

NFPA 914
*Code for Fire Protection of
Historic Structures*

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NFPA



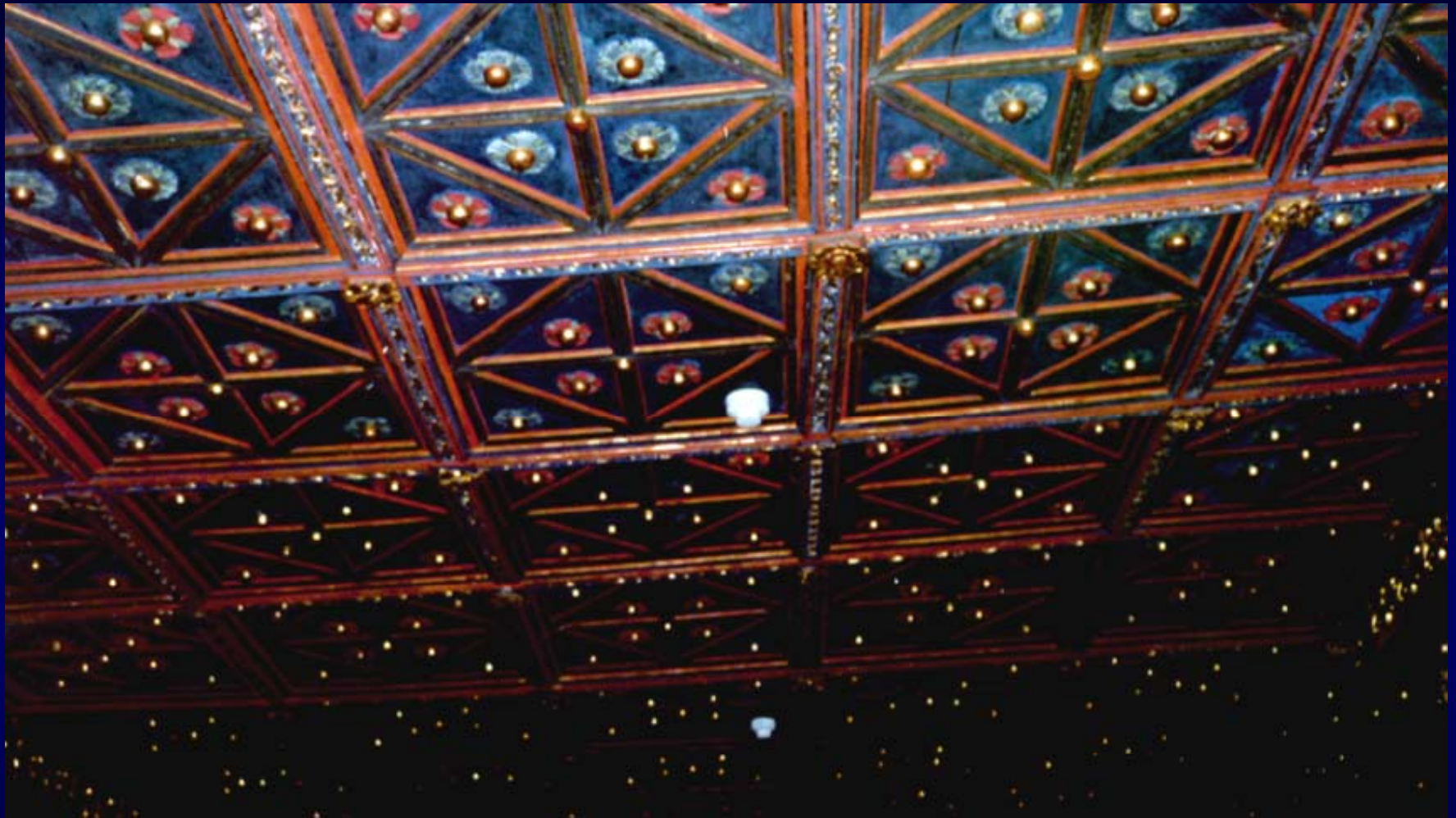
Historic Buildings – Overall Intent

- Provide for protection of:
 - Life
 - Property/Contents
 - Heritage
- Minimize intrusion and impact of safety features
- Maximize use of existing safety features









Historic Buildings



- Compliance with current building, fire and safety regulations?
- Achieving compliance can be exceedingly difficult and costly
- Preservation of historic fabric parallels objectives for fire & life safety

Regulations

- Reflection of public expectation for safety
- Primary focus is protection of occupants
- Property protection and preservation of historic fabric not typically addressed



Regulations

- Typically prescriptive in nature
- Written largely for new construction
(exception - NFPA 101, Life Safety Code)
- Building rehabilitation not usually addressed



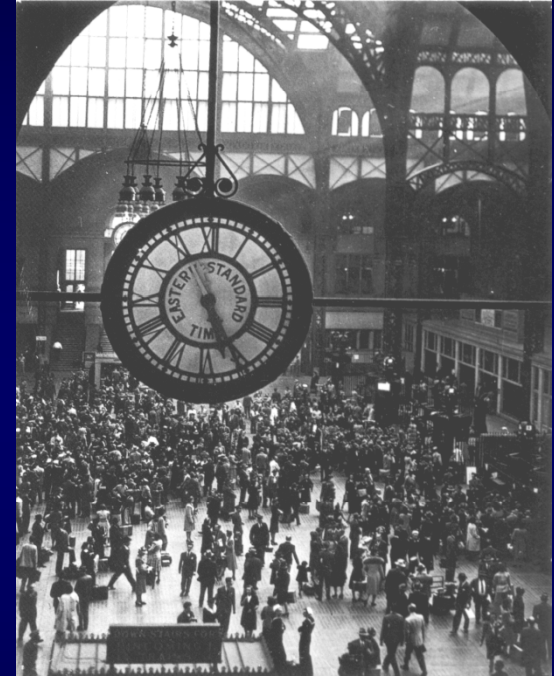
NFPA 914 – A Different Approach

“The purpose of this document is to provide fire protection and life safety systems in historic buildings while protecting the elements, spaces, and features that make these structures historically or architecturally significant.”



NFPA 914 - A Different Approach

- Building Regulations
 - Developers
 - Code Officials
- NFPA 914
 - Preservationists
 - Fire Protection Engineers
 - Facility Operators



NFPA 914 - Highlights

- Preservation
- Fire Safety Expertise
- Assigns Responsibility
- Compensatory Features
- Fire Risk Indexing
- Performance-based Evaluation
- Management Operational System



NFPA 914 - History

1940 – Technical Committee formed

1989 – Recommended Practice for Fire Protection in Rehabilitation and Adaptive Reuse of Historic Structures

1994 – Recommended Practice for Fire Protection in Historic Structures

2001 – Code for Fire Protection of Historic Structures



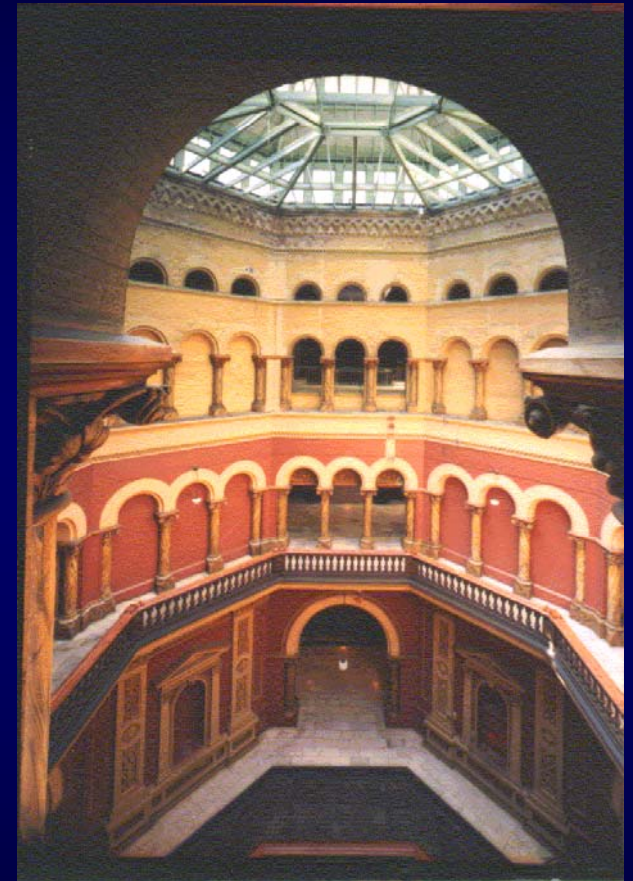
NFPA 914 - Goals and Objectives

- Provide protection and life safety from the effects of
- Maintain historic fabric and integrity of building



NFPA 914 – Historic Preservation Goals

- Minimize Damage to historic structures or materials from fire and fire suppression
- Maintain and preserve original configurations of historic buildings
- Minimize alteration, destruction, or loss of historic fabric or design



NFPA 914 – Historic Preservation Objectives

- Fire safety and fire protection features shall be designed, approved, implemented, and maintained so as to preserve the original qualities or character of a building, structure, site, or environment.
- Removal or alteration of any historic material or distinctive architectural feature shall be minimized.
- Distinctive stylistic features or examples of skilled craftsmanship that characterize a building, structure, or site, shall be treated with sensitivity.



NFPA 914 – Historic Preservation Objectives

- A compatible use for a property that requires minimal alteration of the building, structure, or site and its environment shall be encouraged.
- New additions or alterations shall be designed and constructed in such a manner that, if such additions or alternations were to be removed in the future, the essential form and integrity of the structure would be, to the greatest degree possible, unimpaired.

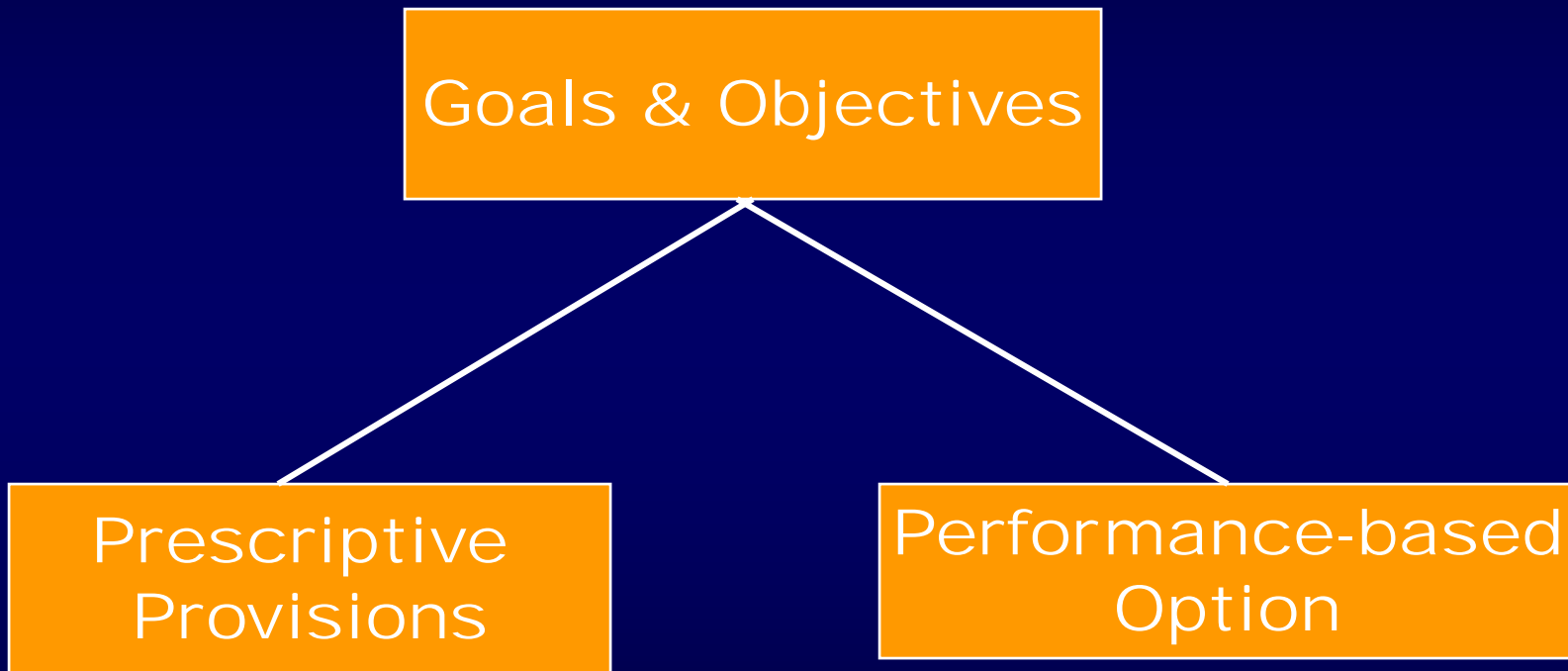


NFPA 914 - Process

- Team approach
- Identification of Historic Features
- Identification of Fire Safety Issues
- Compliance Options
- Compliance Audit

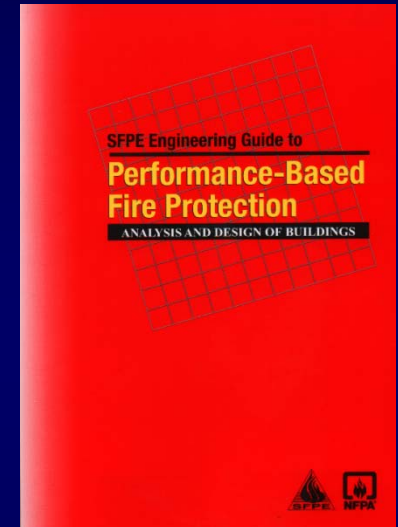


NFPA 914 – Compliance Options



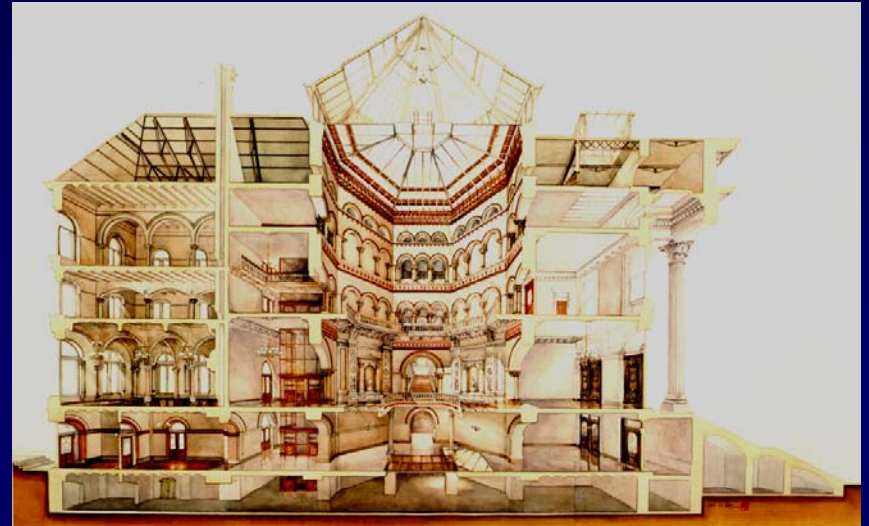
NFPA 914 – Performance-Based Design

- Fire safety goals, objectives and criteria
- Characteristics and assumptions about people or property exposed
- Potential hazards and fire scenarios
- Evaluation tools (calculation methods, computer models, fire tests)



NFPA 914 – Compensatory Features

- Construction materials
- Fire-retardant treatments
- Noncombustible contents
- Fire/smoke barriers
- Shaft enclosures
- Fire stopping
- Fire-resistive construction
- Fire detection and alarm
- Automatic suppression
- Management operational controls
- Electrical Equipment



NFPA 914 – Fire Risk Indexing

- Codes specify minimum requirements with no credit for superior conditions
- Fire Risk Indexing balances weak and strong attributes, e.g. height, area, egress path length.



NFPA 914 – Fire Risk Indexing

ATTRIBUTE	GRADE	WEIGHT	SCORE
<i>Fire Prevention</i>		15 %	
<i>Exits / Evacuation</i>		13 %	
<i>Significance</i>		13 %	
<i>Vertical Openings</i>		12 %	
<i>Automatic Suppression</i>		8 %	
<i>Bldg Height & Construction</i>		8 %	
<i>Compartmentation</i>		8 %	
<i>Fuel (contents & finishes)</i>		8 %	
<i>Detection and Alarm</i>		5 %	
<i>Emergency Response</i>		5 %	
<i>Smoke Control</i>		5 %	
	TOTAL	100%	



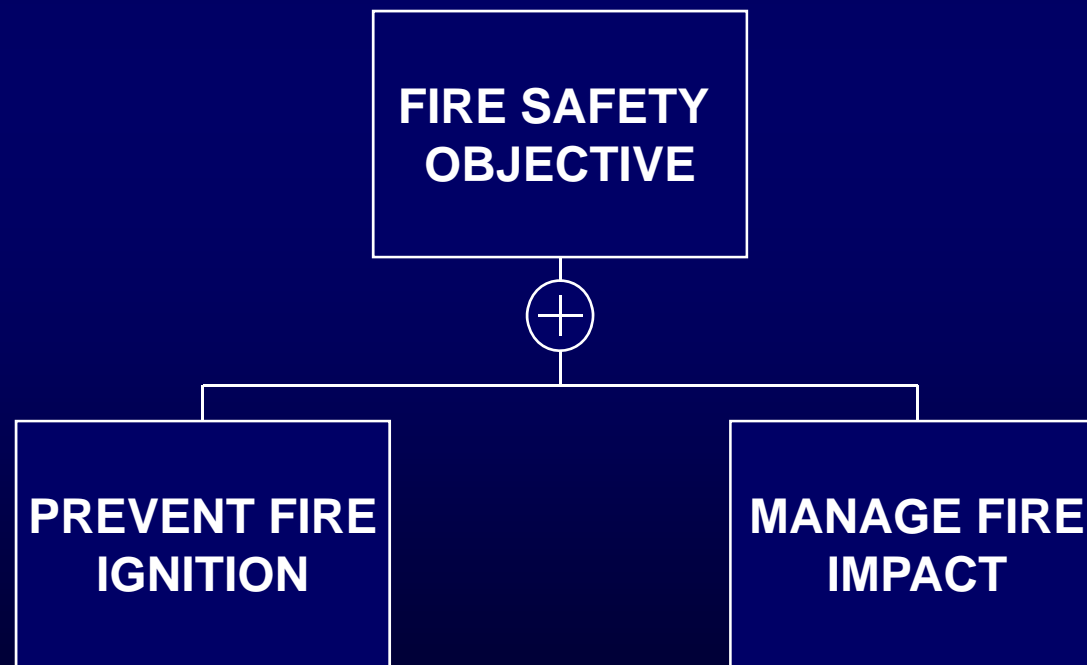
NFPA 914 – Management Operational Systems

- Responsibility/authority
- Management Plan
- Operational Requirements
- Emergency Response Plan
- Training / Drills
- Record Keeping
- Periodic Compliance Audit
- Procedures for Opening / Closing



NFPA 914 – Fire Prevention

- Criteria to reduce the likelihood of fire occurrence



NFPA 914 – Provisions for:

- Security
- Additions, Alterations & Renovations
- Fire Precautions During Construction, Repair and Alterations
- Inspection, Testing & Maintenance
- Special Events



NFPA's Approach to Building Rehabilitation

- New provisions
- Stepped approach to trigger requirements
- Minor rehabilitation - minimal requirements
- Major rehabilitation - more substantial requirements



NFPA's Approach to Building Rehabilitation

- Existing Buildings
- Rehabilitation
- New Construction

- Repair
- Renovation
- Modification
- Reconstruction
- Change of use
- Change of occupancy
- Addition
- (Historic Building)

NFPA 914 – Annexes

- Explanatory Information
- Planning and Design Appraisal
- Survey Criteria for an Historic Structure
- Summary of Fires in Historic Structures
- Fire Safety Inspection Form
- Fire Protection System Checklist



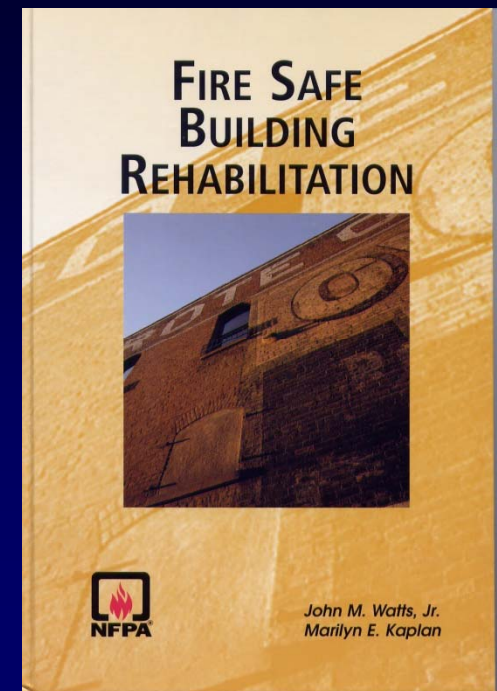
NFPA 914 – Annexes

- Basics of Fire and Fire Protection Systems
- Resource List
- Bibliography/Related Publications
- Secretary of the Interior's Standards
- Fire Ratings of Archaic Materials and Assemblies
- Upgrading the Fire Resistance of Wood Panel Doors



Closing Remarks

- Historic buildings present unique challenges
- Regulations primarily focus on new construction and do not address conservation / preservation concerns
- NFPA 914, *Code for Fire Protection in Historic Structures*, provides a framework to help bridge the gap



Thank You

Questions

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