

# Barrier Management Symposium™

## Barrier Management Systems

Bill McHugh, FCIA

© FCIA 2018



# Objective – Keep Buildings Safe

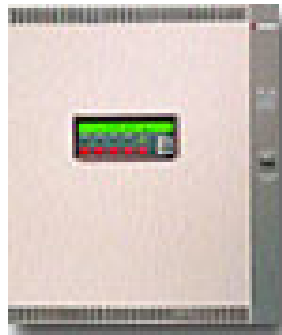
- Barriers are for Safety – DIIM
  - Properly *Designed* and Specified
    - *Tested and Listed Systems* – Directories, Tables
    - *Specified*
  - Professional *Installation* Companies
  - Properly *Inspected* – Commissioned, by Companies
  - *Maintained* –
    - NFPA 101 - 2012 (TJC, CMS)
    - International Fire Code - IFC 2018 – Annually, *Inventory*
- *Effective Compartmentation for Fire & Life Safety*

# Facility Budget Line Item?

- Fire-Sprinklers, Pumps, etc... YES
- Fire-Detection & Alarms... YES
- Barriers?
  - Penetrations, Doors, Dampers, Glazing, Walls/Floors
  - In-House Staff?
  - Barriers Services Contractor?

# “TOTAL FIRE PROTECTION”

- Effective Compartmentation
  - Fire Barriers, Fire Walls/Floors, Smoke Barriers
  - Firestopping, Fire Dampers, Swinging and Rolling Fire Doors, Fire Rated Glazing
- Detection & Alarm Systems
- Sprinkler Suppression Systems
- Education & Egress—
  - Building Owners & Managers, Building Occupants and Firefighters



# Building & Fire Code Requirements

- *Continuous Fire Resistance*
  - **Walls / Horizontal Assemblies – Continuity**
    - Firestop Products Become Firestop Systems
      - Penetrations
      - Joints – Head /Bottom of Wall – Perimeter Joints
    - Fire & Smoke Damper Duct Systems
    - Fire Doors and Hardware Systems
      - Rolling & Swinging
    - Fire Rated Glazing

# Continuity

## Effective Compartmentation Features



# Barrier Continuity SYSTEMS

- **Products Become Systems Through Testing**
  - **Fire & Smoke Barriers** - ASTM E 119, UL 263
  - **Firestopping** - ASTM E 814 / UL 1479, ULC-S-115, UL 2079, E-1966, E-2307, E-2837, ...test methods...”
  - **Fire/Smoke Dampers** - UL 555, UL 555S
  - **Swing/Rolling Fire Doors** - UL 10B, 10C
  - **Fire Rated Glazing** - UL 9
- **SYSTEM Testing = Suitability statement for use of a product in a specific system application**





# Products Become Systems

## Hose Stream = Shock Test

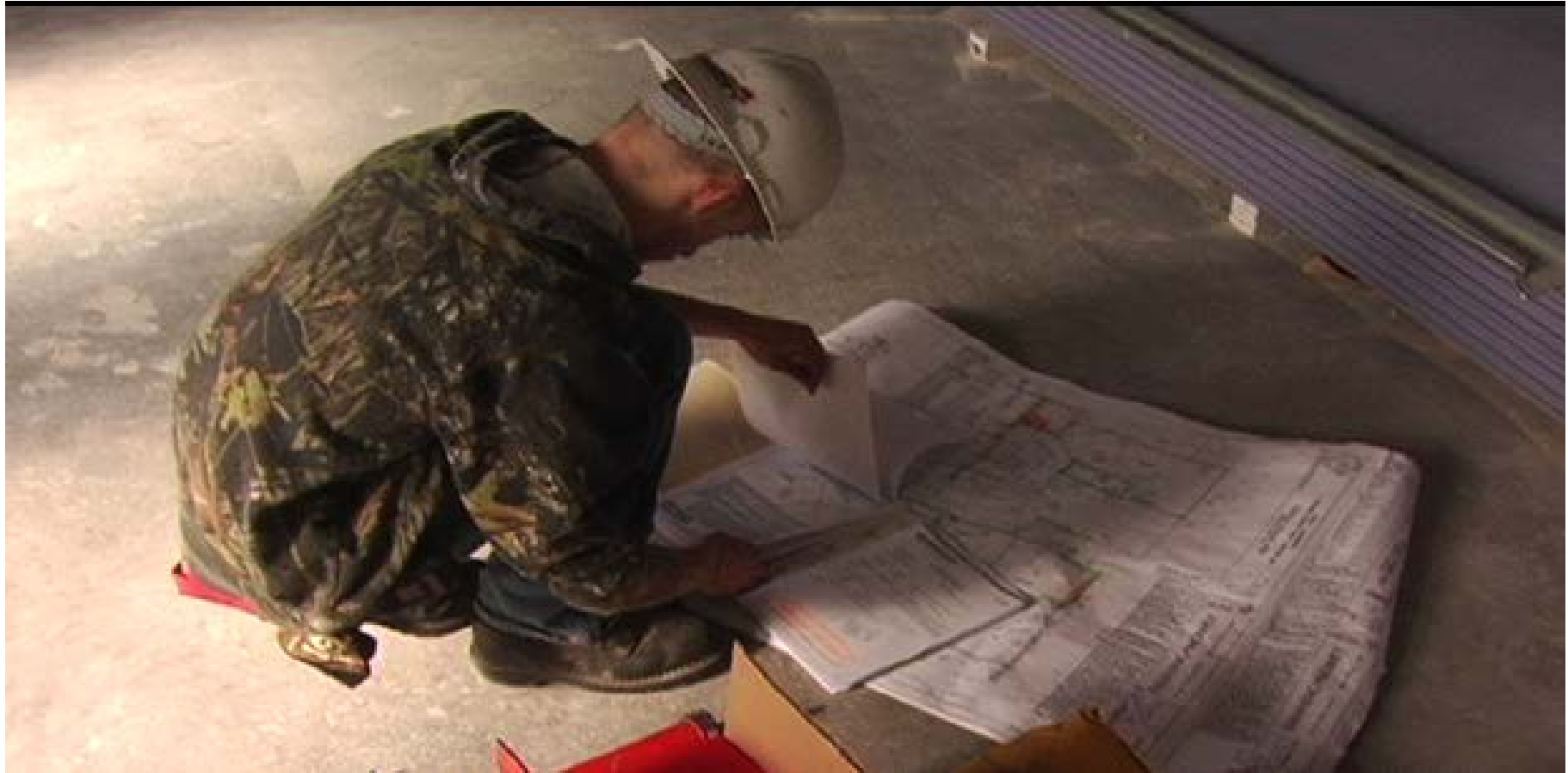






# Barrier Continuity

## I – Installation – Listed Systems

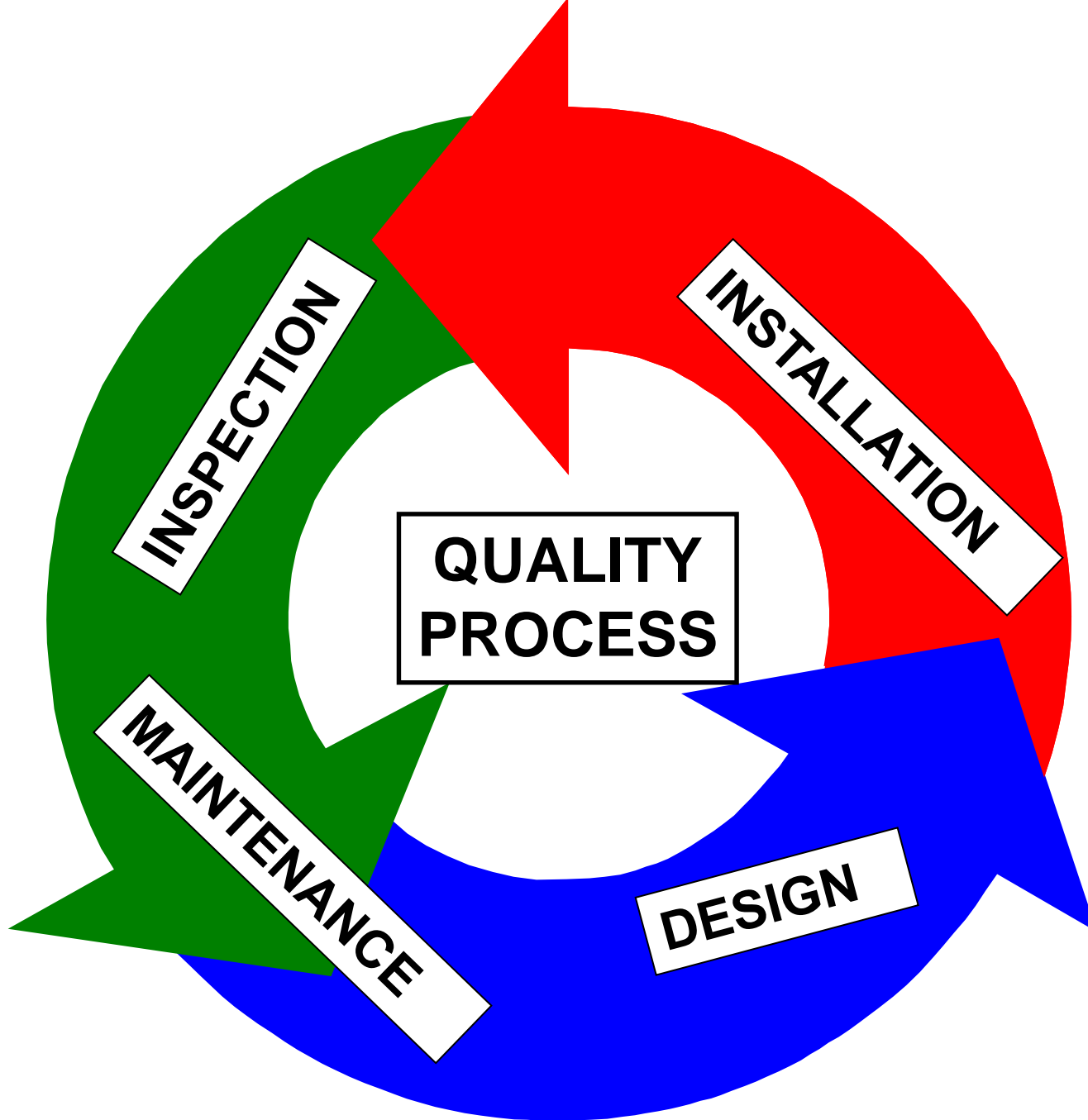


# Contractor Qualifications?

- **Firestopping**
  - **FM 4991 – Standard for the Approval of Firestop Contractors**
  - **UL Qualified Firestop Contractors**
- **Other Industries...**
  - **Company Accreditations?**
  - **Individual Workers?**

# Why Contractor Qualifications?

- **Built right – Building Life Cycle**
- **Documentation**
- **SYSTEMS Selection, Analysis, As-Builts**
  - **F, T, L, W Rated Systems**
  - **Tolerances - Annular Space Sizes, Angles**
  - **Gap Sizes - Undercuts - Framing**
  - **Anchors - Spacing – Hardware**
  - **Closers - Activation Sensors, more...**



# I – Inspection – Options

- **Contractor Self Inspection/Survey**
  - Verify Management System validity
- **Manufacturer Inspection?**
  - Does not exist ... Survey, maybe
- **Special Inspection/Commissioning**
  - Independent 3<sup>rd</sup> Party
  - Destructive, Non Destructive
  - Specified Frequency

# I – Inspection – Options

- **Special Inspection/Commissioning**
  - Inspection Agency Accreditation –
    - IAS AC 291, Others
  - Inspectors
    - FM, UL or IFC Firestop Exam
    - DHI Fire Door Assembly Inspector
    - Fire Damper Manufacturers
    - Fire-Rated Glazing Manufacturers

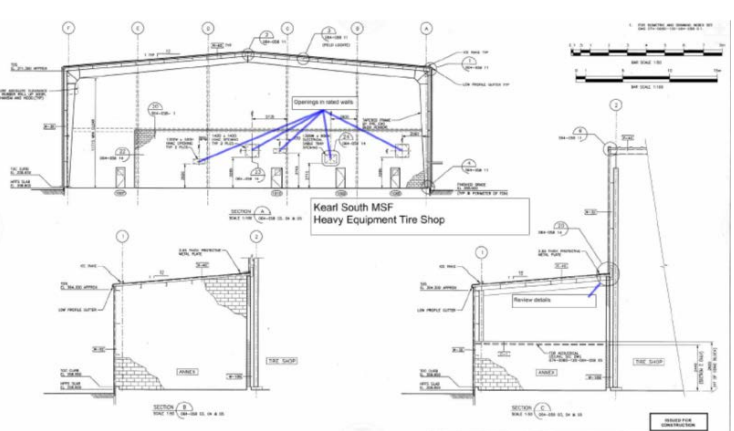
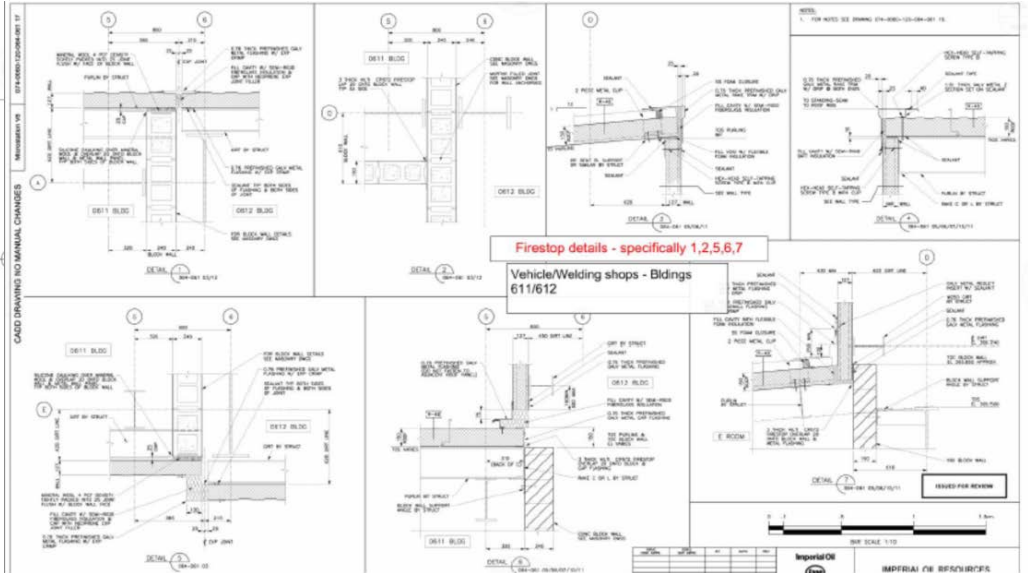
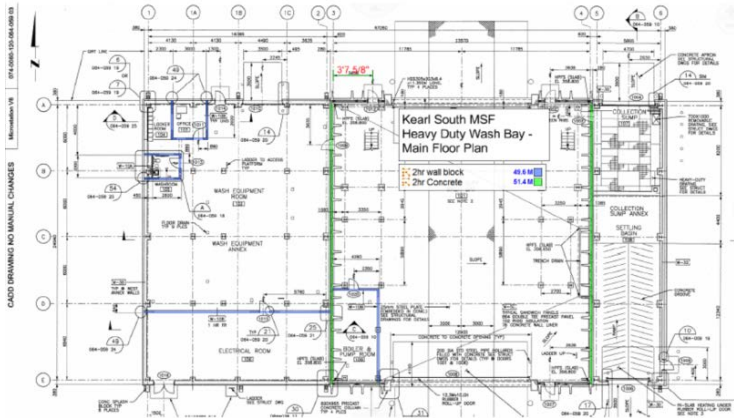


# **Fire Codes Require Maintenance**

- **International Fire Code**
- **NFPA 101**
- **National Building Code of Canada**
- **UAE Fire and Life Safety Code of Practice**
  
- **Minimum Requirements Stated**
  
- **Frequency**

# Compartmentation for Safety

## Life Safety Drawings #1



# National Fire Protection Association - NFPA 101-2012

- **SECTION 4.5.8 Maintenance, Inspection, and Testing.**
- **4.5.8.1** **Whenever or wherever any device**, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or any other feature **is required for compliance** with the provisions of this Code, **such device**, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or other feature **shall thereafter be continuously maintained** in accordance with ***applicable NFPA requirements*** or requirements developed as part of a performance-based design, or as directed by the AHJ. **[101:4.6.12.1, emphasis added]**

# National Fire Protection Association - NFPA 101-2012

- **4.5.8.2** No existing life safety feature shall be removed or reduced where such feature is a requirement for new construction. [101:4.6.12.2]
- **4.5.8.3\*** Existing life safety features **obvious to the public**, if not required by the Code, shall be either maintained or removed. [101:4.6.12.3]
- **4.5.8.4** Any device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or any other feature **requiring periodic testing, inspection, or operation** to ensure its maintenance shall be tested, inspected, or operated as specified elsewhere in this Code or as directed by the AHJ. [101:4.6.12.4]
- **4.5.8.5** Maintenance, inspection, and testing shall be performed under the supervision of a responsible person who shall ensure that testing, inspection, and maintenance are made at specified intervals in accordance with applicable NFPA standards or as directed by the AHJ. [**101:4.6.12.5 , emphasis added**]

# National Fire Protection Association - NFPA 1-2018

- **12.2\* Construction.**
- 12.2.2 Fire safety construction features for new and existing occupancies shall comply with **this Code and the referenced edition of NFPA 101.**
- **12.3 Fire-Resistive Materials and Construction.**
- Δ 12.3.1 The design and construction of fire walls and fire barrier walls that are required to separate buildings or subdivide a building to prevent the spread of fire shall comply with Section 12.3 and NFPA 221.
- **12.3.2\* Quality Assurance for Penetrations and Joints.** In new buildings three stories or greater in height, a quality assurance program for the installation of devices and systems **installed to protect penetration and joints shall be prepared and monitored by the RDP responsible for design. Inspections of firestop systems and fire-resistive joint systems shall be in accordance with 12.3.2.1 and 12.3.2.2.**
- 12.3.2.1&2 Inspection to ASTM E2174/2393

# National Fire Protection Association - NFPA 1-2018

- 12.3.3\* Maintenance of Fire-Resistive Construction, Draft-Stop Partitions, and Roof Coverings.
- **12.3.3.1 Required fire-resistive construction, including fire barriers, fire walls, exterior walls due to location on property, fire-resistive requirements based on type of construction, draftstop partitions, and roof coverings, shall be maintained and shall be properly repaired, restored, or replaced where damaged, altered, breached, penetrated, removed, or improperly installed.**

# National Fire Protection Association - NFPA 1-2018

- 12.3.3.2 Where required, **fire-rated gypsum wallboard** walls or ceilings that are damaged to the extent that through openings exist, the damaged gypsum wallboard shall be **replaced or returned to the required level of fire resistance using a listed repair system or using materials and methods equivalent to the original construction.**
- 12.3.3.3 Where readily accessible, required fire-resistance rated assemblies in high-rise buildings shall be visually inspected for integrity at least once every 3 years.



# National Fire Protection Association - NFPA 1-2018

- 12.3.3.3.1 The person responsible for conducting the visual inspection shall demonstrate appropriate **technical knowledge and experience in fire-resistance-rated design and construction** acceptable to the AHJ.
- 12.3.3.3.2 A written report prepared by the person responsible for conducting the visual inspection shall be submitted to the AHJ documenting the results of the visual inspection.

# National Fire Protection Association - NFPA 1-2018

- 12.4 – Fire Doors
  - NFPA 80
- **12.4.6 – Fire Doors, Fire Shutters, Fire Windows, other than fire dampers and fire safety curtains**
- 12.4.6.5.1 – Field Labeling....
  - Individuals or Companies certified, listed, representatives of a labeling service that maintains periodic inspections of .....
  - Prove qualifications
- **12.4.6.10 Performance-Based Option.**
- 12.4.6.10.1 As an alternate means of compliance with 12.4.6.8.4, subject to the AHJ, fire door assemblies shall be permitted to be inspected, tested, and maintained under a written performance-based program. [80:5.4.1]

# **National Fire Protection Association - NFPA 1-2018**

- **12.4.6.11 Maintenance.**
- **12.4.6.11.1\*** Repairs shall be made, and defects that could interfere with operation shall be corrected without delay. [**80:5.5.1**]

# 2015 International Fire Code Maintenance

## SECTION 703

### FIRE-RESISTANCE-RATED CONSTRUCTION

**703.1 Maintenance.** The required *fire-resistance rating* of fire-resistance-rated construction, including, but not limited to, walls, firestops, shaft enclosures, partitions, *smoke barriers*, floors, fire-resistive coatings and sprayed fire-resistant materials applied to structural members and fire-resistant joint systems, shall be maintained. Such elements **shall be visually inspected by the *owner* annually and properly repaired, restored or replaced where damaged, altered, breached or penetrated. Records of inspections and repairs shall be maintained..**



# 2015 International Fire Code Maintenance

## SECTION 703

### FIRE-RESISTANCE-RATED CONSTRUCTION

**703.1 Maintenance. (continued)** Where concealed, such elements shall not be required to be visually inspected by the *owner* unless the concealed space is accessible by the removal or movement of a panel, access door, ceiling tile or similar movable entry to the space. Openings made therein for the passage of pipes, electrical conduit, wires, ducts, air transfer openings and holes made for any reason **shall be protected with *approved* methods** capable of resisting the passage of smoke and fire. Openings through fire-resistance-rated assemblies shall be protected by self- or automatic-closing doors of *approved* construction meeting the fire protection requirements for the assembly.



# 2015 International Fire Code Maintenance

## SECTION 703

### FIRE-RESISTANCE-RATED CONSTRUCTION

#### **703.1 Maintenance. (continued) 703.1.1 Fireblocking and draftstopping.**

Required *Fireblocking* and draftstopping in combustible concealed spaces shall be maintained to provide continuity and integrity of the construction.

**703.1.2 Smoke barriers and smoke partitions.** Required *smoke barriers* and smoke partitions shall be maintained to prevent the passage of smoke.

Openings protected with *approved* smoke barrier doors or smoke dampers shall be maintained in accordance with NFPA 105.

#### **703.1.3 Fire walls, fire barriers and fire partitions.**

Required *fire walls, fire barriers* and *fire partitions* shall be maintained to prevent the passage of fire. Openings protected with *approved* doors or fire dampers shall be maintained in accordance with NFPA 80.



# 2018 International Fire Code

- ***701.1 Scope.*** The provisions of this chapter shall govern the **inspection and maintenance of the materials, systems and assemblies used for structural *fire resistance*, *fire-resistance rated* construction separation of adjacent spaces** and construction installed to resist the passage of smoke to **safeguard against the spread of fire and smoke** within a building and the spread of fire to or from buildings. New buildings shall comply with the *International Building Code*. **[IFC 2018]**



# 2018 International Fire Code

- ***701.2 Fire-Resistance Rated Construction***
  - **Structural Members**
  - **Exterior Walls**
  - **Fire Walls, Fire Barriers, Fire Partitions**
  - **Horizontal Assemblies**
  - **Shaft Enclosures**

# 2018 International Fire Code

- **701.2.1 Hanging displays.** The hanging and displaying of salable goods and other decorative materials from acoustical ceiling systems that are part of a fire-resistance-rated horizontal assembly shall be prohibited.

# 2018 International Fire Code

- **701.6 Records of inspections and repairs** shall be maintained. Where concealed, such elements shall not be required to be visually inspected by the *owner unless the concealed space is accessible by the removal or movement of a panel, access door, ceiling tile or similar movable entry to the space.*

[IFC 2018]

# 2018 International Fire Code

- **701.6 Owner's responsibility.** The **owner** **shall maintain an inventory of all** **required** *fire-resistance-rated and smoke resistant* construction, and the construction included in Sections 703 through 707 and such construction shall be visually inspected by the *owner annually and properly repaired, restored or replaced where damaged, altered, breached or penetrated.*

[IFC 2018]

# 2018 International Fire Code

- **703 - Penetrations**
- **704 – Joints and Voids**
- **705 – Door and Window Openings**
- **706 – Duct and Air Transfer Openings**
- **707 – Concealed Spaces**

# 2018 International Fire Code

- **703 Penetrations**
- **703.1 Maintaining protection. Materials and firestop systems used to protect membrane- and through-penetrations in fire-resistance-rated construction and construction installed to resist the passage of smoke shall be maintained.**

[IFC 2018]

# 2018 International Fire Code Documentation Required

- **703.1 ... Continued (Firestops).**

The materials and firestop systems shall be securely attached to or bonded to the construction being penetrated with no openings visible through or into the cavity of the construction. Where the system

design number is known, the system shall be inspected to the listing criteria and manufacturer's installation instruction.



# 2015+ International Fire Code

- “Where concealed, such elements shall not be required to be visually inspected by the *owner* ***unless the concealed space is accessible by the removal or movement of a panel, access door, ceiling tile or similar*** movable entry to the space.

**[IFC 2015, 703.1]**

# M–Barrier Management Systems

## ICC's IPMC

### **IPMC SECTION 703**

**[F] 703.1 Fire-resistance-rated assemblies.** The required fire-resistance rating of fire-resistance-rated walls, fire stops, shaft enclosures, partitions and floors shall be maintained.

**[F] 703.2 Opening protectives.** Required opening protectives shall be maintained in an operative condition. Fire and smokestop doors shall be maintained in operable condition. Fire doors and smoke barrier doors shall not be blocked or obstructed or otherwise made inoperable.

**[IPMC 2018]**

# UAE Fire and Life Safety Code of Practice

## Maintenance & Management

### Chapter 1, SECTION 21 Firestopping

21.15.2 The required fire resistance rating of installed firestop systems shall be ***visually inspected by the owner or owner's inspection agency annually.*** Damaged, altered or breached firestop systems shall be properly repaired, restored or replaced to comply with applicable codes as per the guidelines of Civil defense.

21.15.3 Any new **Openings** made therein for the passage of through penetrants, **shall be protected with approved firestop system** to comply with applicable codes as per the guidelines of Civil defense.

# National Fire Code of Canada

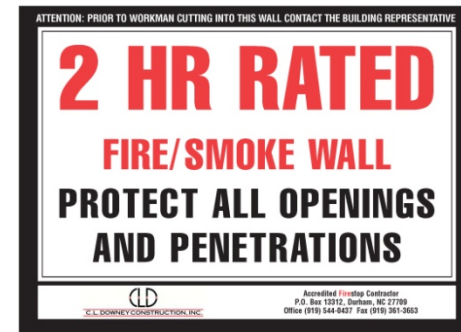
## National Fire Code of Canada

- ***Division B – Part 2, Building and Occupant Fire Safety***  
***2.2.1.2 – Damage to Fire Separations*** – where *fire separations* are damaged so as to affect their integrity, they shall be repaired so that the integrity of the *fire separation* is maintained...
- **FCIA Manual of Practice – Appendix, Maintenance**  
FCIA recommends Barrier Management for Effective Compartmentation and Structural Protection

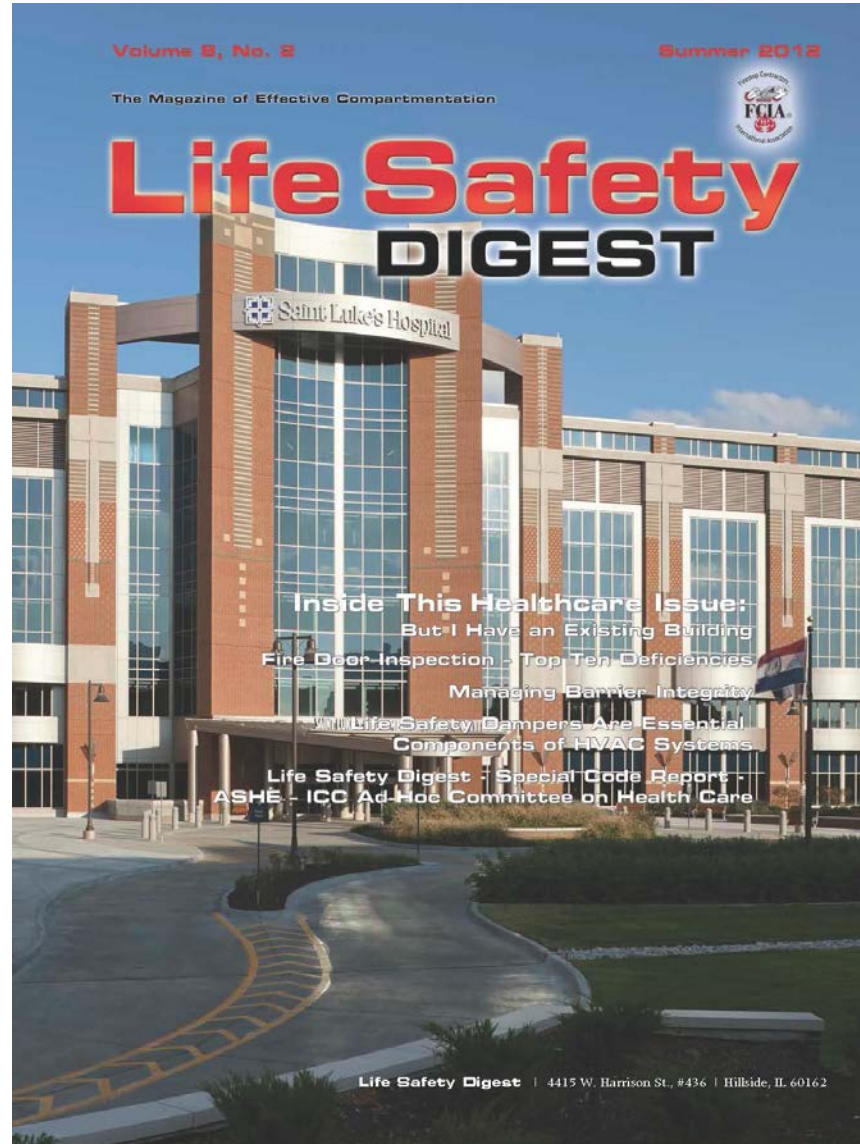


# Maintenance

- **Maintenance**
  - Code Required
  - How??
- **How to keep Track – Barrier Management Initiative**
  - Paper
  - Software
  - Labeling



# Barrier Management Begins when new construction ends...



# M–Barrier Management Systems Starts with CONSTRUCTION

- **Reference 01-78-39**
  - **‘Inventory’ of Fire-Resistance**

# M–Barrier Management Systems

## Starts with CONSTRUCTION

- **NEW Buildings – 07-84-00 Specs**
  - **www.FCIA.org**
- **Part I – Focus on**
  - **Systems**
  - **Not Products**
  - **Manufacturers**
- **“Single Manufacturer to the greatest extent possible” – EJ’s**
- **Reference 01-78-39 for ‘Inventory’.**



# M–Barrier Management Systems Starts with CONSTRUCTION

- **Part II – Qualifications**
  - **FCIA Member in Good Standing, AND**
  - **FM 4991, Standard for the Approval of Firestop Contractors, OR**
  - **UL Qualified Firestop Contractor Program**
  - **Door, Damper, Wallboard, Wall Contractor Accreditation Program...**
  - **AND**
  - **Manufacturer Approved, Trained**

# M–Barrier Management Systems Starts with CONSTRUCTION

- **Part II – Qualifications – Special Inspection**
  - **Special Inspection Agency –**
    - **IAS AC 291 Accredited Special Inspection Agencies**
  - **Special Inspector Qualifications**
    - **Firestopping**
      - **FM Firestop Exam**
      - **UL Firestop Exam**
      - **IFC Firestop Exam**
    - **Fire Doors – FDAI**
    - **Fire Dampers – Barrier Management Symposium?**
    - **Gypsum Wallboard ?**
    - **Fire-Rated Glazing?**

# M–Barrier Management Systems Starts with CONSTRUCTION

- **Part III – Execution**
  - **Special Inspection**
    - **ASTM E 2174 - Penetrations**
    - **ASTM E 2393 – Joints**
  - **NFPA 80**
    - **Fire Dampers**
    - **Fire Doors?**

# M–Barrier Management Systems

## Starts with CONSTRUCTION

- **Specifications Reference 01-78-00**
  - **Closeout Submittals**
  - **01 78 13 Completion and Correction List**
  - **01 78 19 Maintenance Contracts**
  - **01 78 23 Operation and Maintenance Data**
  - **01 78 23.13 Operation Data**
  - **01 78 23.16 Maintenance Data**
  - **01 78 23.19 Preventative Maintenance Instructions**

# M–Barrier Management Systems Starts with CONSTRUCTION

- **Reference 01-78-00 Closeout Submittals**
  - **01 78 29 Final Site Survey**
  - **01 78 33 Bonds**
  - **01 78 36 Warranties**
  - **01 78 39 Project Record Documents**
  - **01 78 43 Spare Parts**
  - **01 78 46 Extra Stock Materials**
  - **01 78 53 Sustainable Design Closeout Documentation**

# M–Barrier Management Systems

## Policy Topics

- **Budget to Meet Code Requirements**
- **Inventory – What Info?**
- **Barrier Permits – Who Controls?**
- **Implement Fire Resistance Maintenance**
  - **In House (Rules)**
  - **Outside Contractor (Rules)**
- **Management & Monitor Process**

# M–Barrier Management Systems Policies

- **Fire Rated Walls & Floors Inventory**
  - Walls - U, V 400, 900 Designs
  - Floors – P Designs
  - Calculated Fire Resistance
  - Code Defined Fire Resistance – IBC Sec. 720
- **Survey where not Concealed.**

# **Survey Items**

## **Fire Doors – Annually**

- **NFPA 80**
  - **Close and Latch**
  - **Holes, Gaps**
  - **Attach at Frame**
  - **Undercut & Astragals**
  - **Labels Legible**
  - **Labels recertified, requirements of 3<sup>rd</sup> party certification agency**



# **Items to Survey Firestop Systems**

- **Not Concealed ...**
- **Through & Membrane Penetrations**
- **Joints**
  - **Wall to Wall**
  - **Floor to Floor**
  - **Head – Bottom of Wall**
  - **Continuity Head of Wall**
  - **Perimeter Fire Containment**

# **Items to Survey Firestop Systems**

- **Visibly Comply with System**
- **Visibly ‘sealed’**
- **Without openings**
- **Firestop Materials & Systems**
- **Securely Attached**

# Items to Survey - Dampers

- **NFPA 80 –**
  - **Initial Installation**
  - **At 1 year, each 4 years,**
  - **6 years healthcare**
- **Fire, Smoke, Combination,  
Ceiling/Radiation Dampers**

# **Items to Survey**

## **Fire Rated Glazing**

- **Verify if fire rated**
- **Glazing / Frame Attachment**
- **Frame attached to wall**
- **Glazing Marking as Built**

# **What's the Fire Resistance Inventory Look Like?**

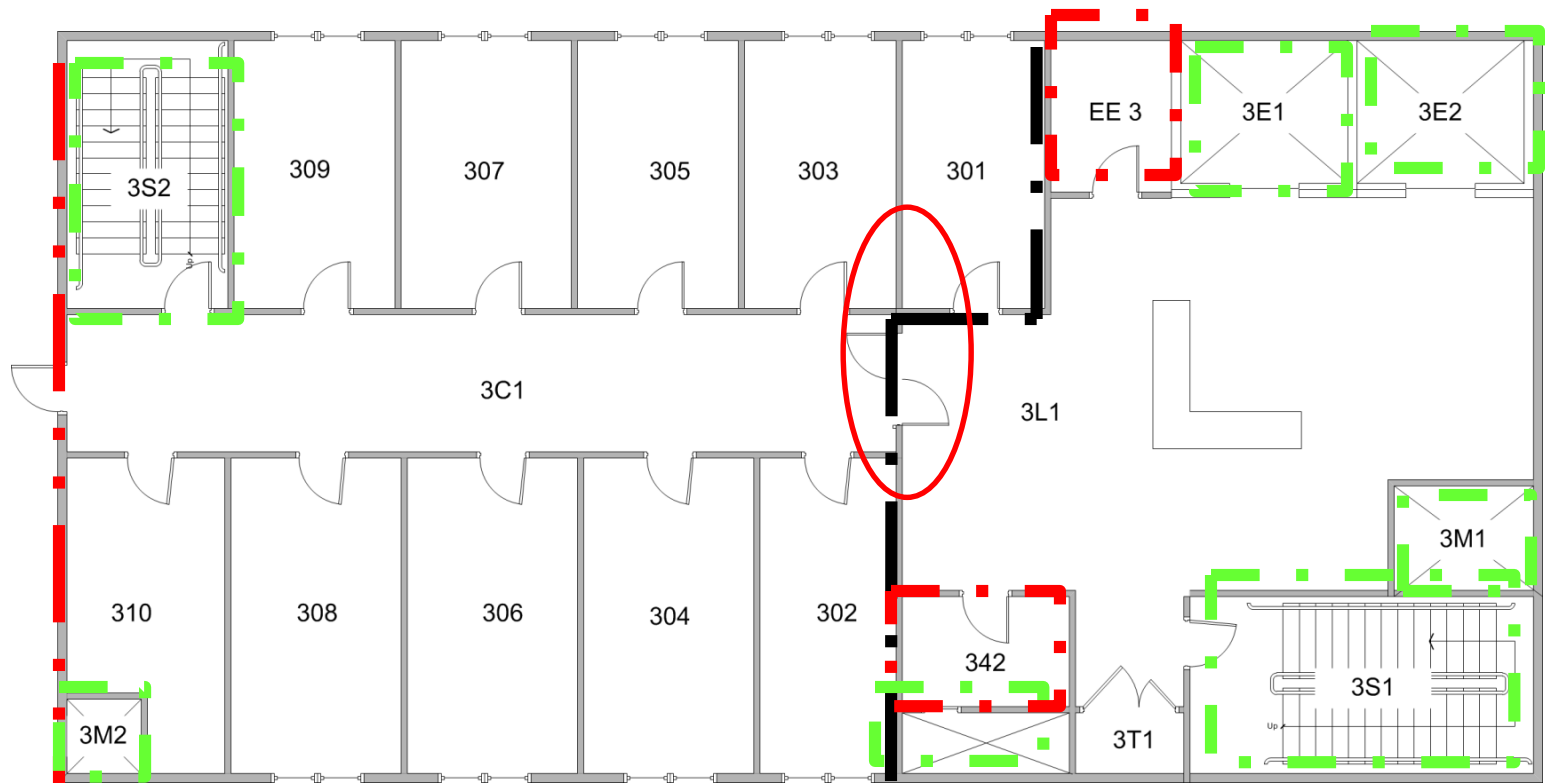
- **Life Safety Drawings**
- **Systems & Manufacturers Installation, Maintenance Instructions**
- **Paper & Files**
- **Spreadsheets**
- **Software**

# Barrier Management Policy Repairs

- **As originally permitted and *approved***
- Or...*
- *As required by Fire Code, Existing Building Code*
- **If SYSTEMS, SYSTEMS REPAIRS**
- **If no Systems, original materials.**
- **AHJ/Insurance Company Approved**

# M-Barrier Management Systems

- **Now it's your building....**



- **Gleeson Powers Graphic**

# **Barrier Management Issues?**

- **Which Occupancies Applicable?**
- **Who is Messing Up Barriers?**
- **Staff Training?**
- **How Extensive?**
- **Manage?**



# Who Manages?

- **Facility Engineering/Management**
  - **Convince C-Suite Execs** –
    - **Yearly Budget – Importance = Sprinklers**
  - **Construction Staff Training**
    - **In House Crews**
    - **Outside Contractors**
  - **Electrical & I-T Department** –
    - **In House Crews & Outside Contractors**
  - **Specialist Barrier Management Services??**

# Facility Engineering/Management

- **YOU answer to...**
  - **Other AHJ's**
  - **C-Suite**
  - **Occupants, Students, Faculty, Patients**
  - **Building Official, Fire Marshal**
  - **The Joint Commission, HFAP, DNV**
  - **CMS Inspectors**
  - **Insurance Company**

# **Barrier Management Inventory Elements**

- **Life Safety Drawings**
- **Systems**
- **Manufacturers Installation Instructions**
- **Safety Data Sheets**
- **Document Existing Conditions Documented**
  - **Ongoing Survey Records, Deficiency Reports**
  - **Systems Documentation Control, Retrieval**
- **ALL FIRE PROTECTION FEATURES**

# Barrier Management Policy

## Possible Contents

- Ongoing Survey to Manage
- Staff - Occupant Education
- Barrier Warnings - Markings
- Violation Consequences
- Rules of Engagement in Contracts
  - Internal Contracts
  - External Contracts
- Pre Construction Meetings



# **Barrier Management**

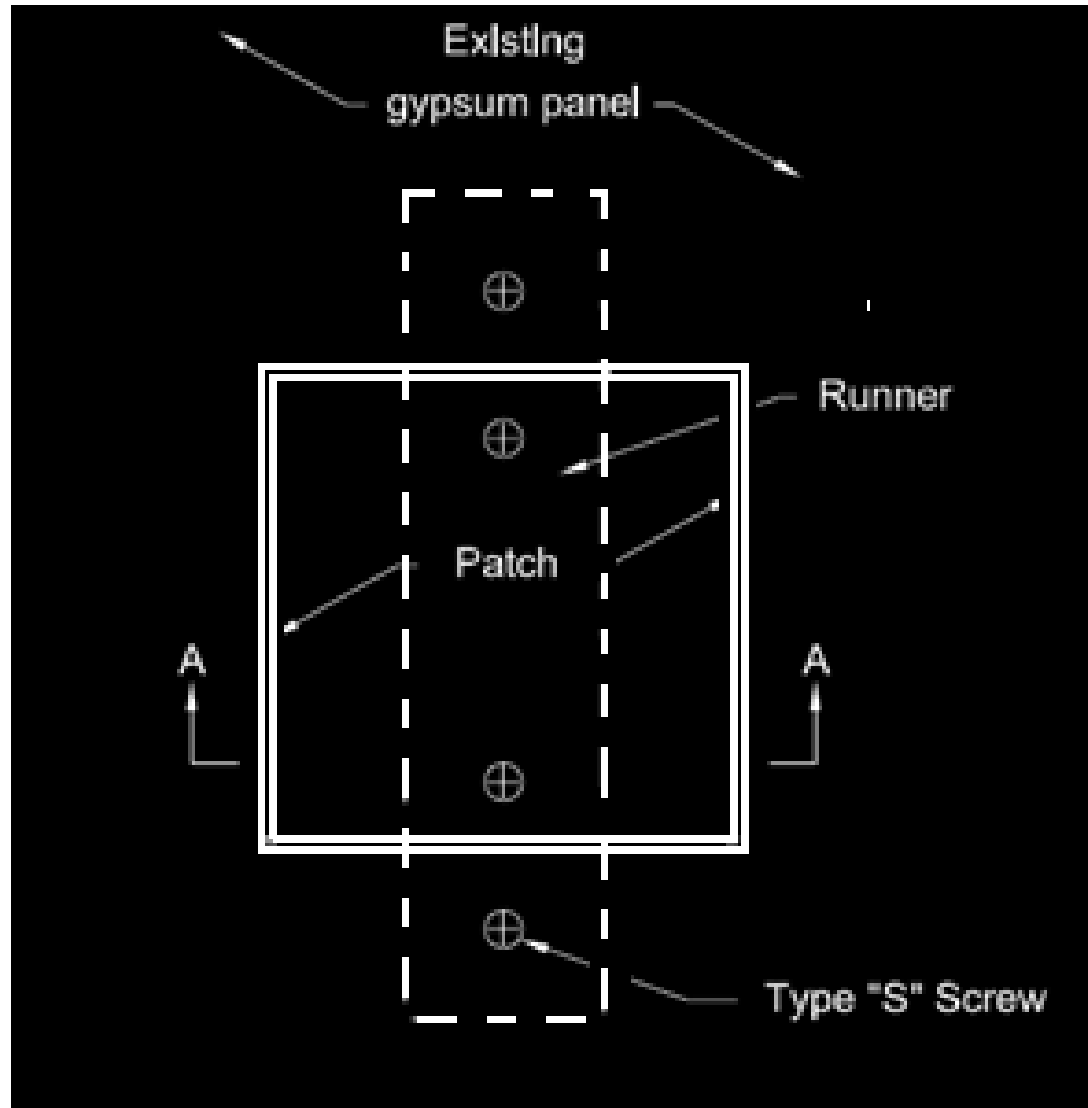
## **Policy Contents**

- **Internal Contracts -**
  - **Systems, Locations**
  - **Manufacturers Installation Instructions**
  - **Safety Data Sheets**
- **External Contracts**
  - **Marked Fire - Smoke Barrier Actions**
  - **Barrier Permits**
  - **Documentation Systems, Manufacturers Installation Instructions**
  - **Reports**

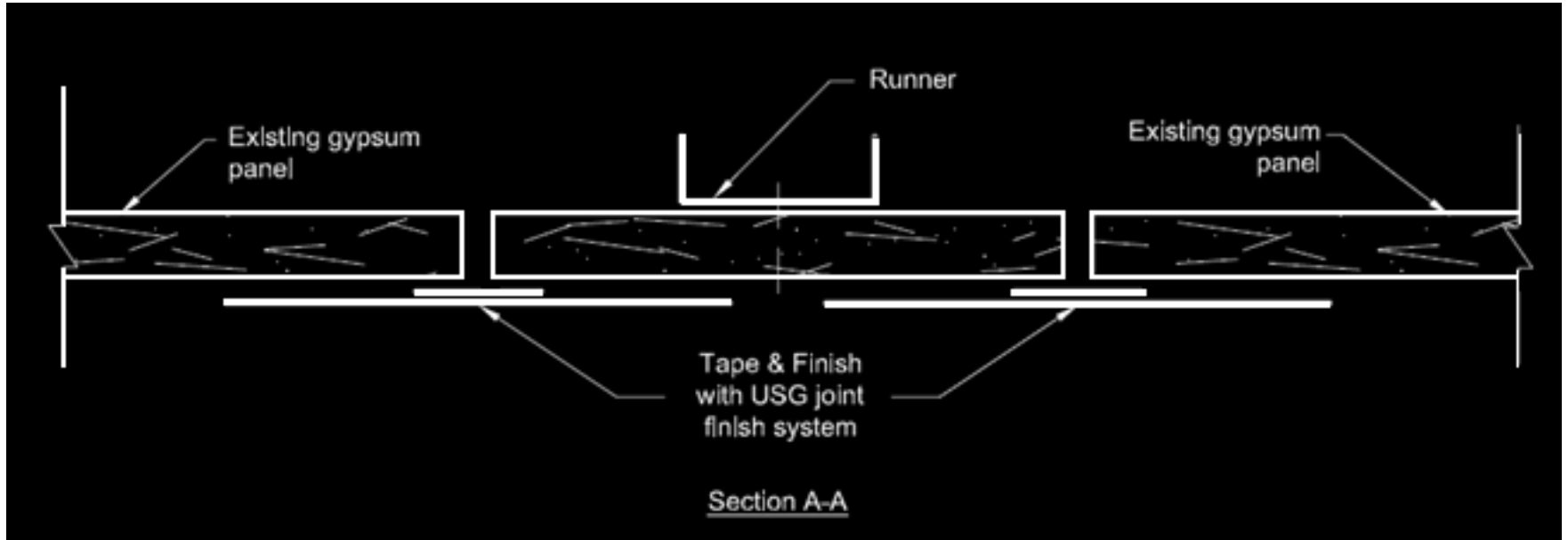
# M–Barrier Management Systems

- **Barrier Repair Examples**

# Repair Small Holes

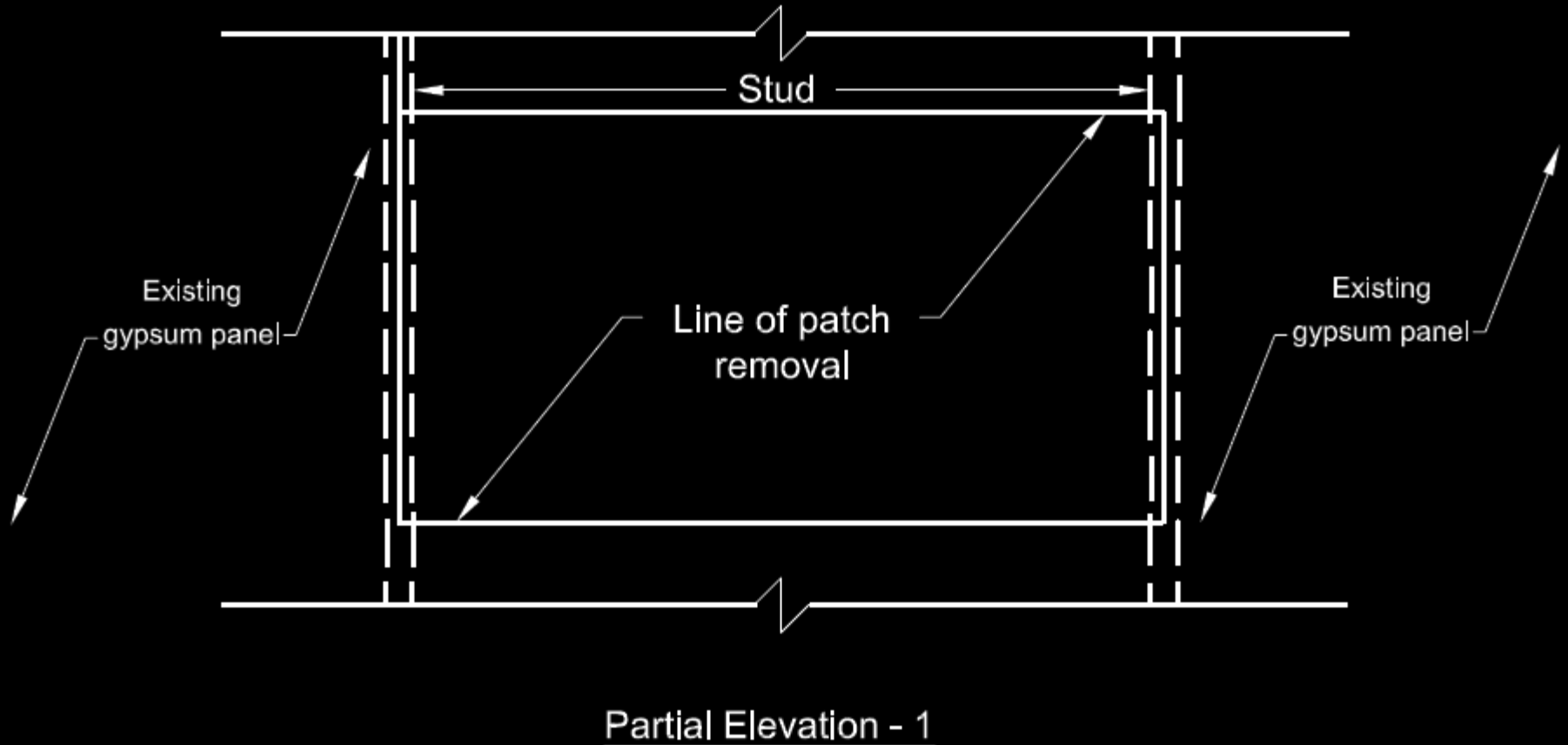


# Repair Small Holes





# Gypsum Wallboard Repair Large Holes



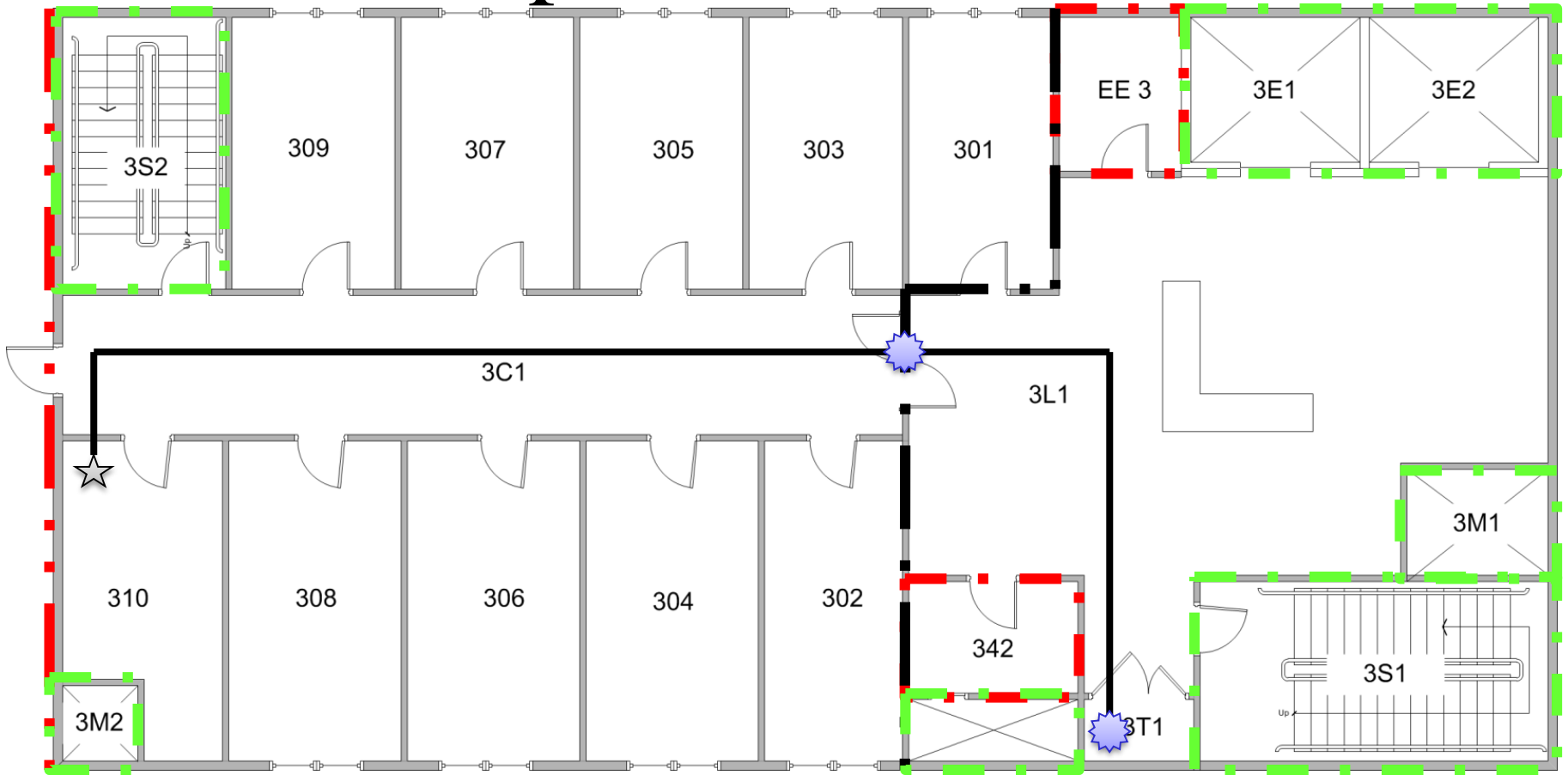
- USG Photo

# M–Barrier Management Systems

- **Electronic Best Practice Elements**
  - **Action Oriented**
    - **Projects - Specifications**
    - **Ongoing Surveys – FCIA RPPS 2010-1**
  - **Action Reminders**
  - **In Process Status**
  - **Record Retrieval**



# Sample Permit – Area





Demo Hospital

Permit No.: 2011-005

Area (\*): 3C1/3L1

Side 1: 3C1

Side 2: 3L1

LSR ID: LST-B1-03-007

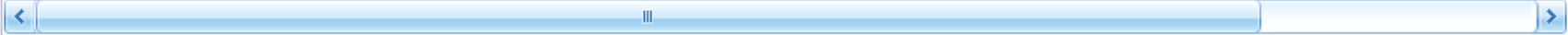
Compliance Status: ● Non-compliant

Survey ID:

LSR Group:

Life Safety Details | Surveys | Photos | Floor Plan Diagrams

LSR Deta...	Status	Latest Ph...	Detail Description	Life Safety T...	Life Safety Sub ...	Letters	Numbers	LSR Count	Notes
> 001	<span style="color: red;">●</span> Non-com...		Firestopping Through Wall Penetration - Firestop	Firestopping	Through Wall Pe...	WL	1000-1999	1	
002	<span style="color: green;">●</span> Compliant		Firestopping Through Wall Penetration - Firestop	Firestopping	Through Wall Pe...	WL	1000-1999	0	
003	<span style="color: green;">●</span> Compliant		Firestopping Through Wall Penetration - Firestop	Firestopping	Through Wall Pe...	WL	5000-5999	1	
004	<span style="color: green;">●</span> Compliant		Firestopping Through Wall Penetration - Firestop	Firestopping	Through Wall Pe...	WL	3000-3999	1 EZ Path	



Add New Life Safety Detail Entry

Edit Selected Life Safety Detail Entry

Edit

Save

Save & Add Another

Save & Close

Delete Record

Cancel

Edit Selected Permit

Delete Selected Row

View/Print Permi

Close Form

# Corrective Action Report

Building/Floor/Area:  
Building 1 \ 3rd Floor \ 3C1/3L1

LSR # - Detail#:  
LST-B1-03-007 - 001

Life Safety Type: Firestopping

Life Safety Sub Type: Through Wall Penetration - Firestop Systems

Penetration Type: EMT or Conduit

Penetration Size: Max 1"

Annular Space: MIN: 0 to .50", MAX:

Wall Rating Type:

Date Completed: May-02-2011

Classified System:

Survey #: Survey

Survey Date:

Deficiency Description: No firestopping

Suggested CA Notes: Install UL Listed Firestopping System at penetration/joint

Survey Notes:

CA Notes:

Survey Photo



Side: 37296

Photo ID: 37296

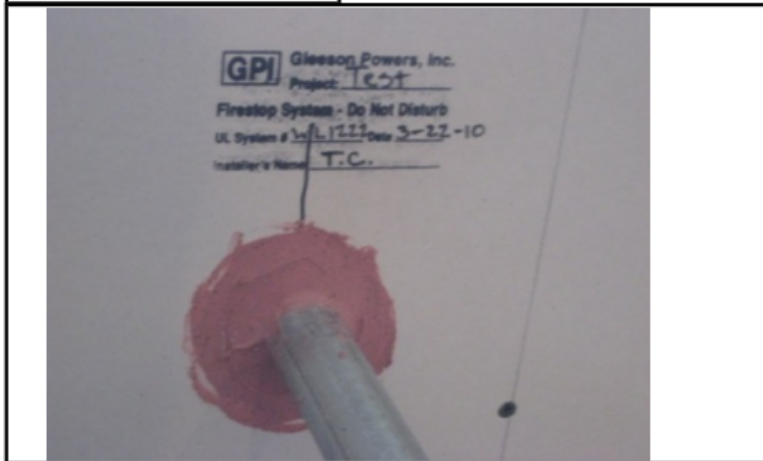
Survey Photo



Side: 2: 3L1

Photo ID: 37297

Corrective Action Photo

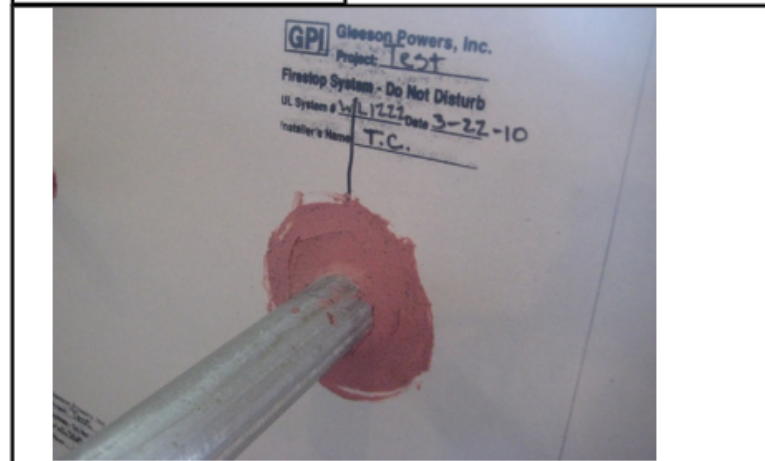


Side: 1: 3C1

Photo Notes:

Photo ID: 37298

Corrective Action Photo



Side: 2: 3L1

Photo Notes:

Photo ID: 37299

# Barrier Management Policy - Markings



# Barrier Management Policy – Comply with Code

**703.7 Marking and identification.** *Fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions or any other wall* required to have protected openings or penetrations shall be effectively and permanently identified with signs or stenciling. Such identification shall:

1. Be located in accessible concealed floor, floor-ceiling or *attic spaces*;
2. Be located within 15 feet (4572 mm ) of the end of each wall and at intervals not exceeding 30 feet (9144 mm) measured horizontally along the wall or partition; and
3. Include lettering **not less than 3 inches (76 mm ) in height with a minimum 3/8 inch (9.5 mm) stroke** in a contrasting color incorporating the suggested wording.

**“FIRE AND/OR SMOKE BARRIER—PROTECT ALL OPENINGS”**

or other wording.

**Exception: Walls in Group R-2 occupancies that do not have a removable decorative ceiling allowing access to the concealed space.**



# **Barrier Management Policy Tools**

- **Pre Construction Meetings - Education**
  - **Barrier Markings Mean...**
  - **Actions when at Barriers Required...**
    - **Permit required – Above Ceiling, Barrier Hole...**
    - **Infection Control Rules**
    - **Repair Methods, Healthcare Facility Philosophy**

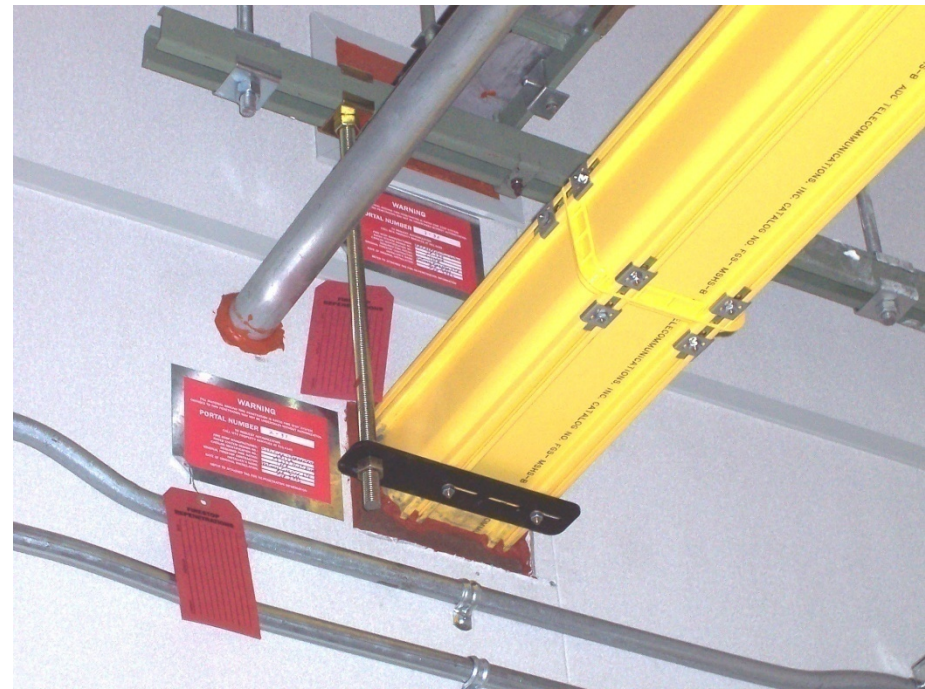


# Barrier Management Policy Tool

- Barrier Warnings on ASSEMBLIES
- International Building Code – 2009++

ATTENTION: PRIOR TO WORKMAN CUTTING INTO THIS WALL CONTACT THE BUILDING REPRESENTATIVE

**2 HR RATED  
FIRE WALL**  
**PROTECT ALL OPENINGS  
AND PENETRATIONS**



# **Barrier Management Policy Tool**

- **Find Violators, Consequences...**
  - **In House –**
    - **2 strikes & work reassignment ...**
    - **Additional Discipline?**
  - **Outside Contractors**
    - **2 strikes & not allowed to work above ceilings**
    - **Additional Discipline?**

# **Barrier Management Policy Tool**

- **Ongoing Management**
  - **Engineering Staff Reviews**
  - **User Staff Reviews**
  - **Inside Construction Crews**
  - **Outside Contractors**

# **Barrier Management Policy Tool**

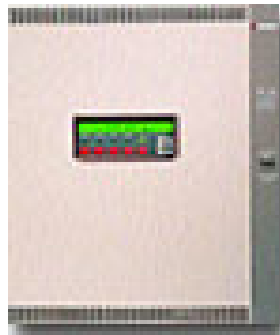
- **Education - Healthcare Staff**
- **Fire Doors & Hardware – Issues...**
  - **Close & Latch**
  - **Holes in Door**
  - **Fire Rated Walls – “Barrier Report”**
    - **Accidental Holes**
    - **Patient, Visitor Caused**
  - **Ladder @ Any Floor = Permit Stickers**

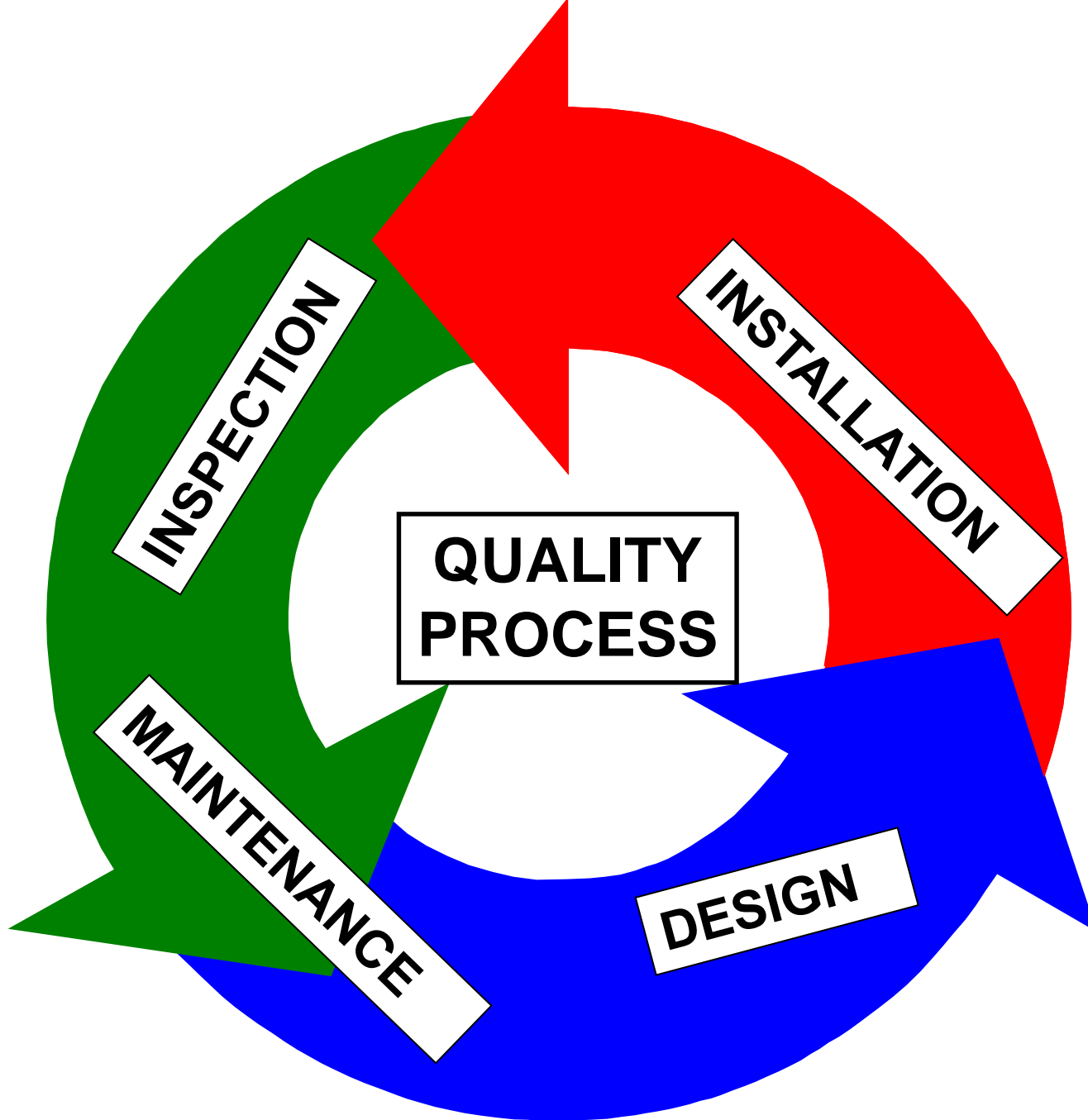
# Barrier Management Policy Tool

- **Add a Line Item in Budgets...**
  - **Sprinkler Maintenance**
  - **Alarms Maintenance**
  - **Security**
  - **Fire and Smoke Resistant Assemblies**
    - **Doors**
    - **Dampers**
    - **Firestops**
    - **Glazing**
    - **Walls/Floors**

# “TOTAL FIRE PROTECTION”

- Effective Compartmentation
  - Fire Barriers, Fire Walls/Floors, Smoke Barriers
  - Firestopping, Fire Dampers, Swinging and Rolling Fire Doors, Fire Rated Glazing
- Detection & Alarm Systems
- Sprinkler Suppression Systems
- Education & Egress—
  - Building Owners & Managers, Building Occupants and Firefighters





# Objective – Keep Buildings Safe

- Barriers are for Safety – DIIM
  - Properly *Designed* and Specified
    - *Tested and Listed Systems* – Directories, Tables
    - *Specified*
  - Professional *Installation* Companies
  - Properly *Inspected* – Commissioned, by Companies
  - *Maintained* –
    - NFPA 101 - 2012 (TJC, CMS)
    - International Fire Code - IFC 2018 – Annually, *Inventory*
- *Effective Compartmentation for Fire & Life Safety*



# Effective Compartmentation is a SYSTEM



# Barrier Management Policy = Tool





The FCIA's mission is for member organizations to be recognized throughout the construction industry as preferred quality contractors of life safety firestop systems. [JOIN FCIA TODAY!](#)



Looking for a Firestop Professional? For the best [Firestop Contractors](#), [Associates](#), [Manufacturers](#), [Consultants](#), Distributors, Reps and more, [FCIA.org Member List](#) is the place for you. From Firestopping Contractors to Special Inspection Agencies, Firestop System Manufacturers to Firestop product Distributors, FCIA Members have the expertise you need. Also, check out the [FM 4991 Approved & UL Qualified/Firestop Contractors Map](#).

**FCIA Knows  
Firestop Systems**  
Design, Installation, Inspection,  
Maintenance & Management

## FCIA Barrier Management Services Member Lists

### Barrier Management Services, Alphabetical Listing

Building Owners and Managers are required by the International Fire Code, NFPA 101, NFPA 1, the National Fire Code of Canada, UAE Fire and Life Safety Code, and other codes to maintain all types of fire protection in buildings. They are also required to maintain the fire-resistance rated construction and smoke resistant assemblies for the life of the building. The FCIA Barrier Management Services contractors, inspection agencies, manufacturers, distributors and software vendors provide tools for the building owner and manager to meet code requirements. Whether small or large repairs and major renovations, FCIA Barrier Services Section keeps buildings safe. **[Members who offer these specialized services can register for inclusion in these lists.](#)**

Member's first letter [1](#) [2](#) [3](#) [A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Z](#)

◆ Sort by Company

[Aecon Industrial Western Inc.](#)  
(Barrier Management Services)  
Jeff Leddy  
*Member Since February 28, 2012*  
[Airseal Insulation Systems](#)  
(Barrier Management Services)  
Abba Kloc

◆ Sort by State

Sherwood Park (780) 416-5700  
AB  
  
Brooklyn (718) 821-6800  
NY

#### Contractors Offering Barrier Management Services

[By home state](#)

[All Barrier Management Services](#)  
[Firestopping](#)  
[Fire Dampers](#)  
[Fire Doors \(Rolling and Swinging\)](#)  
[Fire-rated Glazing](#)  
[SFRM and IFRM Fireproofing](#)  
[Barrier Repairs](#)  
[Barrier Surveys](#)  
[Barrier Management Software](#)

[Operating US-wide](#)  
[Operating in Canada](#)  
[Operating in Middle East](#)  
[Operating worldwide](#)

#### Manufacturer Members

[Firestopping](#)  
[Fire Dampers](#)  
[Fire Doors \(Rolling and Swinging\)](#)  
[Fire-rated Glazing](#)  
[SFRM and IFRM Fireproofing](#)  
[Barrier Management Software](#)

#### Associate Members

[Firestopping](#)

#### About Us

Contact Us

President's Message

Board / Committees

#### Members Only

#### Member Services

Member Lists

FM 4991 Approval

UL Qualification

Inspection Agencies

Barrier Management Services

#### Membership

Benefits

Qualification

Dues

Events



# Contacts

Firestop Contractors International Association

Hillside, IL – +1-708-202-1108 - office

Bill McHugh – bill @ fcia.org

# Barrier Management Symposium™

## Barrier Management Policies

Bill McHugh, FCIA

© FCIA 2018

