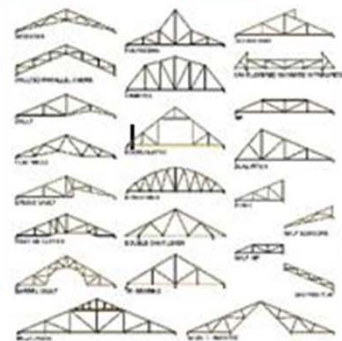




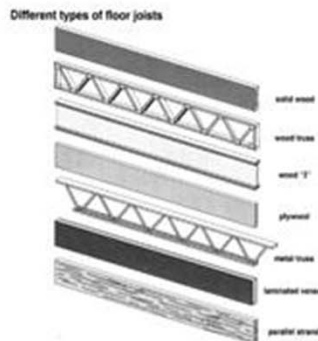
Building Construction Identification Placard

Huber Heights Codified Ordinance
1523.01
Enacted 2011


City of Huber Heights Placard



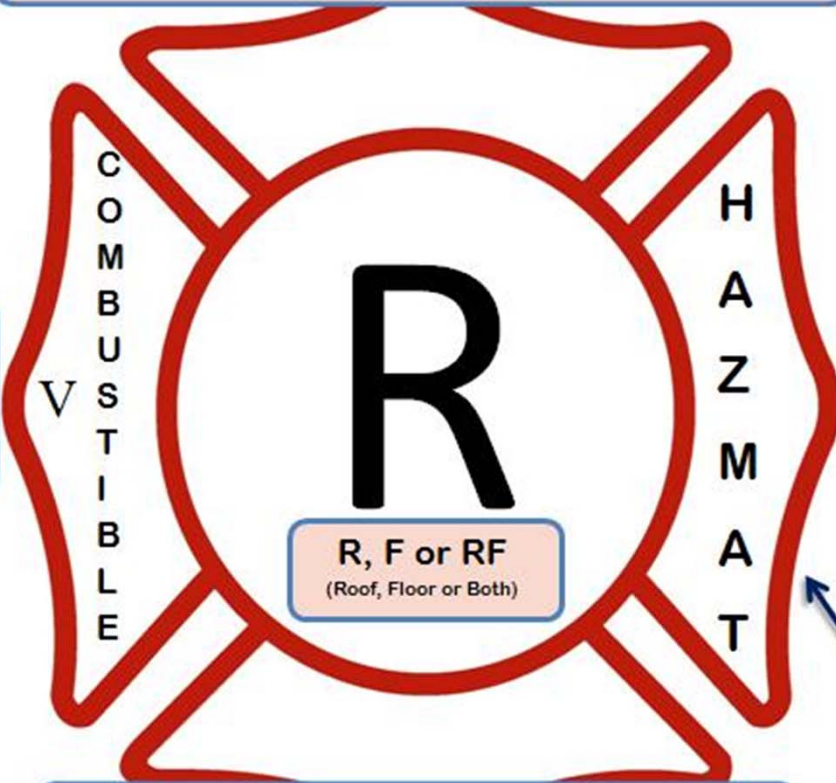
Building Class
Roman Numerals
I, II, III, IV or V
(Non-Combustible, Limited
Combustible or Combustible)




Roof Types:



(Metal or Wood) (Laminate or Legacy)



Floor Types:



(Metal or Wood) (Laminate or Legacy)



HHFD
Building Construction
Placard
HHCO 1523.01

Special Hazards:

- HAZMAT
- Roof HVAC
- High Storage

Red Outline
for Non-Sprinkler

Green Outline
for Sprinkler



What is there to discuss?

- History and Purpose

(why did we do this?)

- The Sign Explained

(At 3 AM, what in the world does this thing mean?)

- Future Growth and Development

(What can we do to improve upon this?)

History and Purpose



- 🔥 Where it Began
- 🔥 Design and Challenges
- 🔥 What drove the requirements
- 🔥 How was it developed and why did Huber Heights get involved

Where it Began

- The actual first Building Placard appears to have been in Wheeling, Illinois on April 18, 1994 after a near-miss fire. [Article](#)
- In the past 10 years, over 9 cities and states have independently passed their own legislation. [Trussid.com](#)
- Florida appears to be diligent in education and enforcement. [Facebook](#), [Law](#)
- Most of the legislation arose from near-miss or fatal fire incidents. [Firefighternation.com](#)

Design and Challenges

- Proposed in Huber Heights in 2004 by Lt. Mike Muhl after a near-miss involving our own personnel
- Revised and put before Ordinance Review Commission and City Council by Fire Prevention Bureau in 2011
- Multiple Years pass between code cycles reducing the opportunities to present new legislation
- Articulation to law makers and Economic Development Staff for non-aesthetically pleasing signage
- Administrative Staff turnover with loss of institutional knowledge
- Reductions in staffing, limiting special project development over day-to-day priorities

What Drove the Requirements

- Significant Changes in Construction and Building Design
- Firefighter Fatalities and Injuries
- Quick-Look information for ICs that was weather resistant, durable, permanent and reliable
- Changes in International Fire Codes within the last decade with increased focus on first-responder safety (Signage, Egress, Communication, Etc.)

Education, Studies and Development

Study and Surveys [Bangor, Maine 1999](#)

EFO Project

Results of Study

- 1,500 Surveys Distributed at various National professional conferences with 1,333 returned
- Of the 1,333 responses, 16 departments use Truss Identification Signage
- Of the 16, only 4 departments differentiate between Floor and Roof as well as wood and steel trusses
- Of the original 1,333, there were 348 that identified incidents involving structural failure and truss construction in their community

NIOSH Reports

2003 NIOSH Tennessee

Father's Day June 15, 2003 Family Dollar in Memphis, Tennessee

Municipalities should consider requiring specific building construction information on an exterior placard.

Discussion: Information regarding building construction is invaluable to fire fighters if a fire should occur. The information could provide fire fighters with details about **roof type** (lightweight truss, bowstring, etc.), **roof materials** (metal, wood, etc.), **roof loads** (HVAC units, displays, etc.), **sprinkler system(s)**, standpipe location, utilities (gas or electric), occupancy, occupancy hours, **chemicals on site**, pressurized cylinders, contact numbers, and the interior floor layout. This information could save the IC time when planning the fire attack. Additionally, the information would provide fire fighters with important information that they might not otherwise have. However, the presence of building construction placards should not preclude doing pre-incident planning and inspections. At a minimum, buildings could be marked with a triangle or the letter "T" on the outside of the building to warn fire fighters of the presence of truss construction. To ensure that fire fighters are aware of structures that might have a truss roof, the State of New Jersey has passed a law requiring all building owners to place an exterior placard on structures which incorporate a truss roof.

Figure1 shows the signage used in New Jersey.



Commercial structure involved in arson fire

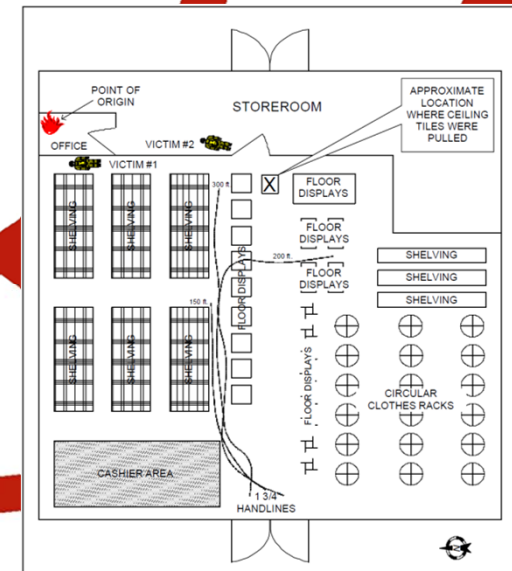
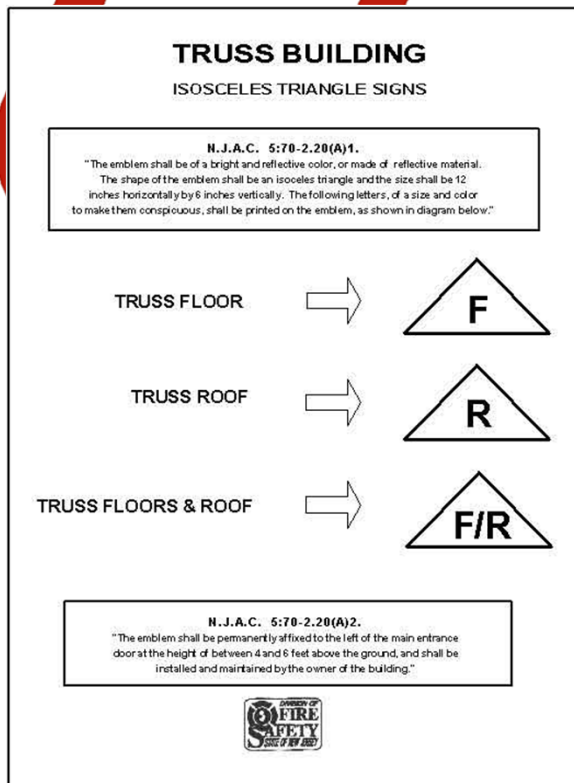


Diagram 2. Building layout aerial view

More NIOSH Reports Related to Truss and Building Markings

- Illinois December 22, 2010 [Report](#)
- Texas February 14, 2000 [Report](#)
- 45 NIOSH Investigations involving structural collapse and firefighter fatalities/injuries between 1996 and 2011. [Reports](#)
- [*Preventing Injuries and Deaths of Fire Fighters Due to Truss System Failures \(May 2005\)*](#)

How ours was developed

- 2004 Proposal from Huber Heights Lt. Mike Muhl
- Revisited in 2009 by new Huber Heights Fire Marshal with strong interest in Pre-Incident Planning
- Influence from NFPA 1620 as well as NIOSH recommendations and LODD and near-miss reports
- Community experiencing large volume of newer lightweight construction with heavy fire and occupant loads (mercantile districts)
- Participation in local and national trainings, firefighter development and code committees

The Sign Explained

- In a sentence, the sign is; Durable, weather-proof, readily identifiable but not distracting, reliable, descriptive, code compliant, user friendly, flexible and intended as a guideline, not to be replaced by experience, training and education.
- You must accept this sign is NOT a pre-plan
- You must accept this sign cannot work alone
- You must accept this sign will not be accepted by everyone and is only a tool in the tool box

The Sign Explained, more...

- Basically, take most of the “major” building components you would like to know about the building you are about to enter and squeeze them into series of color coded “Fire Service” letters and symbols on a 10” by 10” placard.
- Whenever you have a new building go up or renovate an existing structure, place a sign on structure in the same location as the last one and move on. (hopefully never needing it)

The Sign Explained

Meat and Potatoes



Take Five Major Building Components

(One for each section of the Maltese Cross)

- First Identify Roof, Floor or Both (Letters in Center)
- Roof Construction Material (and design) Top
- Floor Construction Material (and design) Bottom
- Building Construction Classification (With Assistance)
- Special Hazards (Roof HVAC, HAZMAT, High Storage)
- Finally the outline color indicates presence of Sprinklers
(Green for Protected and Red for Unprotected)



First Identify Roof, Floor or Both (Letters in Center)



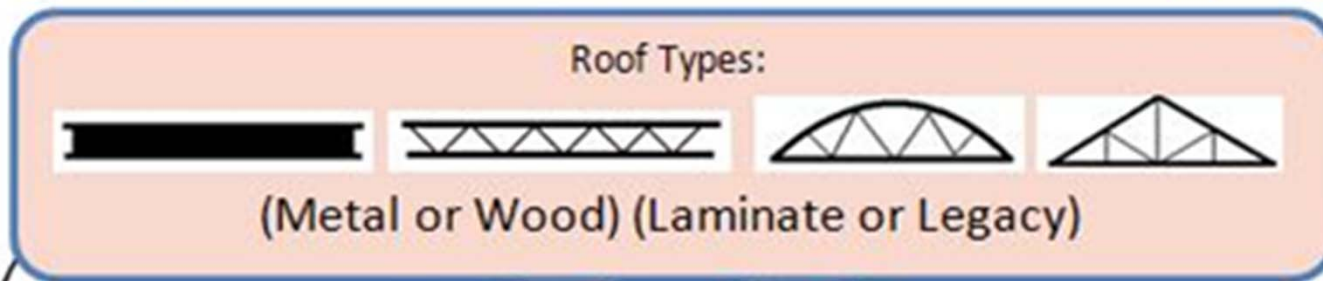
The center of the Maltese cross should allow you to appropriately identify where the presence of Lightweight Construction exists within the placarded structure. (Roof, Floor or Both)

For structures more than one (1) story in height, the presence of the letter F (indicating Floor) may suggest a basement, crawlspace or just simply the floor joist supporting the second (2nd) story.

Roof Construction Material (and design) Top

The “Top” of the Maltese cross was utilized to indicate the construction design of the Lightweight Truss in the **Roof Construction**, whether it was constructed of metal or wood and if wood, was it laminate or legacy construction.

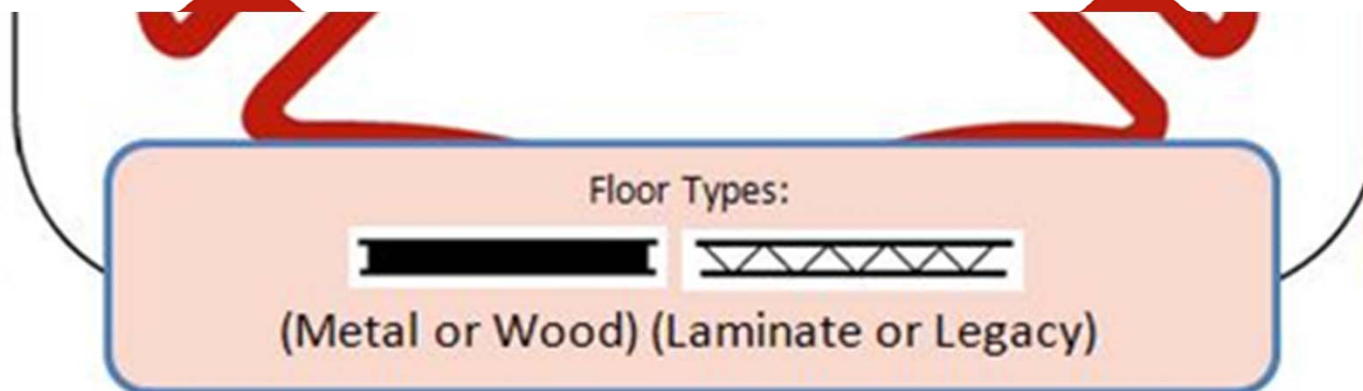
You should expect to see a small image of the construction type as well as a few words below the image indicating the materials used in its creation.



Floor Construction Material (and design) Bottom

The “Bottom” of the Maltese cross is very similar in it’s intent as the “Top”. The “Bottom” of the cross was utilized to indicate the construction design of the Lightweight Truss in the **Floor Construction**, whether it was constructed of metal or wood and if wood, was is laminate or legacy construction.

You should expect to see a small image of the construction type as well as a few words below the image indicating the materials used in its creation.

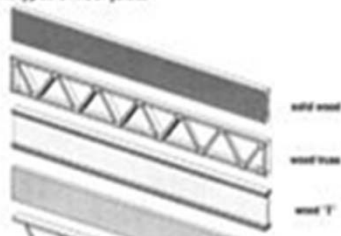


Building Construction Classification (With Assistance)



**Building Class
Roman Numerals**
I, II, III, IV or V
(Non-Combustible, Limited
Combustible or Combustible)

Different types of floor joists



C
O
M
B
U
S
T
I
B
L
E

The “Left” side of the cross indicates the building construction classification. As we have all undoubtedly learned the five (5) categories somewhere during our career, the challenge is to remember when it counts most. With all of the acronyms and abbreviations in the Fire Service these days, that can be taxing. Not to mention there are actually ten (10) categories, sub letters A and B for each roman numeral.

Basically Type I to III is non or limited combustible, IV is Heavy Timber or combustible and V is wood frame or combustible.

Upon request, we did decide to add the words non-combustible, limited combustible and combustible to assist.

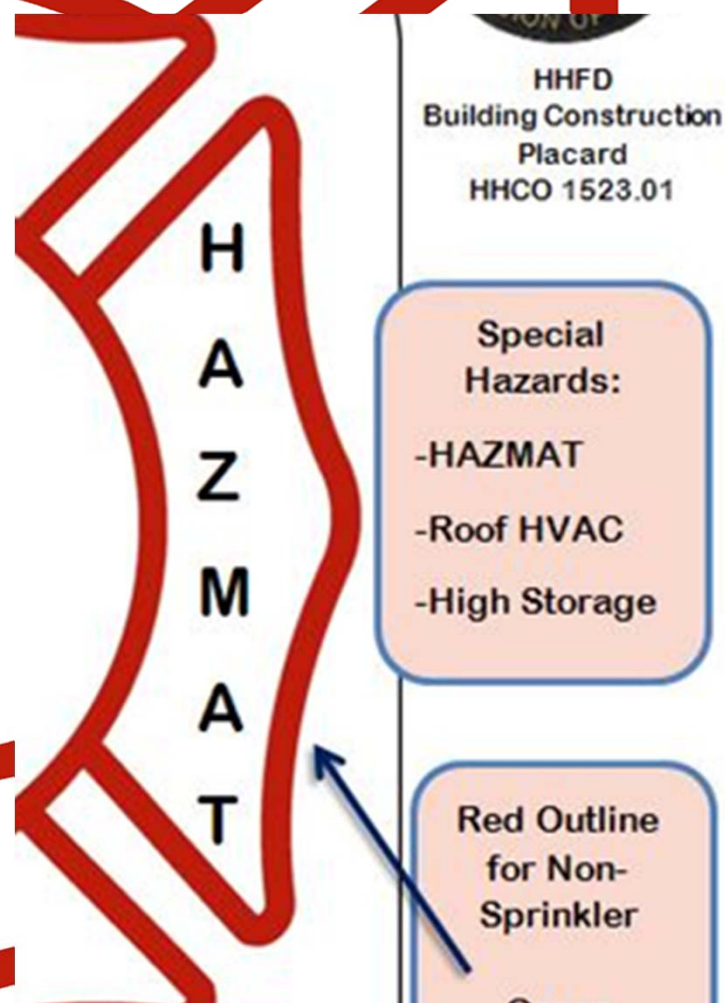
Special Hazards

(Roof HVAC, HAZMAT, High Storage)

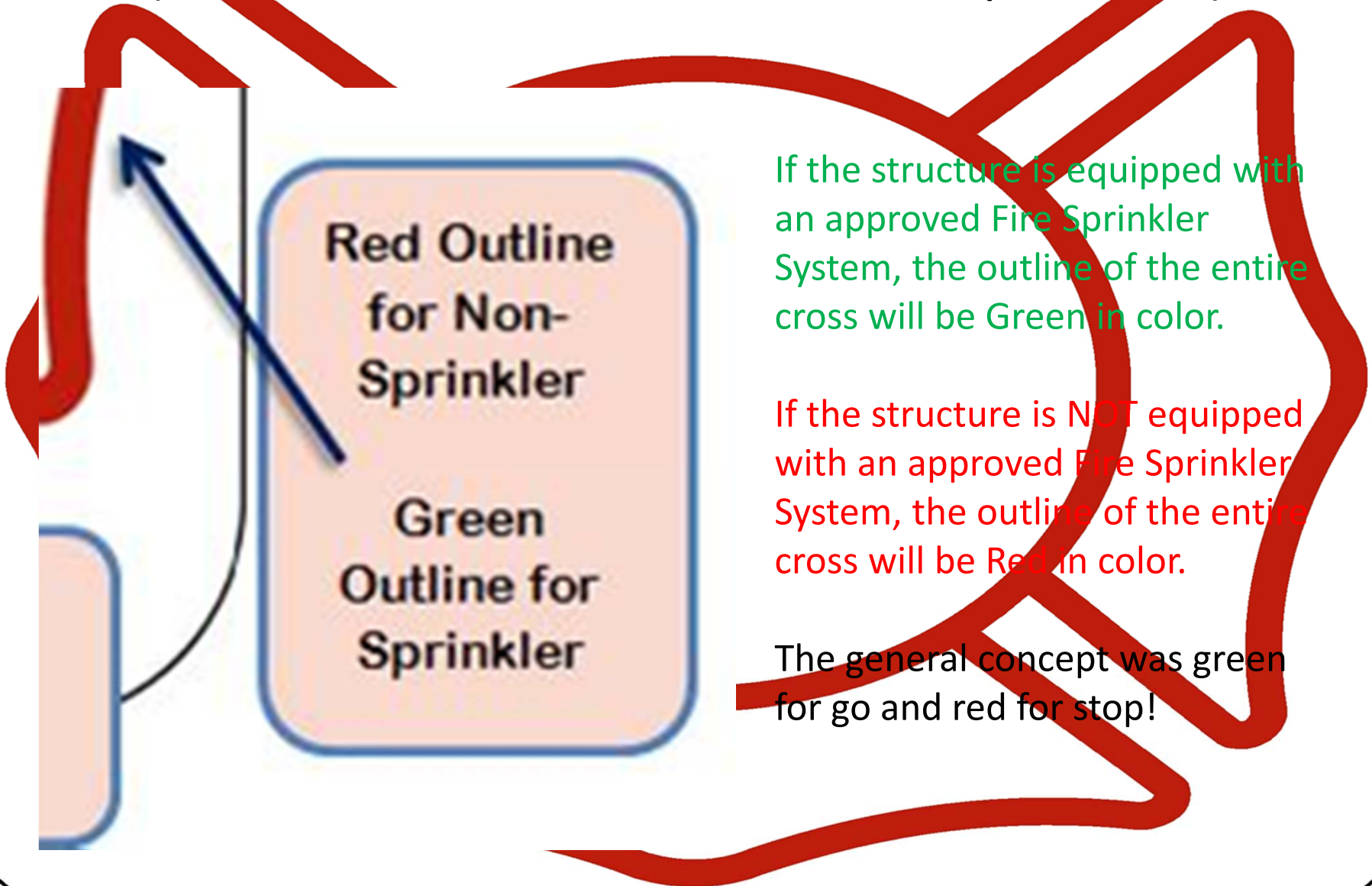
The “Right” side of the cross indicates the presence of a special hazard. This is something that may not be present at your typical commercial occupancy/structure.

In the case of many of our “fast-food” establishments, there may be multiple HVAC, Mechanical and Electrical units on the roof weighing in tons. There are other occupancies that may contain High-Rack or Palletized Storage that would require additional water supply and resources.

Hazardous Materials tends to be its own animal requiring a special skill set and lack of fear to glow in the dark!



The outlining color indicates presence of Sprinklers
(Green for Protected and Red for Unprotected)



Red Outline
for Non-
Sprinkler

The diagram illustrates the concept of outlining colors for fire sprinkler systems. It features a central box with two sections: 'Red Outline for Non-Sprinkler' and 'Green Outline for Sprinkler'. A blue arrow points from the 'Red Outline' section to a red outline of a structure on the left. Another red outline of a structure is shown on the right. The entire diagram is enclosed in a red border.

Green
Outline for
Sprinkler

If the structure is equipped with an approved Fire Sprinkler System, the outline of the entire cross will be Green in color.

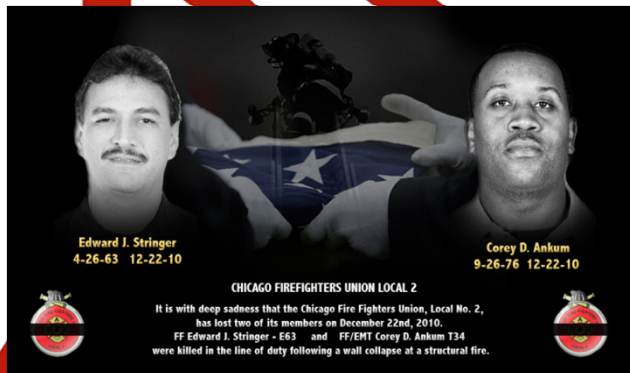
If the structure is NOT equipped with an approved Fire Sprinkler System, the outline of the entire cross will be Red in color.

The general concept was green for go and red for stop!

Future Growth and Development

- Pre-Incident Plans
- Larger Knox Boxes
- In-Depth Building Final Inspections (Maps, Instructions, Signage, Radio Repeaters, Etc.)
- CAD (Data Entry from First-Responders)
- Company Walkthrough (District Orientation)
- Annual Inspections (All Buildings)

Never Forgotten



There are many others, not on this page, also in our thoughts and prayers



Thank you and be safe!

Presented by:

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