

Fire Detection and Suppression for Cultural Properties

Nick Artim PE

Heritage Protection Group

Middlebury, Vermont

What are the best fire detection and suppression systems for my cultural property?

What are the best fire detection and suppression systems for my cultural property?

It depends.....







TOWN HALL THEATER

AMERICAN
C. DIN





Sign with yellow and orange sections, partially visible in the bottom left corner.









PUSH FROM OTHER END

LSPR

LSPR

LSPR



1-2-11

10-2054

HOLLING





NORTH POLE



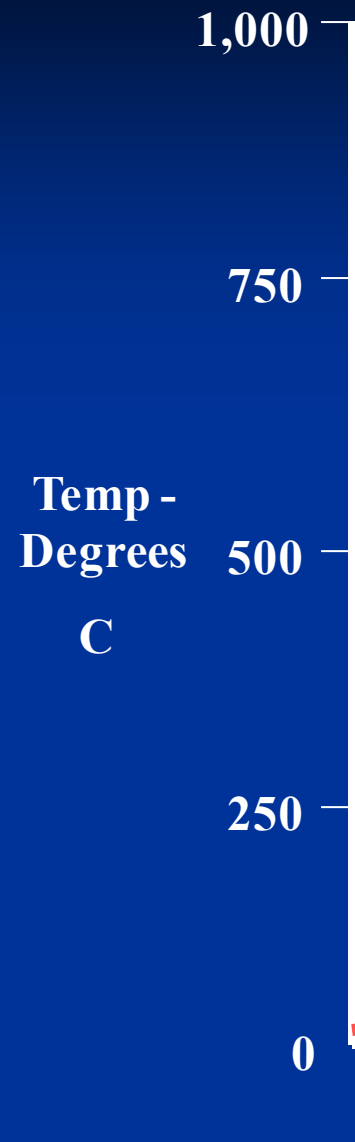
What do you want to have left after the fire?

- Building?
- Contents?
- Collections?
 - People?
 - Mission?

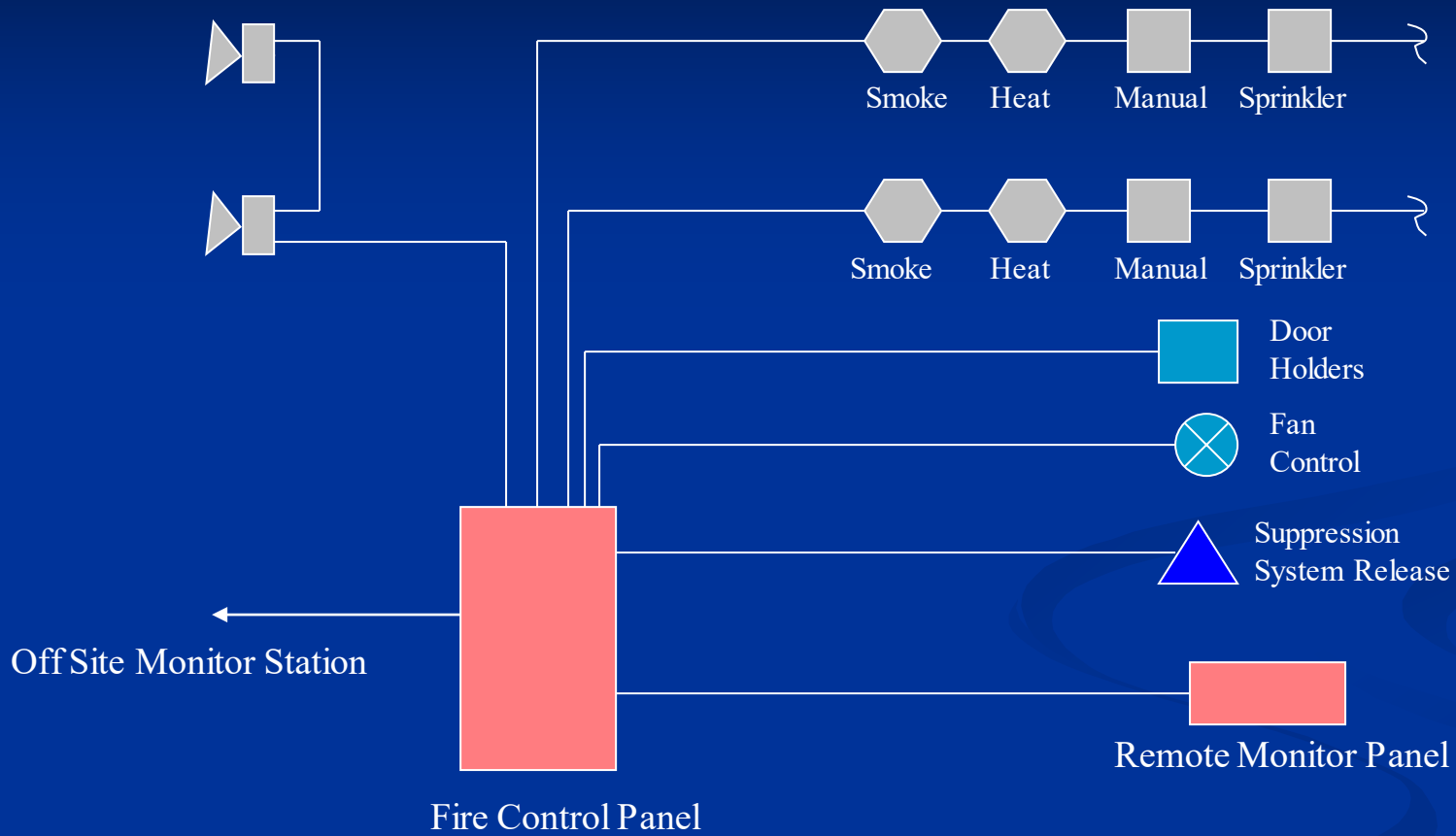
Fire Safety Elements

- Fire Prevention
 - Life Safety
- Fire Resistance
- Fire Detection
- Fire Suppression
 - Recovery









Fire Alarm System

























VESDA NEW WING BASEMENT VAULTS

VESDA

ZONE

- 1 VAULTS 1, 2
- 2 VAULT 3
- 3 VAULT 4
- 4 VAULT 5/ FUR

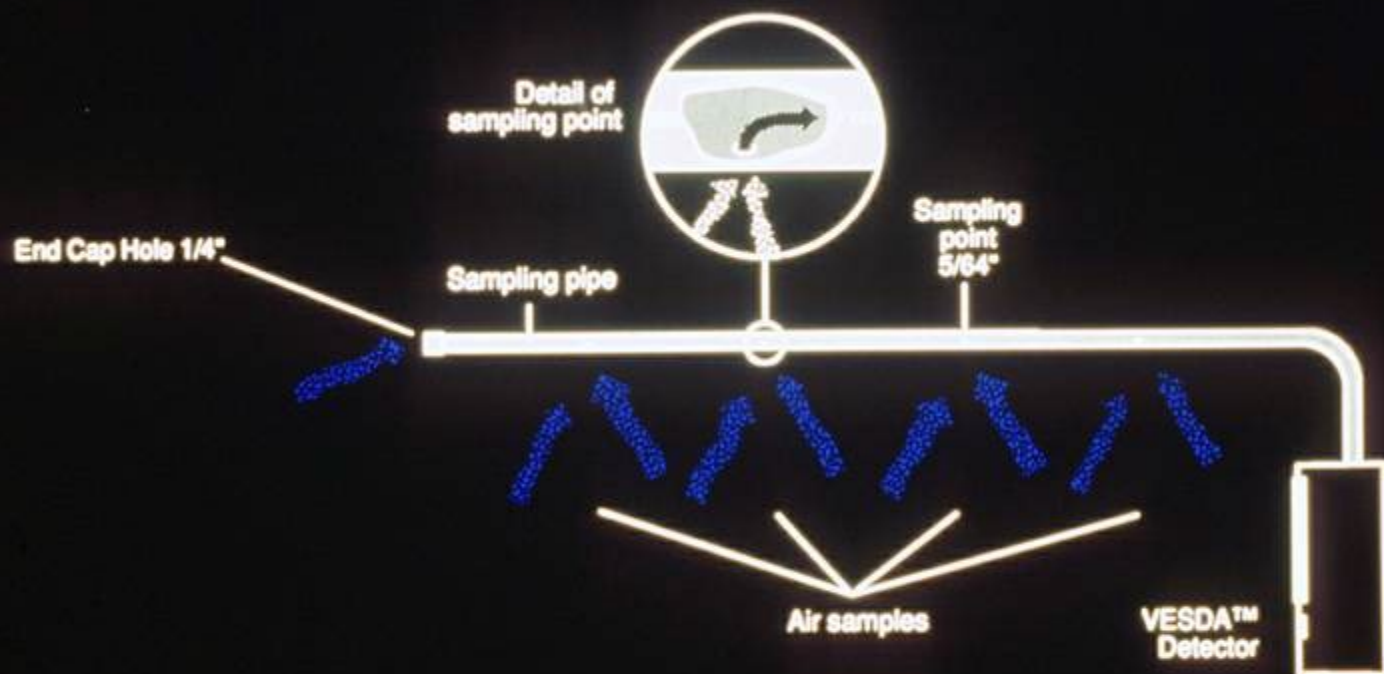
100

- FIRE
- ACTION
- ALERT

VESDA LineScanner

- Test
- Reset
- Panel
- Beep

VESDA™ Air Flow



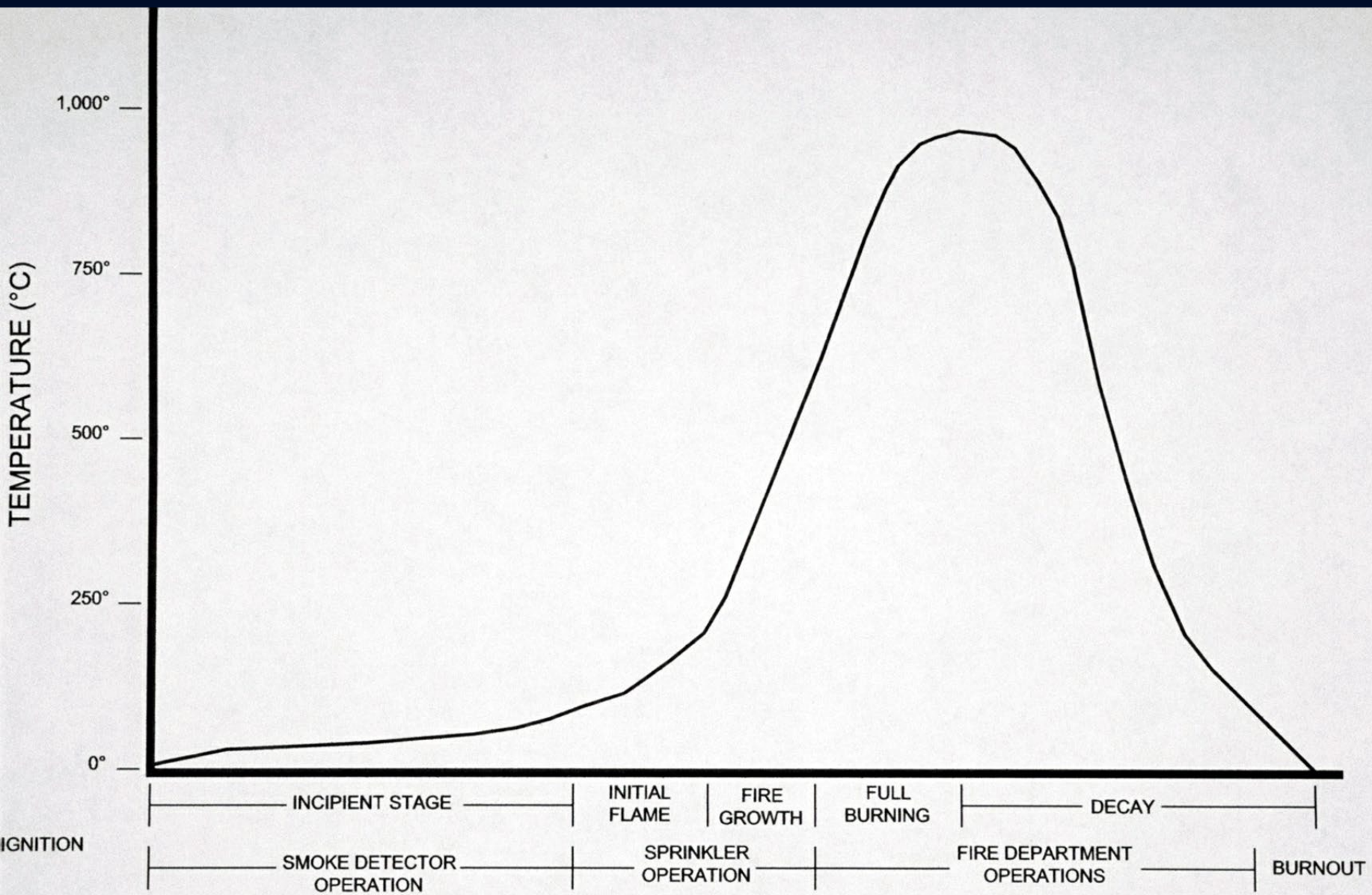




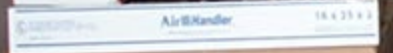


Wash. St. 402-1234
5400 St. 402-1234
433-1234

6-OR-0



FIRE GROWTH CURVE





EST
Edwards Systems Technology

ACCEPTED FOR USE IN
NEW YORK CITY BY
DEPARTMENT OF BUILDINGS
MEA-13-92E

**AGENT
RELEASE**

SERVICE DISCONNECT SWITCH

LIFT

FIRE
SUPPRESSION
SYSTEM
RELEASE

FCI

For fire safety
OCCUPANCY
of this room is
LIMITED TO
102 219
NO SMOKING
NO OPEN FLAMES
NO CIGARETTES
NO ALCOHOLIC BEVERAGES



EXIT



EXIT

FOR THE
OCCUPANCY
102 219





GREATER BURLINGTON CELLAR-SAVERS
SUPPORTING SHARPS HOSPITAL FOR CHILDREN
BURLINGTON VERMONT

MAJORS TEMPLE

Cellar Savers

Cellar Savers

Cellar Savers

Cellar Savers





Fire Outcome Possibilities

- It goes out itself (no more fuel or oxygen)



Fire Outcome Possibilities

- It goes out itself (no more fuel or oxygen)
- **Someone puts it out**

















WALSH FIRE CO. INC.
1921-1926

FIRE CO. INC.

999
DOOR
& CURTAIN

Sprite
EDDIE'S INN

VI
POST

Fire Outcome Possibilities

- It goes out itself (no more fuel or oxygen)
- Someone puts it out
- **Other things put it out
(sprinkler, mist, gas)**



Fire Outcome Possibilities

- It goes out itself (no more fuel or oxygen)
- Someone puts it out
- Other things put it out (sprinkler, mist, gas)
- **It burns down**

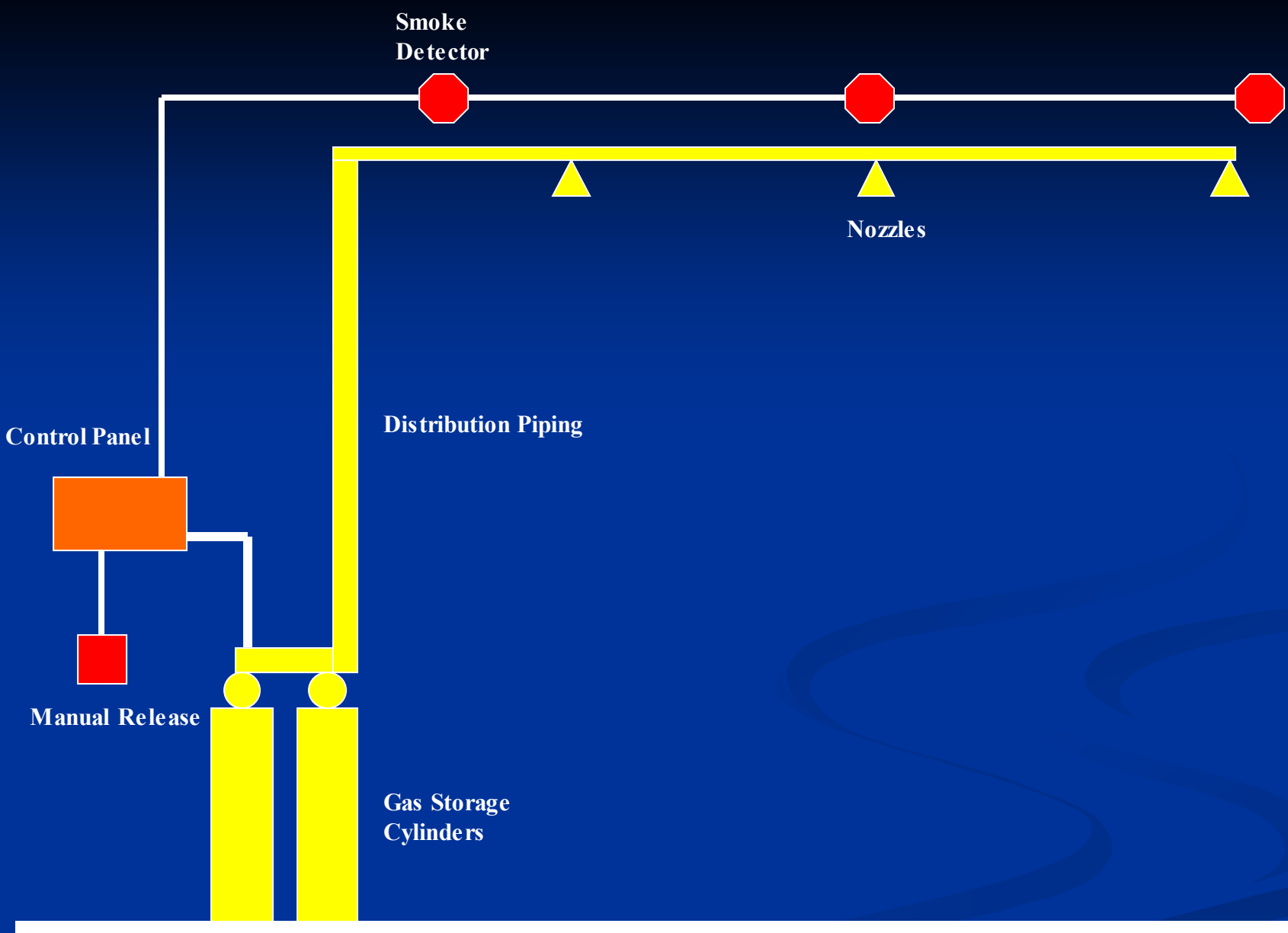


ENGINE RESCUE
MILESBURG

MILESBURG

4





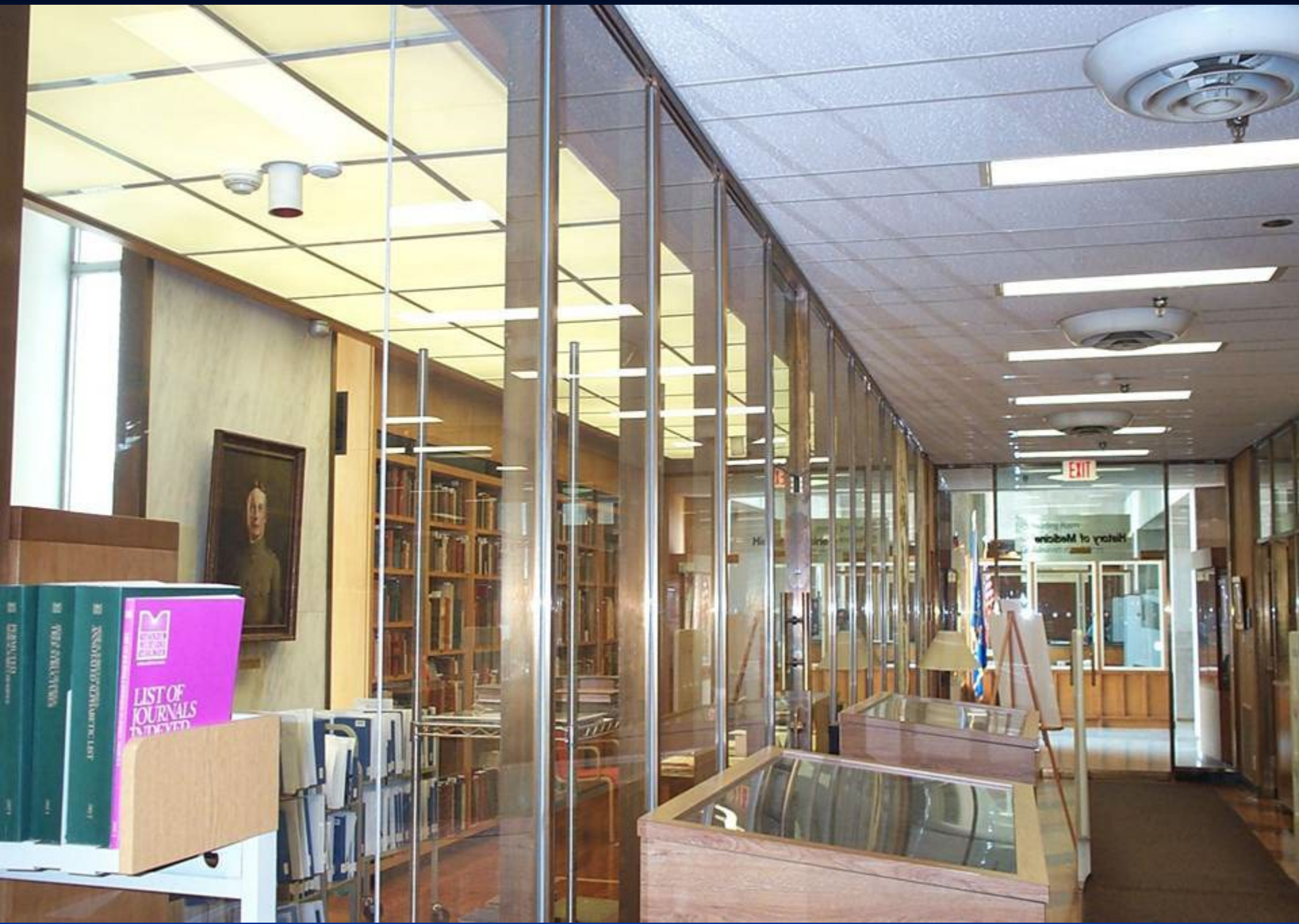
Types of Gas Systems

- Inerting Agents - CO₂, Inergen)
- Halocarbons - Halon, FM-200, FE-13
- Intended for special hazard applications
- Must be discharged into enclosed, sealed rooms
- Generally not acceptable for full building





2 10:57





DEPT.
AGENCY CONTENTS
1982-1985
DATE TO DESTROY

DEPT.
AGENCY Loan & Common Files
1766 - 1767
DATE TO DESTROY
1985-87

AGENCY CONTENTS
DATE TO DESTROY

AGENCY Loan & Common Files
1769-1769
DATE TO DESTROY
1985-86

AGENCY CONTENTS
DATE TO DESTROY

AGENCY CONTENTS
DATE TO DESTROY

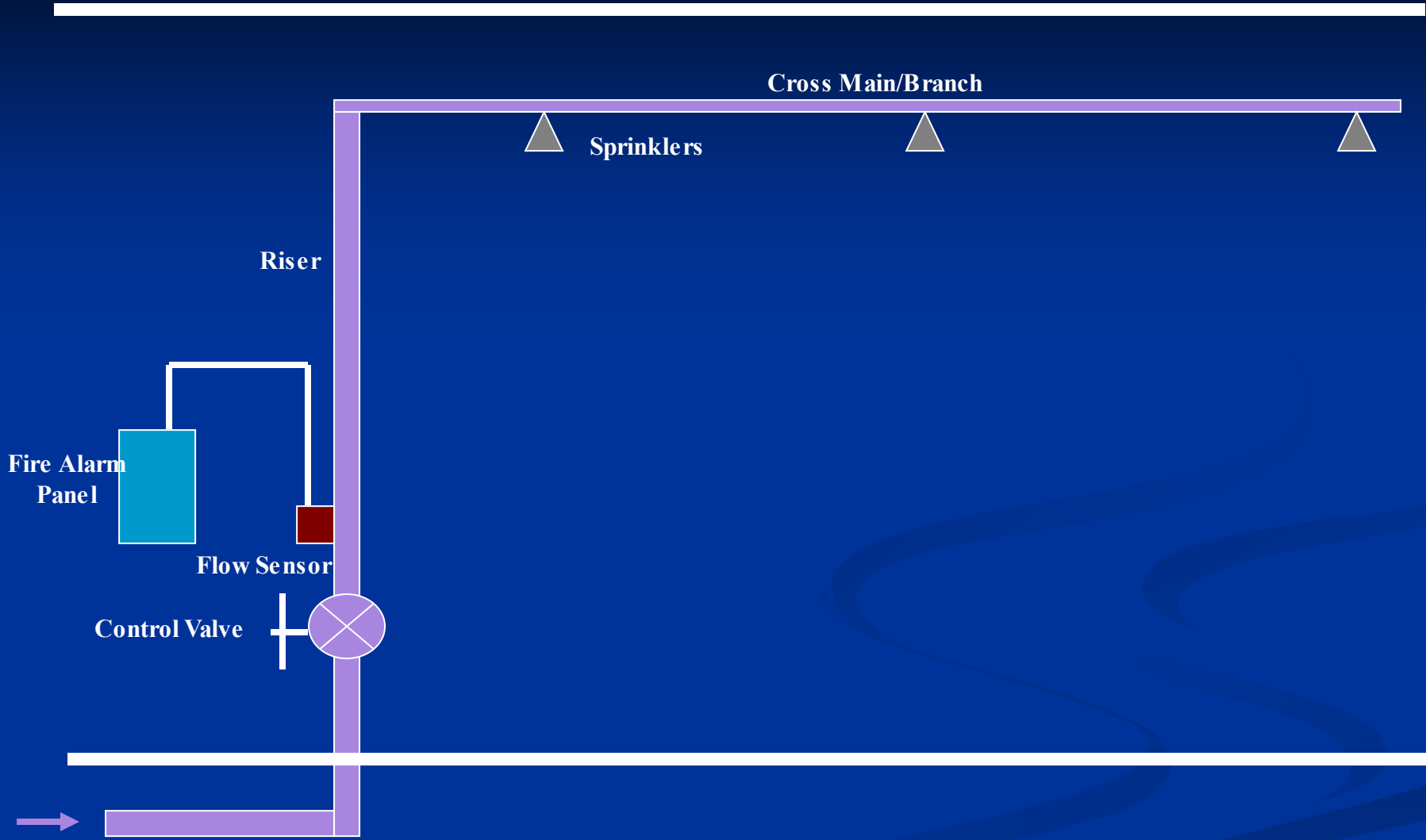




Water Systems

- Sprinklers
- Mist – High and Low pressure systems
 - Wet Pipe
 - Dry Pipe
 - Pre-Action
- Cycling (On-Off)
 - Deluge





Wet-Pipe Sprinkler



132 STATE STREET

HISTORIC WYOMING





Box 19

Box 12 of 16

Box 11 of 16

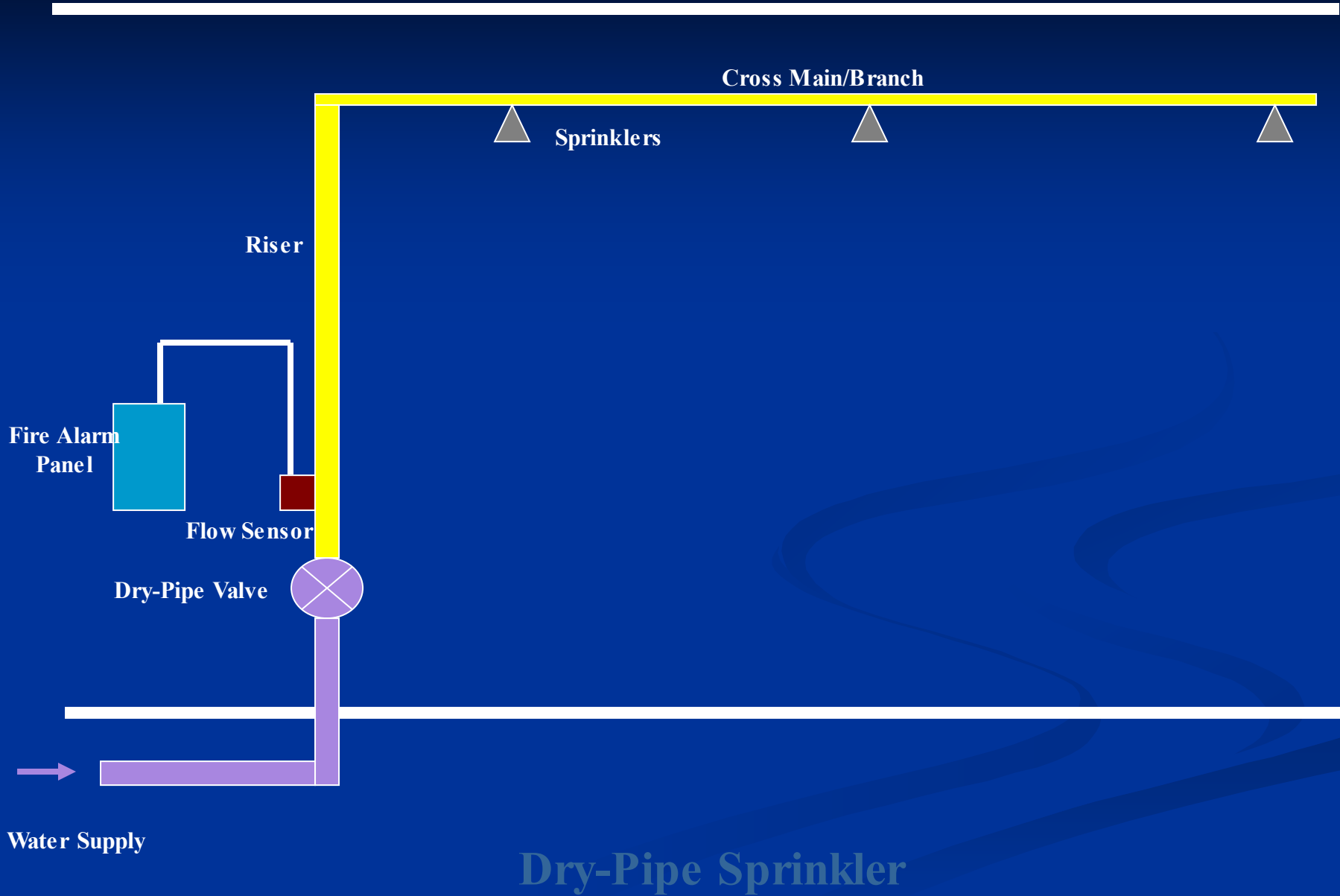
شركة
مستقل
2022

EXP 2022
Storage Box

EXP 2022
Storage Box

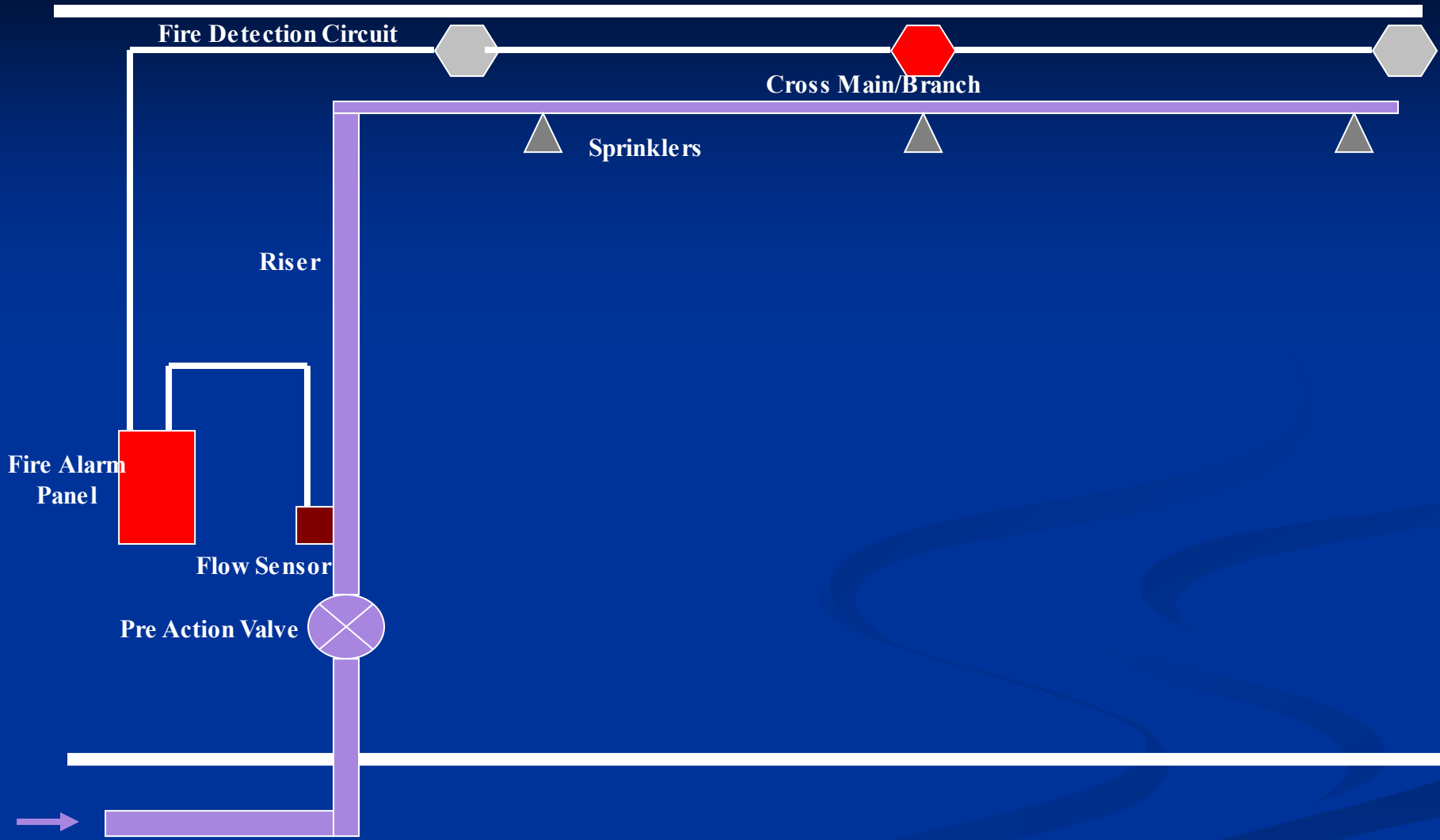












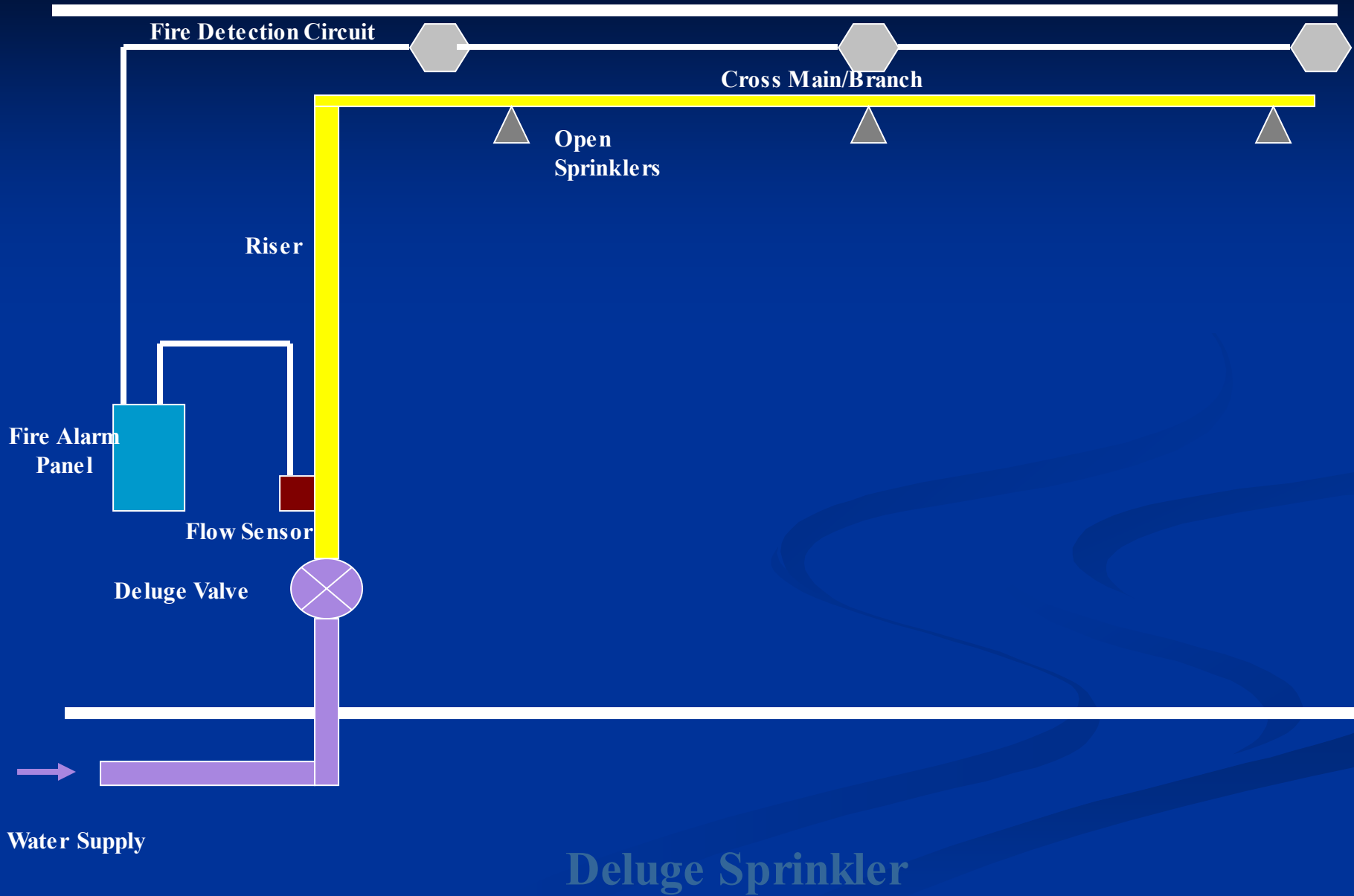
Pre Action Pipe Sprinkler







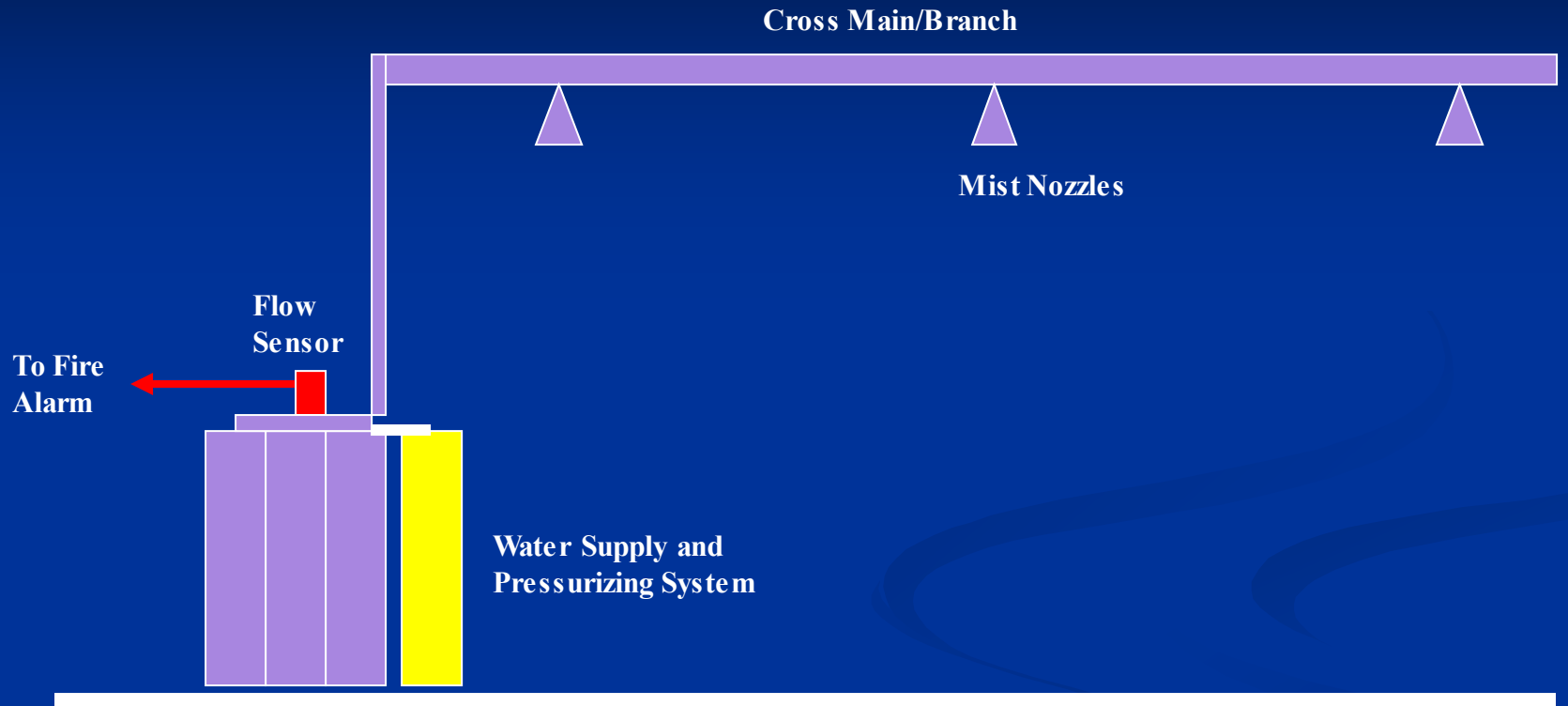






The Episcopal Church
of Boston
THE OLD NORTH
CHURCH
Sunday Services
9 am, 11 am
Open Study in History
9 am - 2 pm
The Rev. Stephen J. Pope
Rector





Water Mist Fire Suppression Schematic



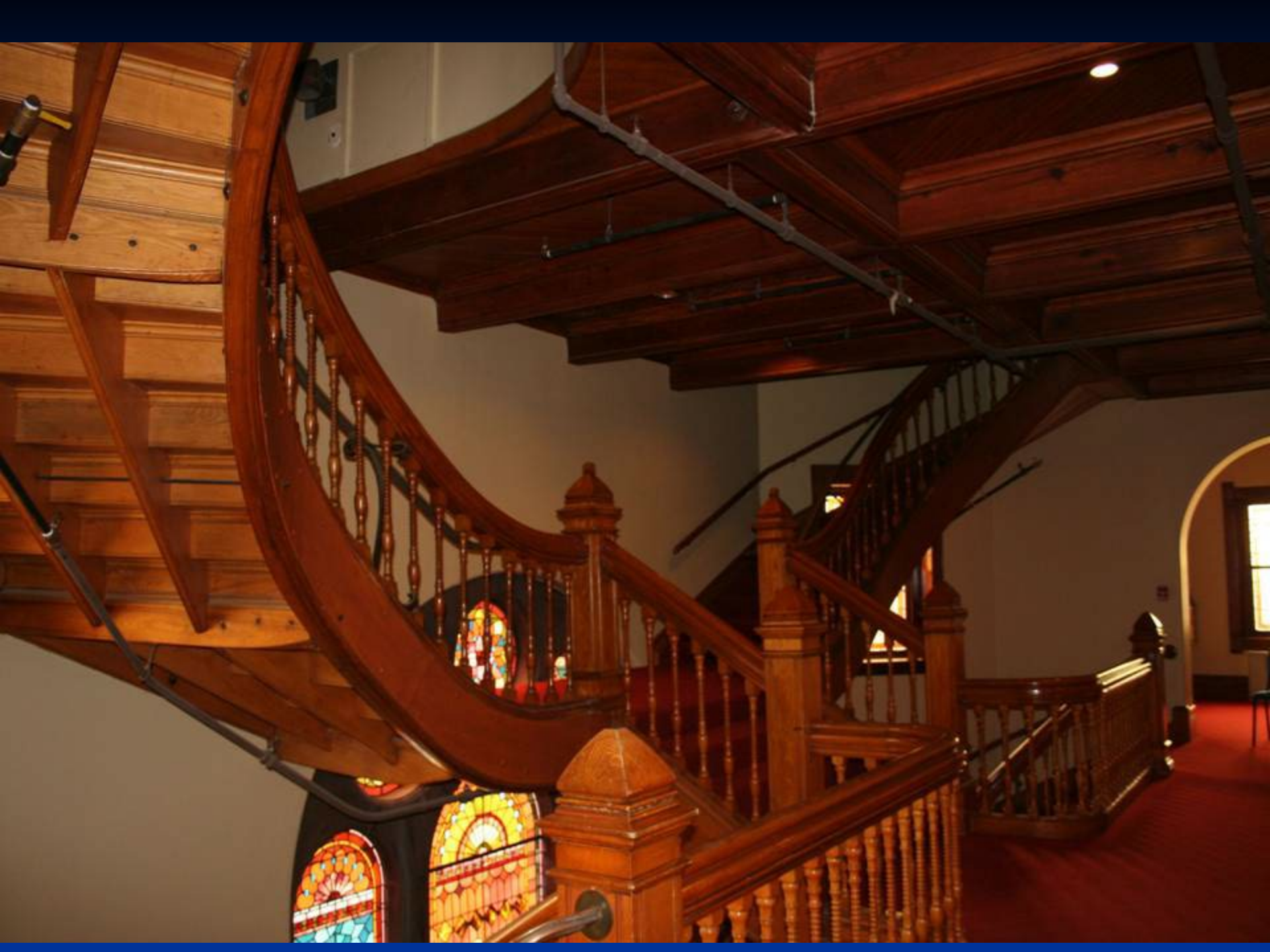


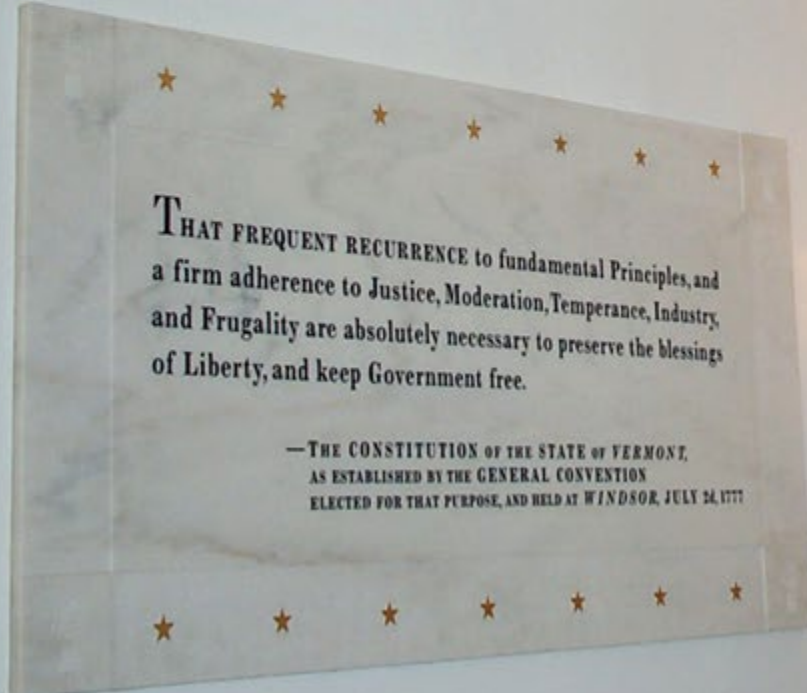










A rectangular marble plaque is mounted on a white wall. It features a decorative border of small gold stars along the top and bottom edges. The central text is engraved in a serif font.

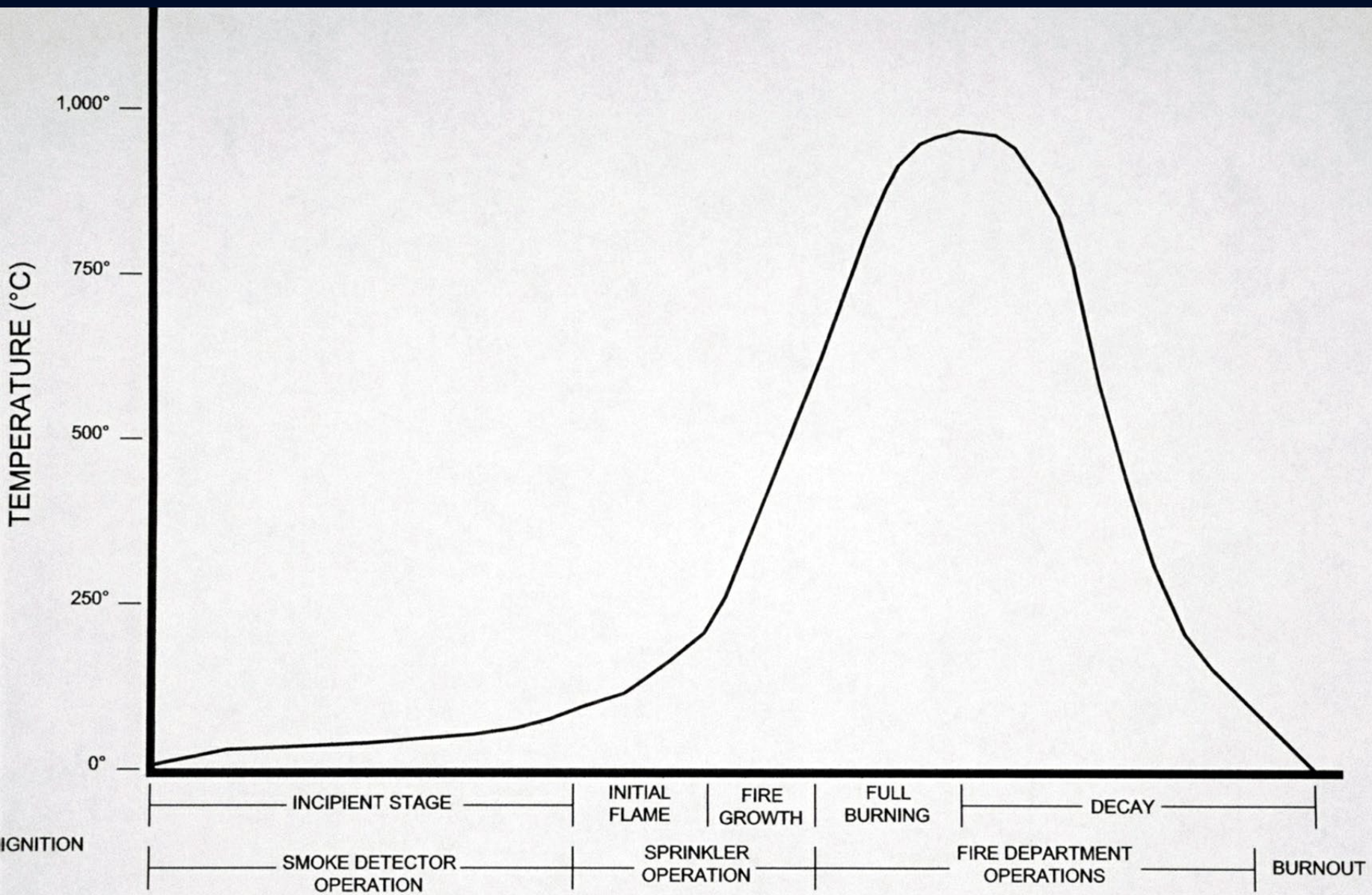
THAT FREQUENT RECURRENCE to fundamental Principles, and
a firm adherence to Justice, Moderation, Temperance, Industry,
and Frugality are absolutely necessary to preserve the blessings
of Liberty, and keep Government free.

— THE CONSTITUTION OF THE STATE OF VERMONT,
AS ESTABLISHED BY THE GENERAL CONVENTION
ELECTED FOR THAT PURPOSE, AND HELD AT WINDSOR, JULY 24, 1777



Fire Protection Elements

- Fire Prevention
 - Life Safety
- Fire Resistance (Barriers)
 - Fire Detection
 - Fire Suppression
 - Recovery



FIRE GROWTH CURVE

Fire Detection

- Manual Alarm
- Thermal Detection
- Spot Smoke Detectors - Ionization, Photoelectric, Laser
- Beam Smoke Detector
- Air Sampling Smoke Detection

Fire Outcome Possibilities

- It goes out itself (no more fuel or oxygen)
- Someone puts it out
- Other things put it out (sprinkler, mist, gas)
- It burns down

Automatic Fire Suppression

- Gases (Clean agents)
- Sprinkler
- Water Mist
- Wet-pipe, Dry-pipe, Pre-action, On/Off, Deluge

What are the best fire detection and suppression systems for my cultural property?

It depends.....

STATE OF NEW YORK
EXECUTIVE DEPARTMENT
DIVISION OF
STATE POLICE
WARNING - NOTICE

These premises have been placed
under supervision of State Police
Patrol.

All persons are hereby warned
against trespassing or committing
crimes or offenses on this property.

This notice is posted pursuant to the provisions of
Section 160.50 of the Penal Law, which requires that
this notice be posted on any premises which are
under the supervision of the State Police.

State Police - New York State Police
Division of State Police
www.nyspolice.org



