16.	Are combustible materials fully wrapped with flexible flame retardant (LPS 1207) protective coverings and stored away from perimeter glazing?		
17.	Are all protective coverings flame retardant and clearly marked stating conformity to LPS 1207?		
18.	Are perimeter glazed walls internally lined with full height flame retardant protective coverings conforming to LPS 1207?		
19.	Are metal bins provided and used for storage and removal of waste?		
20.	Is waste removed from work areas on a daily basis and not allowed to be stored within work areas outside working hours?		

	Installation and Refurbishment of Offices Checklist Contd.	Y/N	Comments
21.	Has sufficient provision been made for removal of waste from work areas and disposal from the premises?		
22.	Are riser fire doors kept closed/locked at all times other than when work within risers is being conducted?		
23.	Are fire doors kept closed, and fire doors/curtains/shutters with automatic closures kept clear of obstruction and not tied back, wedged or propped open?		
24.	Have penetrations in compartment walls, floors and ceilings been fire stopped at the earliest opportunity?		
25.	Are designated escape routes free from obstruction and clearly signed?		
26.	Are areas outside the work area such as those under the landlord's control kept clear?		
27.	Is an Aviva (or equivalent) hot work permit management system in operation and used whenever hot work is undertaken?		
28.	Additional comments:		

Please Note

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