



From Last Line of Defence to First Point of Failure

Understanding and Overcoming the Barriers to Effective
Passive Fire Protection

Abhishek Chhabra - Director of International Initiatives,
FCIA



** Using Internet
search: Could be
inaccurate

MCEC Evacuation Map

** The Melbourne Convention and Exhibition Centre (MCEC) was delivered by the **Plenary Group** (via Plenary Conventions Pty Ltd) in partnership with the Victorian Government and other private partners.
Brookfield Multiplex was the primary builder for the original convention centre (completed 2009), while Plenary led the 2018 expansion

Lead Designers

Architects: **Woods Bagot and NH Architecture.**

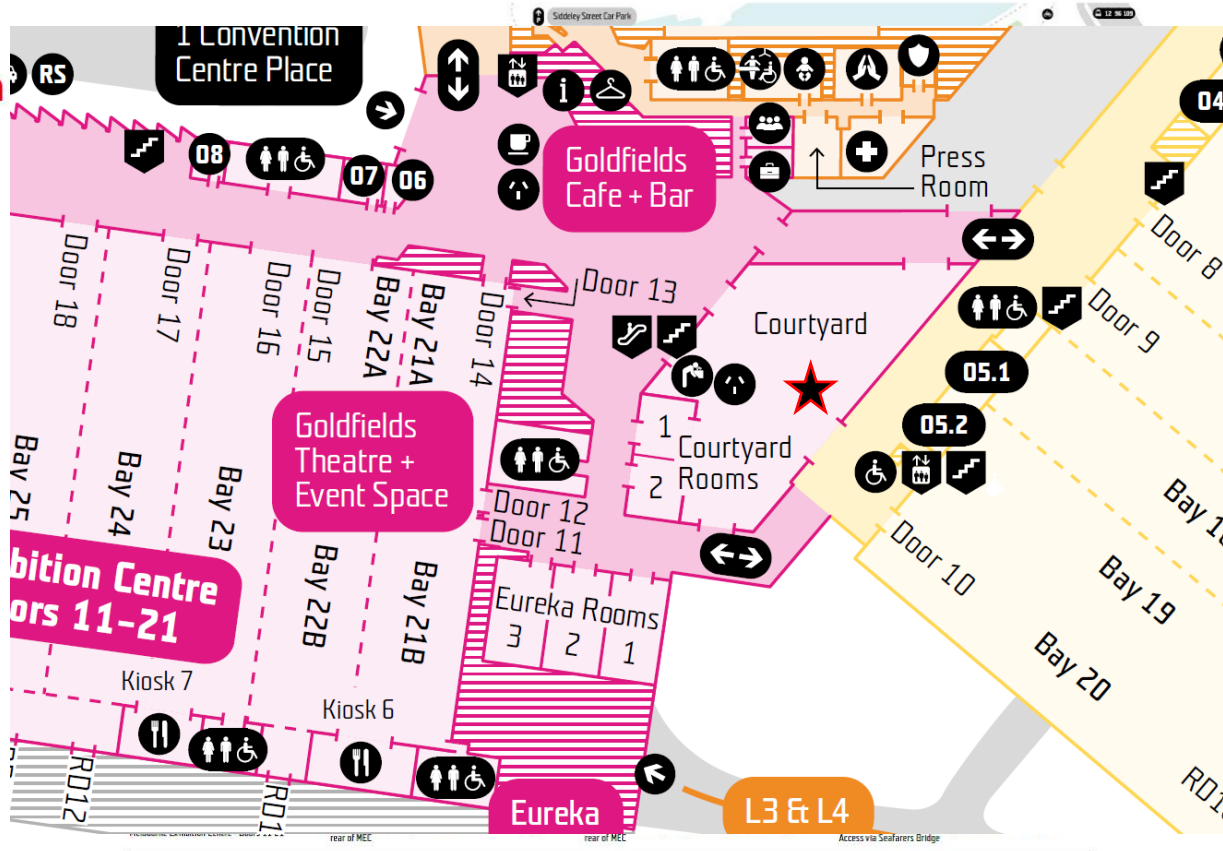
Engineering (Structural & Services): **WSP (formerly WSP Lincolne Scott)** handled structural, civil, mechanical, electrical, and fire engineering.

Project & Technical Management:

RP Infrastructure (formerly Root Partnerships) served as the technical manager for the development.

Interior Elements:

Jacaranda
(Builders/Joinery for specific timber features).



For more
information visit
mcec.com.au

MCEC Evacuation Map_0863_24 November 2023



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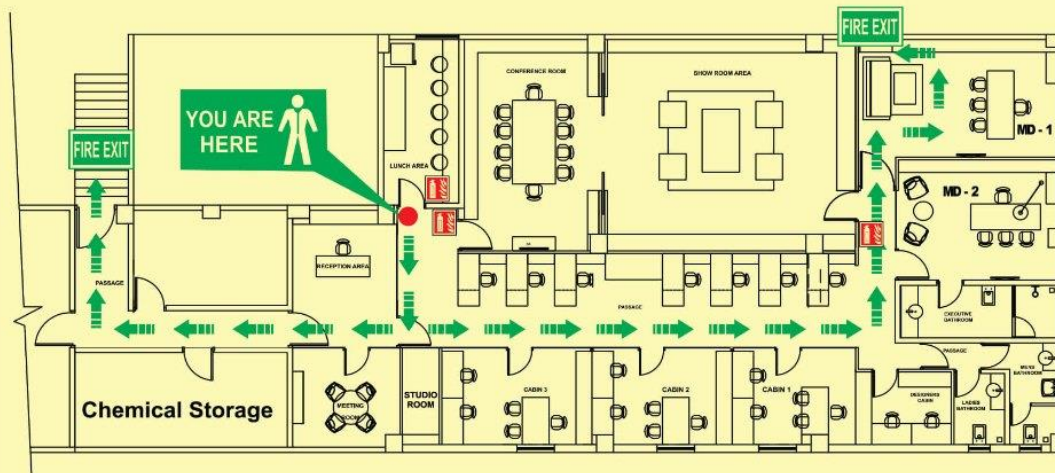


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FIRE
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EMERGENCY ESCAPE ROUTE PLAN



LEGEND	DESCRIPTION
	YOU ARE HERE
	FIRE ESCAPE ROUTE
	FIRE EXTINGUISHER

IN CASE OF EMERGENCY

1. DO NOT PANIC.
2. DO NOT USE ELEVATORS.
3. FOLLOW ARROWS FOR EXIT STAIRCASE LEADING TO ASSEMBLY POINT.

GLOWLIGHT

EVACUATION PLAN

From the website of Lagcey-fm, Novant Health Slides

LEGEND

RE/SMOKE BARRIER
ENING PROTECTIVE

RE BARRIER
ENING PROTECTIVE

RE/SMOKE BARRIER
ENING PROTECTIVE

RE BARRIER
ENING PROTECTIVE

KE BARRIER WALL
E WOOD DOOR

S RATING
(HT)

RATING (SMOKETIGHT)



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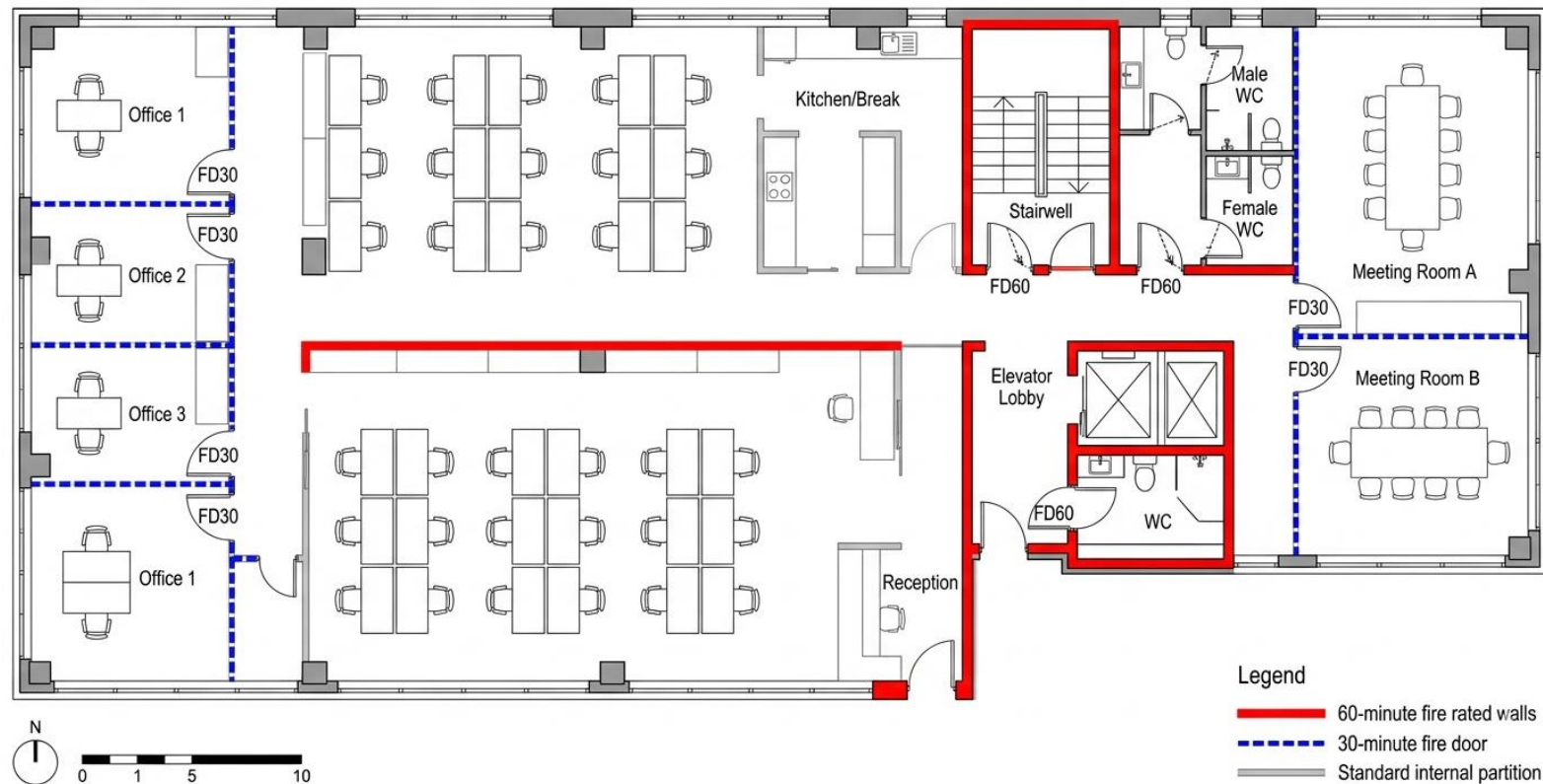


PASSIVE FIRE PROTECTION

THE FIRST LINE OF DEFENSE

Fire and smoke safety are paramount concerns in the built environment. Passive fire protection systems, such as fire-resistive walls, floors, penetration and joint protection systems, fire doors, fire windows, and fire and smoke dampers, offer a proactive, inherent defense and act as the building's first line of resistance against the spread of fire and smoke. These systems protect first-responders and occupants during an emergency evacuation or defend-in-place situation by activating to contain a fire and prevent its spread, effectively compartmentalizing the building. They also maintain the structural integrity of building elements. Passive fire protection systems form the backbone of a building's fire safety strategy.

2D Office Floor Plan: Fire Compartmentation Strategy.



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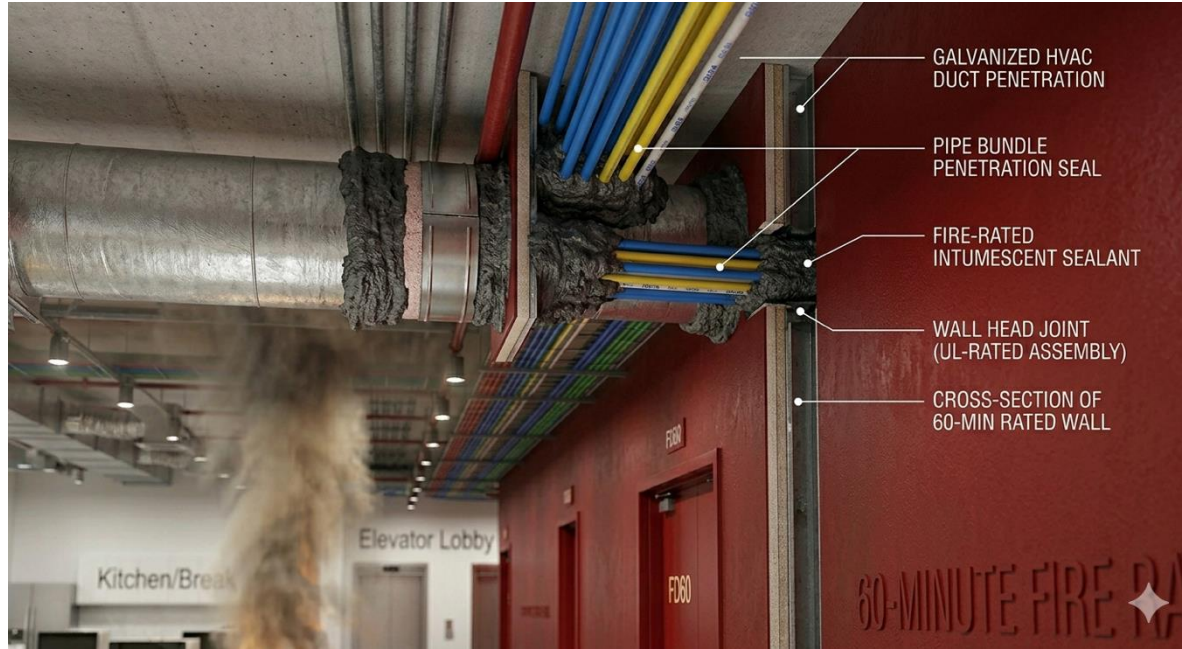


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Who needs to mind the Gap?



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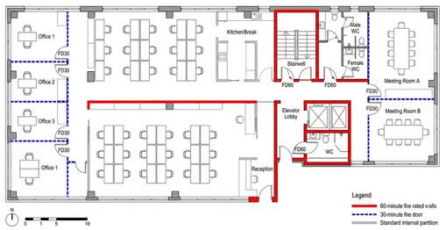


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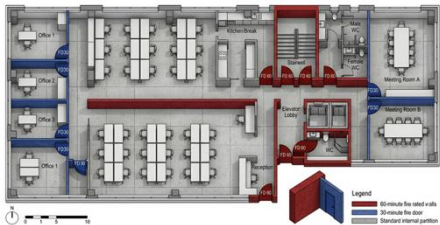


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3D Office Visualization: Fire Compartmentation Strategy.



2D Office Floor Plan: Fire Compartmentation Strategy.



Who needs to mind the Gap?

Designing Firestopping & Compartmentation

Requirement	Deliverable	NCC Reference
Compliance Path	Clearly stated DTS or Performance Solution report.	Section A
Proof of Performance	Accredited test reports or CodeMark certificates.	Clause A5.2
Specific Detail	Accurate drawings of fire-rated junctions and penetrations.	Section C
Competency Proof	Evidence that the design was prepared by a "Competent Person."	State Legislation



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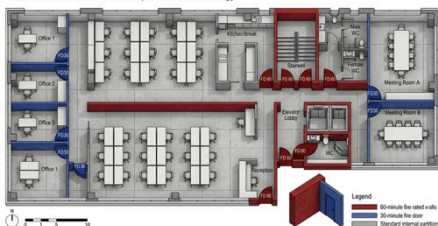


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2D Office Floor Plan: Fire Compartmentation Strategy.



Who needs to mind the Gap?

Installing Firestopping & Compartmentation

Responsibility	NCC 2022 Clause	Liability & Statutory Requirement
Material Fitness	A5G1	General Requirement: Must use materials and products that are "fit for their intended purpose."
Evidence of Suitability	A5G3	Critical Duty: Must provide documented evidence (certificates) that the installation meets the Performance Requirements.
Compliance Pathway	A2G1 & A2G2	Fidelity to Design: Must strictly follow the DTS or Performance Solution provided by the designer.
Fire Protection of Services	C4D15	Technical Accuracy: Must ensure penetrations for services (pipes, cables, ducts) do not reduce the FRL of the element.
Documentary Evidence	A5G9	The Paper Trail: Must provide the Building Surveyor with the data (photos, batch numbers) required for the building manual.

Under the **NCC 2022**, the Installer is no longer just a "tradesperson"—they are like a **compliance technician**. Their liability is anchored in the fact that they are the primary link between a laboratory-tested design and the physical reality of the building.



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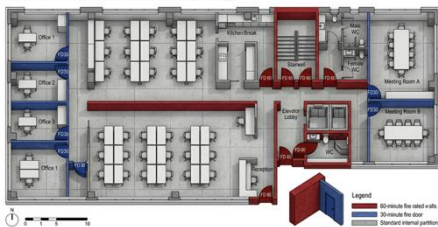


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3D Office Visualization: Fire Compartmentation Strategy.



2D Office Floor Plan: Fire Compartmentation Strategy.



Who needs to mind the Gap?

Inspection of Firestopping & Compartmentation

Responsibility	NCC 2022 Clause	Liability & Statutory Requirement
Verification of Suitability	A5G2	Mandatory Duty: Must ensure all materials and firestopping systems are "fit for purpose" based on documented evidence.
Acceptance of Evidence	A5G3	Critical Liability: Can only accept certificates from an "appropriately qualified person." If the installer isn't certified, the Surveyor carries the risk.
Evidence of Suitability	A5G4	Documentary Proof: Must be satisfied with the form of evidence (e.g., CodeMark, Test Report, or Certificate of Accreditation).
Retention of Records	A5G9	The "Gold Thread": Must maintain a complete record of all evidence used to support the building's compliance for the life of the asset.
Inspection Performance	A5G3(1)(e)	Physical Verification: Relies on a certificate or report from a person who inspected the work. Accredited inspection removes subjectivity.

In the updated structure of **NCC 2022** under the new "Section A" (Governing Requirements), the Inspector or Building Surveyor is no longer just a "checker" but a **Conformity Assessment Auditor**



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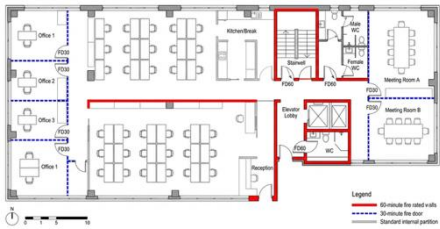


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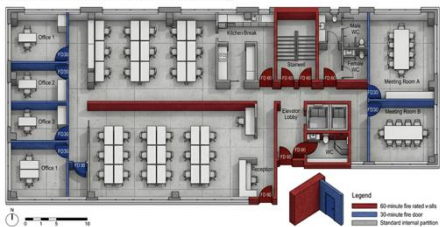


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3D Office Visualization: Fire Compartmentation Strategy



2D Office Floor Plan: Fire Compartmentation Strategy



Who needs to mind the Gap?

Maintenance of Firestopping & Compartmentation

Feature	NCC 2022 Reference	Responsibility & Liability
Maintenance of Safety	Part G5	Must maintain all safety and health features (including PFP) to the level required at the time of construction.
Evidence of Upkeep	A5G9	Legally required to maintain records of all inspections and tests performed during the building's life.
Operational Integrity	Section C (Performance)	Ensuring fire compartments remain unbreached by tenants or contractors after the Occupation Certificate is issued.

While the **NCC** governs the design and construction of a building, it explicitly sets the stage for the building's operational life. The Building Owner's liability shifts from "construction compliance" to "**operational reliability**."



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Systems-thinking

Overcoming the Barriers to Effective Passive Fire
Protection

Systems Adopted in other parts of the world



The Firestop Contractors International Association (FCIA) and the Fire Protection Association (FPA Australia) today signed a Memorandum of Understanding (MoU) to foster and enhance fire safety practices in Australia. This strategic partnership leverages the resources of both organisations through key areas of cooperation for:

- **Knowledge Sharing:** The partnership facilitates the exchange of information and technical expertise related to passive fire protection, as well as enables FCIA's extensive knowledge and resources in passive fire protection for applications within the Australian market.
- **Joint Educational Initiatives:** The collaboration develops and delivers joint workshops, and seminars for industry professionals and establishes collaborative access to both organisations' comprehensive educational resources.
- **Membership Growth:** The alliance cultivates and implements collaborative strategies to attract and retain members within both organisations.
- **Advocacy and Policy Development:** Through cooperative effort, both organisations will work together to advocate for policies and regulations that support and enhance fire safety in Australia.

FCIA and FPA Australia Sign Memorandum of Understanding to Advance Fire Safety in Australia

22 January 2025

Representation and advocacy



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The Golden Language of PFP

Designing
Containment

Installation

Inspection

Maintaining
the facility



THE 'DIIM'TM

The 'DIIM' of FirestoppingTM is defined as the proper 'D'esign, 'I'nstallation, 'I'nspection, and 'M'aintenance of Protection of firestop systems.

When all pieces of the 'DIIM'TM puzzle are present, the result is greater reliability of installed fire-resistance-rated and smoke-resistant assemblies and effective compartmentation.

This ensures that all passive fire protection systems have a better chance of performing as designed, resulting in safer buildings protecting occupants and property and continued use of the building following a fire or smoke event.

THE GLOBAL LANGUAGE OF PASSIVE FIRE PROTECTION
Understanding the 'DIIM' Way : Download White-paper



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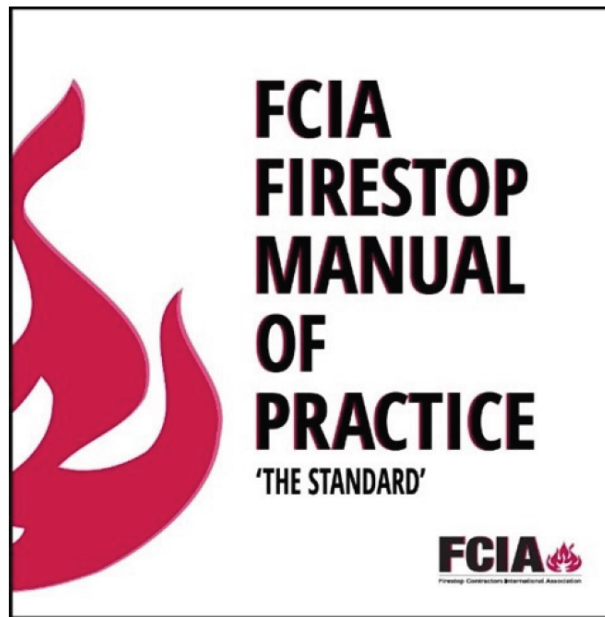
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MANUAL OF PRACTICE

The MOP helps professionals across the world:

- Understand prescriptive and performance-based building codes, which form the basis of designing Passive Fire Protection Systems;
- Learn the standards used to implement assurance systems, including product standards, performance evaluation standards, fire-resistance test methods, installation standards, as well as the standards used to develop inspection regimes.
- Explore the processes used to correlate between building drawings & drawings demonstrating compliance of systems built using materials and how to distinguish between what is compliant and what is not.
- Implement a quality management system-based approach to manage projects.



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ADOPTABLE SYSTEM

FCIA FIRESTOP MANUAL OF PRACTICE 'THE STANDARD'

FM 4991 APPROVED
FIRESTOP CONTRACTOR



Learn more about the FM 4991 Approved Firestop Contractor program

PRACTICES GLOBALLY

The development of numerous firestop solutions, systems, and frameworks have been adopted by international organizations, including the International Firestop Contractors Association (IFCA). These practices have been adopted in various countries, including the United States, Canada, and the United Kingdom. By integrating firestop practices into building design and construction, the risk of fire and life safety is significantly reduced. The consistent, evidence-based approach to firestopping strengthens building safety, ensuring that firestop practices are consistent, evidence-based, and maintain building safety. The protection practices fosters a consistent approach to fire and smoke-related incidents, and maintain building safety. The protection practices fosters a consistent approach to fire and smoke-related incidents, and maintain building safety. The protection practices fosters a consistent approach to fire and smoke-related incidents, and maintain building safety.

UL SOLUTIONS QUALITY
FIRESTOP CONTRACTOR PROGRAM



Learn more about the UL Solutions Quality Firestop Contractor Program and how it can help your business

ACCREDITATION
SPECIAL INSPECTION AIES.



Learn more about the IAS AC 291 Accredited Special Inspection AIES



Created with the exclusive purpose of firestop systems. All are adoptable frameworks.

and life safety implemented or



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Contractor Qualifications

- FM 4991 – Standard for the Approval of Firestop Contractors
- UL Qualified Firestop Contractors
- FM 4991 / UL-ULC Contractors



FM 4991 Standard for the Approval of Firestop Contractors

Accreditation iq.ulprospector.com/en/

The FCIA Accredited Firestop Installers are those that think the FM 4991 Standard for Approval of Firestop Contractors is the best way to ensure the safety of your building.

The goal of the qualified Specialty Firestop Installers is to ensure that all FM 4991 accredited firestop installers are master specific to the FM 4991 Standard for Approval of Firestop Contractors.

Specialty Firestop Installers are eligible to pursue the FM 4991 Standard for Approval of Firestop Contractors.

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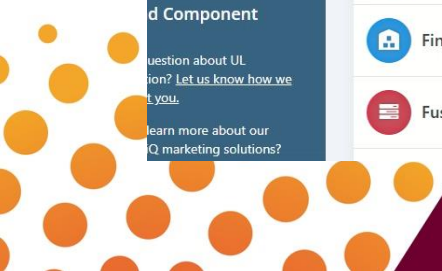
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CERTIFIED
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FCIA FIRESTOP EDUCATION PROGRAM

FCIA FIRESTOP MANUAL OF PRACTICE 'THE STANDARD'



- FEP Level 1 - DIIM

o Proper Design, Installation, Inspection and Maintaining Protection results in safe buildings. FCIA recommends and has developed codes and standards around each aspect of the DIIM

- FEP Level 2 – Firestop Materials, Systems and Analysis

o This detailed 16 hour master class in firestop product and system technology brings knowledge needed to choose, install, inspect and analyze firestop systems.

- FEP Level 3 – Estimating & Project Management

o Modules include Estimating and Project Management tips from industry experts, with multiple items for consideration during company proposal development and field operations.

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Firestop Level 1

'The 'DIIM' of Firestop for Fire and Life Safety'

The **Firestop Level 1** program covers the '**DIIM**' of Firestopping™ – proper 'D'esign, 'I'nstallation, 'I'nspection, and then 'M'aintaining Firestop Protection.

Firestop Level 2

'Firestop Materials and Systems'

With 13 courses comprised of 20+ modules, the **Firestop Level 2 'Firestop Materials and Systems' Program** dives deep into firestopping and effective compartmentation.

Firestop Level 3

'Specifications, Estimating, and Project Management'

'Specifications, Estimating, and Project Management', the **Firestop Level 3 Program**, covers the fundamental basics every Estimator and Project Manager must know.





BUILD A CAREER IN FIRE & LIFE SAFETY

START YOUR JOURNEY AS A STUDENT MEMBER
WITH FIRESTOP CONTRACTORS INTERNATIONAL
ASSOCIATION

WHO CAN JOIN?

STUDENTS CURRENTLY ENROLLED IN ACCREDITED PROGRAMS IN:



ARCHITECTURE



ENGINEERING



FIRE PROTECTION



CONSTRUCTION OR
RELATED FIELDS OF
FIRE & LIFE SAFETY IN
THE BUILT
ENVIRONMENT

Student Membership

- ✓ COMPLIMENTARY ACCESS TO CORE INDUSTRY TECHNICAL RESOURCES
 - ✓ MANUAL OF PRACTICE (MOP) ACCESS
 - ✓ FIRESTOP EDUCATION PROGRAM — FS LO & LI
 - ✓ EARLY EXPOSURE TO GLOBAL BEST PRACTICES
- ✓ INDUSTRY VOCABULARY & TECHNICAL FOUNDATION
- ✓ CONNECTION TO A GLOBAL PROFESSIONAL NETWORK
- ✓ CLEAR CAREER PATHWAY IN A NICHE, HIGH-VALUE SECTOR

WE MAKE
PASSIVE FIRE
PROTECTION
WORK.

JOIN US.

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Designers



Contractors



Inspectors



Manufacturers



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