

# IF THESE WALLS COULD TALK

*“The fireground is a poor environment to make alternative tactical operations based on*

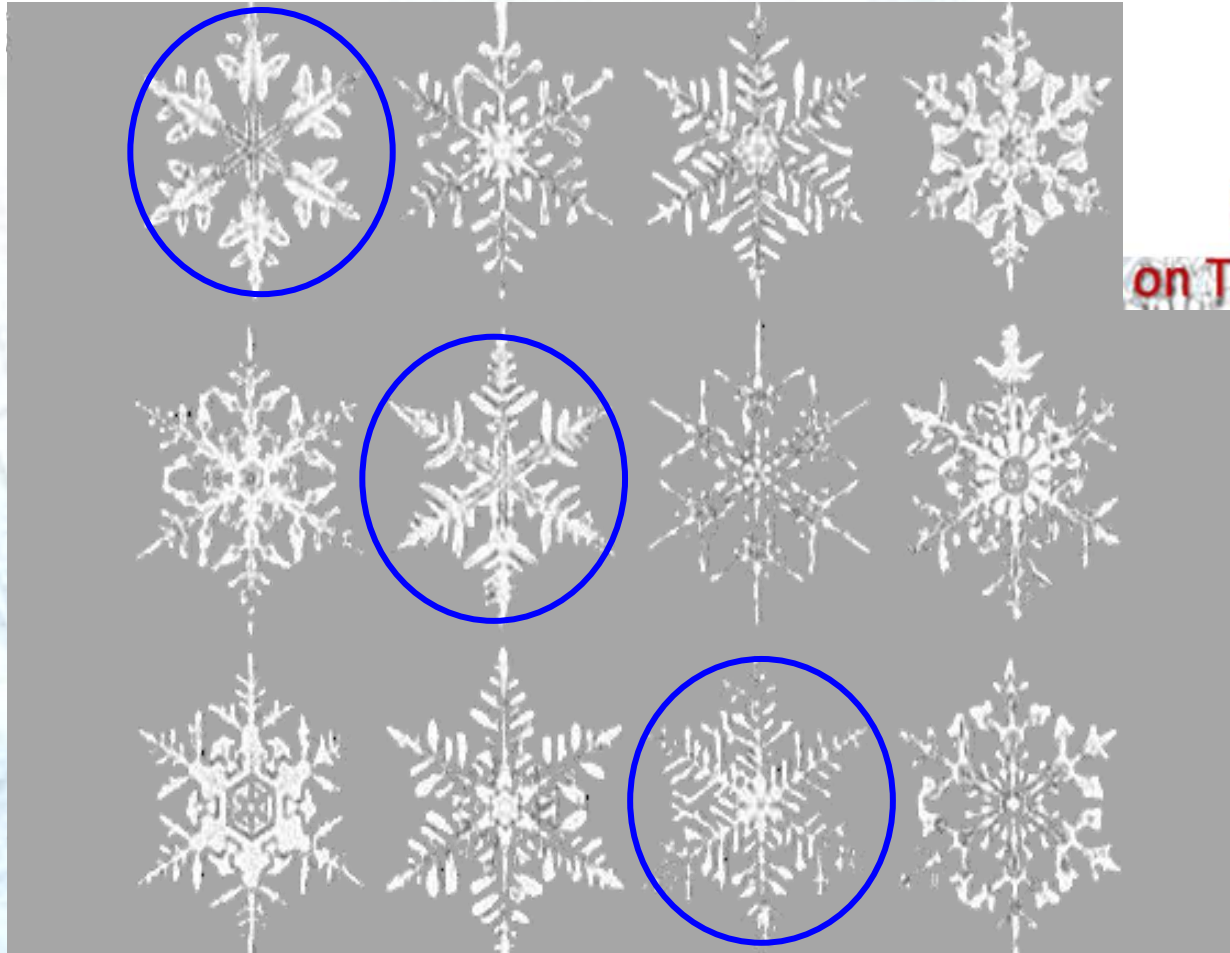
**GUESS-BASED KNOWLEDGE**

*as an incident rapidly unfolds.”*

**Presented by: Jack J. Murphy**



# Tall Buildings are like Snowflakes



Playing "CATCH-UP"  
on Tall Buildings is not Good



MESSAGE TO BUILDING OWNERS

**WE ARE NOT INVITED TO A GARDEN PARTY!**



# BUILDING LIFE CYCLE

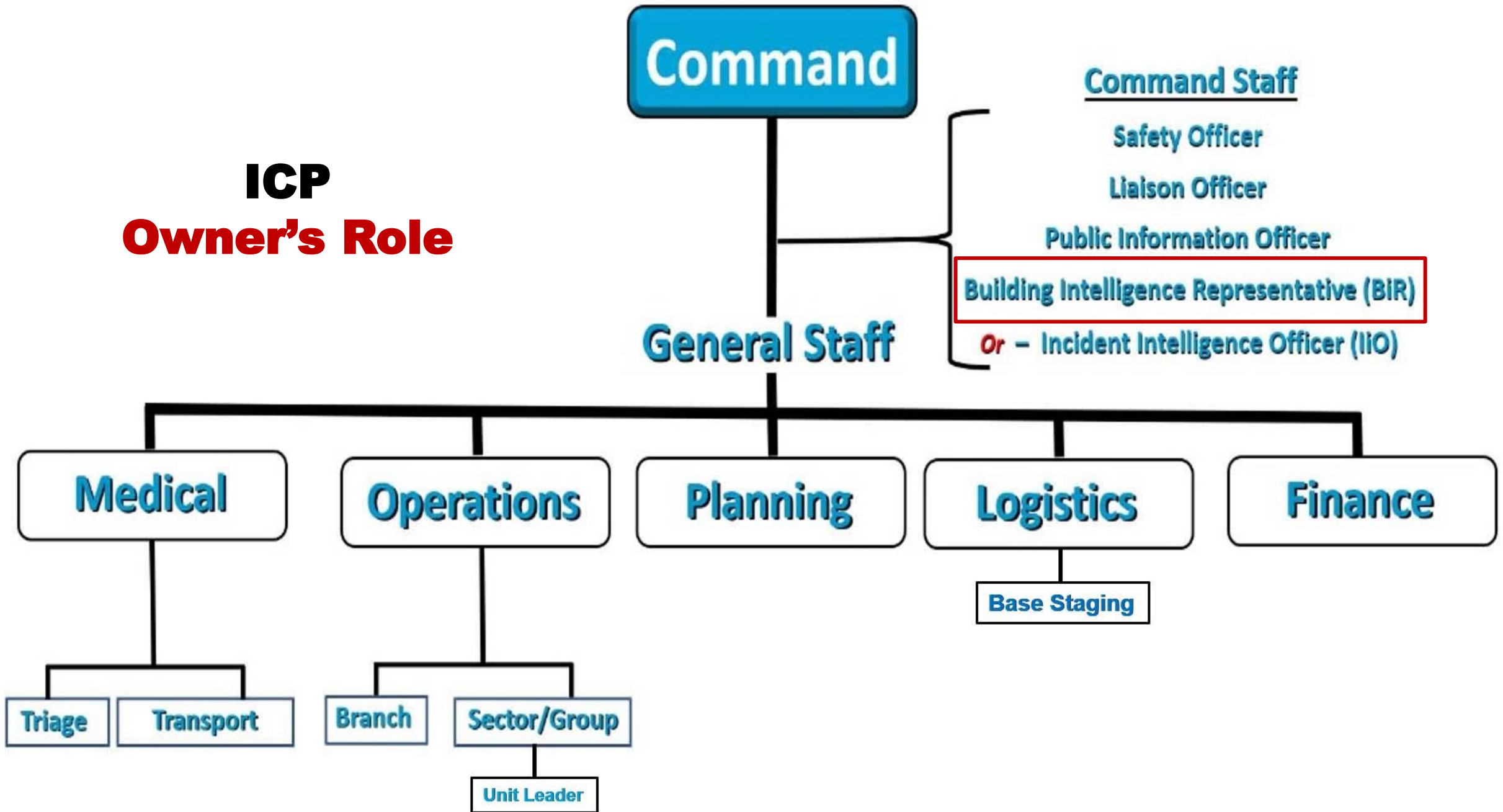
## WHAT IS OWNER'S ROLE FOR EMERGENCY PREPAREDNESS, RESPONSE & RECOVERY

### All-Hazard (*Non-Fire*) Threats



### Natural Hazards

# ICP Owner's Role



# Firefighters Going in Blind?





**Ask a Navy Seal if they would go into battle in 5 minutes from a dead sleep:**

- To an unknown battlefield,
- Facing an unknown enemy,
- For an unknown target,
- With little or no intelligence,
- With other soldiers they may not know,
- They would say ***“That’s crazy”***

BATTLE READY - INTELLIGENCE!

**KbyG**  
Know Before  
You Go



**Ask a Firefighter if they would go into battle in 5 minutes from a dead sleep:**

- To an unknown battlefield,
- Facing an unknown enemy,
- For an unknown target,
- With little or no intelligence

- They would say ***“Lets Go!”***



# HIGH-RISE BUILDINGS

UNDERSTANDING THE VERTICAL CHALLENGES

JERRY TRACY, JACK J. MURPHY, AND JAMES J. MURTACH

Fire Engineering  
BOORKE & VIDEOS

7

## If These Walls Could Talk

### 7.1 Pre-Fire Plan History

During World War II, a young Navy officer, Frank I. Brannigan, realized he was unprepared to deal with a fire at the naval base facilities under his command. Needing to understand more about each building, including its type of construction, building components, building systems, and fire protection systems, he developed a concept of learning how to prepare to fight a building fire before the incident occurred, and thus the pre-fire plan concept was born. In 1948, he published his first article for *Fire Engineering*, "Surveys Aid in Preparation for Handling Large Fires." In the article, Brannigan describes why a pre-fire plan is important, noting,

A firefighting survey is an attempt to gain beforehand as much knowledge as is possible about a particular fire potentiality, so that when and if fire does strike, the fire chief may lead his forces intelligently. Every possible factor that might have a bearing on the fire is considered. It is not to be confused with fire prevention. In fire prevention we take the offensive, we attack the enemy on his own grounds and attempt to prevent him from attacking. In a firefighting survey, we assume the worst, that is, despite our best efforts the enemy has been enabled to make an attack and we must now deal with that attack.<sup>1</sup>

Throughout his steadfast fire service career, the "Old Professor" Brannigan preached the doctrine, "The Building is the Enemy, Know the Enemy," on building construction and pre-fire analysis.<sup>2</sup>

Before any standard pre-incident planning format, fire departments/brigades developed their own pre-incident fire plans and kept these paper copies in

#### Francis Brannigan and the "Firefighter Survey"

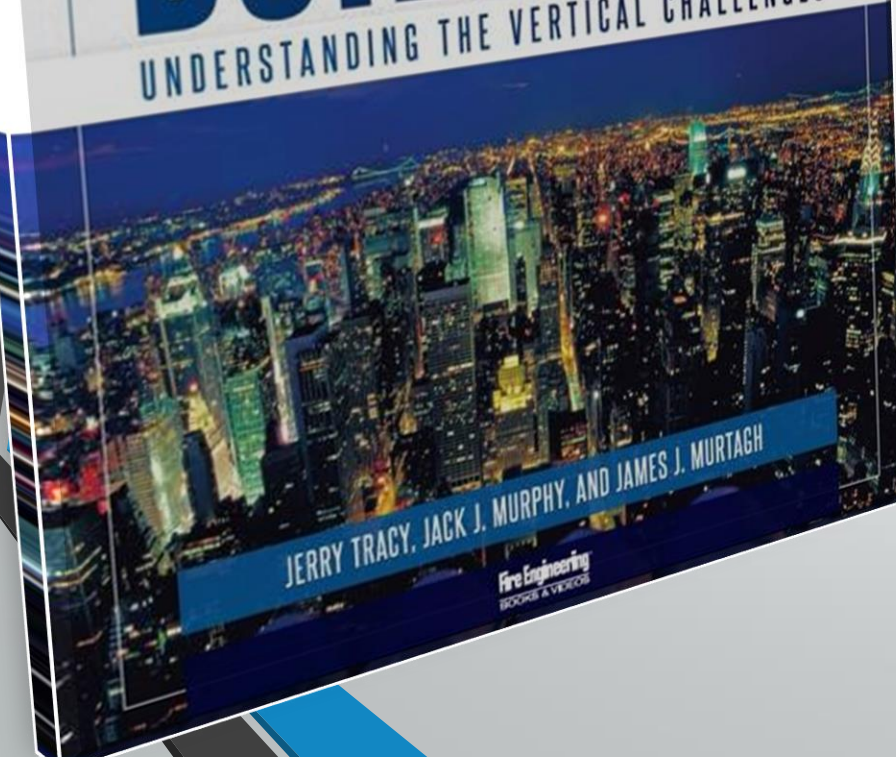
Francis Brannigan's "Firefighter Survey" has evolved over the years with advancements in technology and data sources to include availability of key building information on an electronic building intelligence card (eBIC). (Refer to section 7.6, "Knowledge-Based Firefighter Decision-Making and Analysis," for more information about developing fire-ground battle plans.)

the fire chief's vehicle, on the apparatus dashboard, and/or at the local dispatch center. In 1991, the Leonia (NJ) Fire Department developed *structural pre-plans*, which consisted of a single page of specific information for each building, including the year of the report, the address of the building, the building occupancy and trade name, and construction (height, length, and width). Additional information included the shape of the building on the lot, such as a square or rectangle or a letter of the alphabet (E, L, T, X, etc.). Hazards to firefighters and occupants were also noted, along with key information about fire protection systems (type of suppression systems and control valves, FDCs, and location of fire alarm panel), utility main shutoff valves, and the emergency shutoff switch for the heating system. This simple but effective data collection was well suited for the times. (Refer to appendix 7.11.1 for more information about the Leonia Fire Department structural pre-incident plans.)

A nationwide attempt to organize the pre-fire planning process was developed by the NFPA as a recommended practice after a major fire at a large warehouse in 1987. This guideline (now inactive) was adopted and identified as *NFPA 1420, Recommended Practice for Pre-Incident Planning for Warehouse Occupancies, 1993*.<sup>3</sup> After the attacks on the WTC on September 11, 2001, a strong call arose for development of pre-fire plans as part of national codes and standards.

# HIGH-RISE BUILDINGS

UNDERSTANDING THE VERTICAL CHALLENGES



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Fire Engineering  
BOORKE & VEITCH

## CHAPTER-7 If These Walls Could Talk Section Highlights

Pre-Incident Planning - Development of Codes & Std.

Adopting a '*KbyG*' Mentality

Building Intelligence for Battle Spaces

Knowledge-Based Decision Making & Analysis

Leveraging Electronic Building Intelligence



# Battle Plans

## Plans of Action

A Plan for Expected

Being Prepared for the  
Unexpected!

10-76 Box \_\_\_\_\_ Address \_\_\_\_\_ Access \_\_\_\_\_

Floor \_\_\_\_\_ Fire escape \_\_\_\_\_ Stair \_\_\_\_\_

E \_\_\_\_\_ L \_\_\_\_\_ Height \_\_\_\_\_ Floors \_\_\_\_\_ Feet \_\_\_\_\_

E \_\_\_\_\_ L \_\_\_\_\_ BC \_\_\_\_\_ SQ \_\_\_\_\_ Below grade \_\_\_\_\_

E \_\_\_\_\_ L \_\_\_\_\_ \_\_\_\_\_ Announcements \_\_\_\_\_

E \_\_\_\_\_ L \_\_\_\_\_ BC \_\_\_\_\_ SB \_\_\_\_\_ FSD \_\_\_\_\_

CFR/D \_\_\_\_\_ FAST \_\_\_\_\_ SC \_\_\_\_\_ Engineer \_\_\_\_\_

COMM E \_\_\_\_\_ Highrise E \_\_\_\_\_ BIC/FIC \_\_\_\_\_

LCU E \_\_\_\_\_ \_\_\_\_\_ HVAC \_\_\_\_\_

Searches \_\_\_\_\_ Ext \_\_\_\_\_ ARCS \_\_\_\_\_ Attack Stair \_\_\_\_\_

Status \_\_\_\_\_ Elev banks \_\_\_\_\_ Panel \_\_\_\_\_ Elevator Bank \_\_\_\_\_

Stairs \_\_\_\_\_ Freight \_\_\_\_\_ Sky Lobby \_\_\_\_\_ CAR #S \_\_\_\_\_

Con Ed, Marshal, DOB, DOH, Class B, FP

Fire Sector BC \_\_\_\_\_ Staging BC \_\_\_\_\_

FLs

P	E _____ E _____ L _____
S	E _____ E _____ L _____
	CFR _____ Fast _____

Stair

P	
S	

ARC/BC \_\_\_\_\_ Div \_\_\_\_\_ RS \_\_\_\_\_

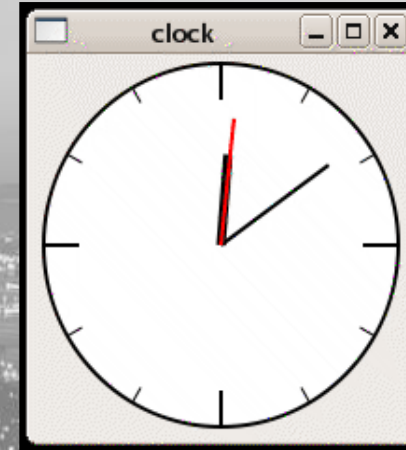
Smoke, CO, Relief



# TALL BUILDING 'BATTLE SPACE' VERTICAL CHALLENGES

- ✓ Building construction being assaulted by fire.
- ✓ Fire Dynamics: **WIND DRIVEN FIRES**
- ✓ Target Buildings: **ALL-HAZARD THREATS**
  
- ✓ FPS Significantly Larger and More Complex
- ✓ Challenged with Limited Personnel
- ✓ Transportation Modes Available
  
- ✓ **BEHIND THE "8" BALL**
  - ✓ **LACKING BUILDING INTELLIGENCE**

## Reflex Time Clock



1. Initial Alarm
2. Arrive @ Building
3. Arrive @ fire floor
4. Begin Evacuation
5. Search & Rescue
6. **Fire Attack**

**BEACH-HEAD  
ATTACK!  
STAIRS**



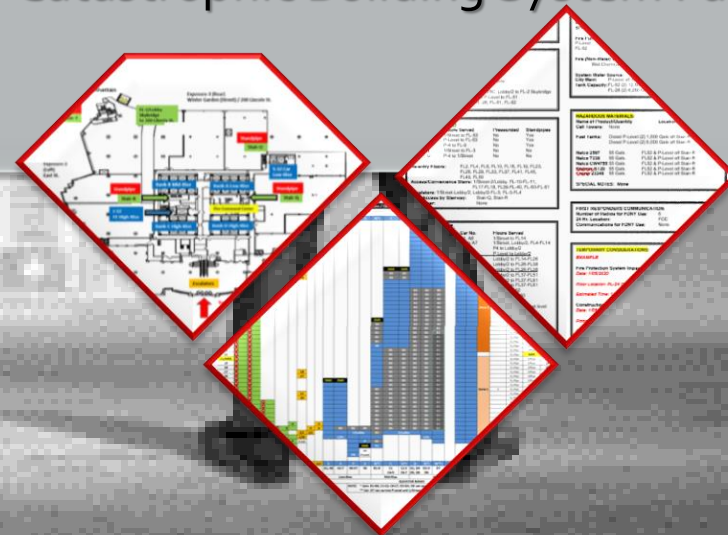
**BATTLE PLAN RECON TO GATHER INTELL**

# FIREFIGHTER RISK REDUCTION = BATTLE-READY INTELLIGENCE



✓ *What ifs, on What You Do Not Know?*

- ✓ Search & Rescue
- ✓ FF Safety Precautions
- ✓ Alternative S&Ts
- ✓ Catastrophic Building System Failures





## IF THESE WALLS COULD TALK

### Quick Action Plan (QAPs) Building Intell Solutions

Three Manageable QAPs levels deliverable at various emergency response phases:

**QAP-1 / Basic Level:** First-due units to initiate operations.

**QAP-2 / Intermediate Level:** Building data to quickly deploy personnel

**QAP-3 / Comprehensive Level:** Detailed building data systems, floor mapping plans, hazmat and temporary considerations (e.g. FPS/OOS)

**QAPs: Mind-joggers for better decisions absorbed in 30 to 60 seconds**

**“KbyG” FIREGROUND SOLUTION**



		INITIAL BUILDING SIZE-UP		
BUILDING	ADDRESS	816 WASHINGTON ST	17 STORIES ABOVE GRADE:	1 STORY BELOW GRADE:
	AKA	Ellson Building	BUSINESS (FL-1 to FL-17)	OCCUPANCY CLASSIFICATION
	CITY	Hoboken	TYPE-1 FIRE RESISTIVE	CONSTRUCTION CLASSIFICATION
			CONSTRUCTION MATERIAL	CONCRETE/STEEL
INFORMATION	SIDE-A	WASHINGTON ST		
	SIDE-B	15-STORY ATTACHED TYPE-1 FIRE-RESISTIVE CONSTRUCTION, BUSINESS OCC		
	SIDE-C	HUDSON STREET		
	SIDE-D	32-STORY ATTACHED TYPE-2 NON-COMBUSTIBLE CONSTRUCTION, RESIDENTIAL OCC		

TEMPORARY	FIRE PROTECTION SYSTEM		CONSTRUCTION PROJECTS	
	FL-15 SPRINKLER SYSTEM OOS		FL-15 MAJOR ALTERATIONS	
CONSIDERATIONS	START TIME	1/6/2023	START TIME	1/6/2023
	ESTIMATED END DATE/TIME	2/27/2023	ESTIMATED END DATE.	7/1/2031

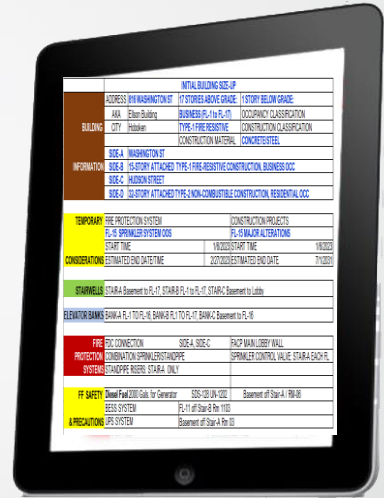
STAIRWELLS	STAIR-A Basement to FL-17, STAIR-B FL-1 to FL-17, STAIR-C Basement to Lobby
------------	---

ELEVATOR BANKS	BANK-A FL-1 TO FL-16, BANK-B FL1 TO FL-17, BANK-C Basement to FL-16
----------------	---

FIRE PROTECTION SYSTEMS	FDC CONNECTION	SIDE-A, SIDE-C	FACP MAIN LOBBY WALL
	COMBINATION SPRINKLER/STANDPIPE		SPRINKLER CONTROL VALVE: STAIR-A EACH FL
	STANDPIPE RISERS: STAIR-A ONLY		

FF SAFETY	Diesel Fuel 2000 Gals. for Generator	SDS-128 UN-1202	Basement off Stair-A / RM-06
& PRECAUTIONS	BESS SYSTEM	FL-11 off Stair-B Rm 1103	
	UPS SYSTEM	Basement off Stair-A Rm 03	

# Response



# Initial Building Intelligence Size-Up



QAP-2A / BLDG. FOOTPRINT MAP

You Are Here



Side-B (Left) Open Courtyard to 75 State St.

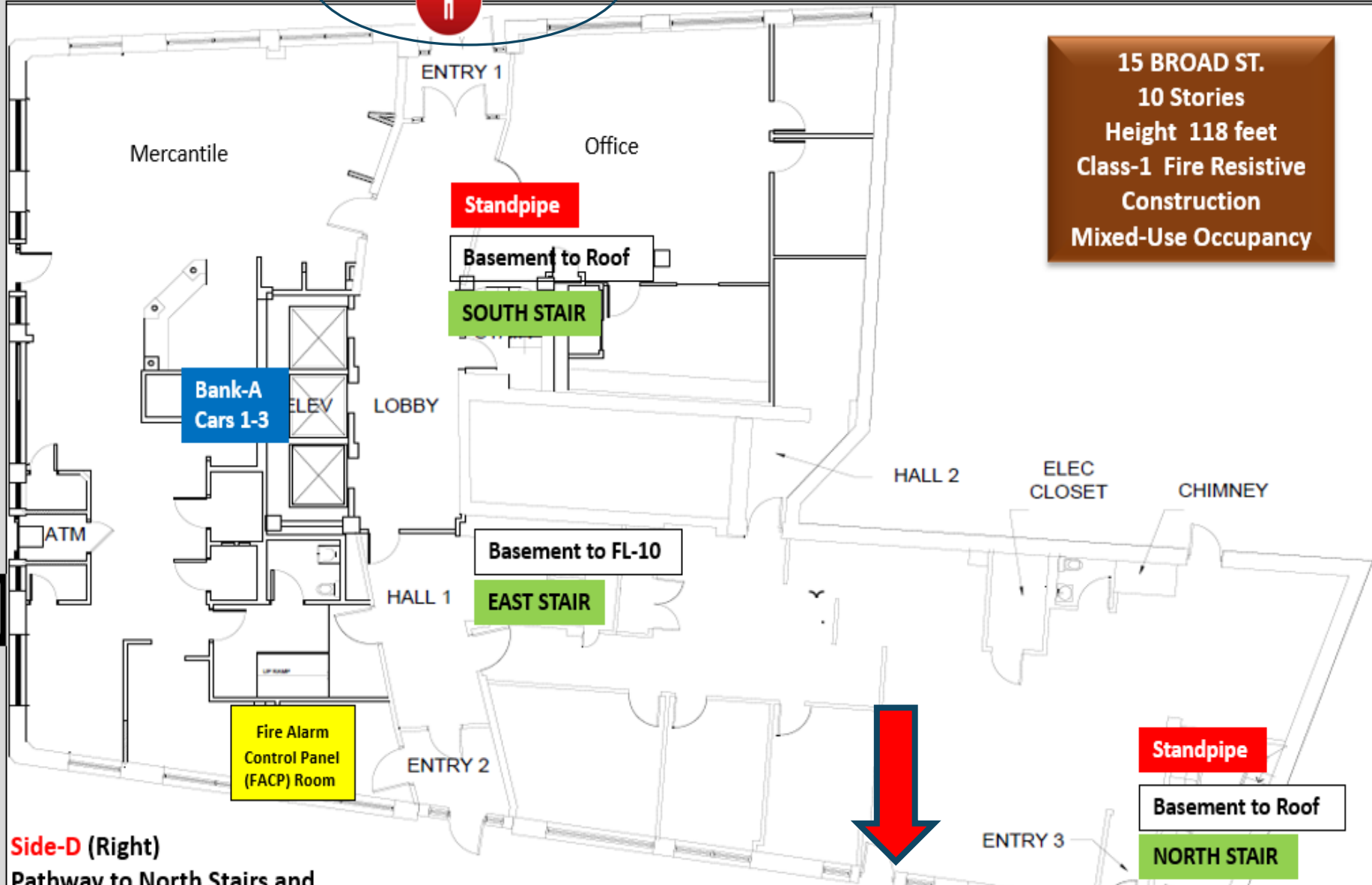


NORTH

15 BROAD ST.  
10 Stories  
Height 118 feet  
Class-1 Fire Resistive  
Construction  
Mixed-Use Occupancy

Side-C (Rear)  
31-Story  
Mixed-Use Occ.  
75 State St.

Side-A (Front)  
15 Broad St.  
Boston



Side-D (Right)  
Pathway to North Stairs and  
Garage Ramp to 75 State St.

NOTE: NORTH STAIR FL-2 TO FL-10 ACCESS INTO TENANT SPACES

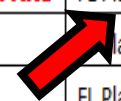


QAP-2B / VERTICAL RISERS

- ✓ Stairwells
  - ✓ Standpipe Risers (SP)
  - ✓ Access Stairs
- ✓ Elevator Banks
- ✓ HVAC Zones
- ✓ FARS SYSTEM
- ✓ Indoor Floor Map

**SAMPLE QAP-2B / VERTICAL RISERS - INTERMEDIATE LEVEL**

Floors	Stairwells			Elevator Banks			HVAC Zones	Occupancy	♿	FARS ST-A	Floors Plans	Floor
	Standpipe	Fire Tower		1	2	3						
	A	B	C									
EMR Rm						EMR						EMR Rm
17/Roof	SP							PA/110			FL Plan	17/Roof
16	SP						4	Office/50			FL Plan	16
15	SP							Office/30	2	FARS	FL Plan	15
14	SP							Office/30			FL Plan	14
13	SP							Office/30			FL Plan	13
12	SP					EMR		Office/30		FARS	FL Plan	12
11	SP							Office/30			FL Plan	11
10	SP						3	Office/30			FL Plan	10
9	SP							Office/30		FARS	FL Plan	9
8	SP					EMR		Office/30			FL Plan	8
7	SP							Office/30	1		FL Plan	7
6	SP							Office/30		FARS	FL Plan	6
5	SP					BS		Office/30			FL Plan	5
4	SP		4			BS		Office/30			FL Plan	4
3	SP		3			BS		Office/20		FARS	FL Plan	3
Mezzanine	SP					BS	2	PA/498			FL Plan	Mezzanine
Lobby	SP		L									FL Plan
Basement	SP		Basement				1	PA/84			FL Plan	Basement
SB/MER	SP											
	A	B	C	1	2	3						
	Standpipe	Fire Tower	AC	LOW	MID	HIGH						
Floors	Stairwells			Elevator Banks			HVAC Zones	Occupancy	♿	FARS ST-A	Floor Plans	Floors





NORTH

**SIDE-C (Steep Cliff Area)**

**THIRD FLOOR**

**SIDE-B (Left)**

**SIDE-D (Right)**

**(37) NORTH TOWER (HARRIS)**

**(38) SOUTH TOWER**

*Attached  
(39) University Center  
2<sup>nd</sup> Level  
Lower Roof Area*

*Skybridge  
FL-3 / FL-4*

FL-GF to Roof

FL-GF to Roof

FL-GF to FL-20

FL-GF to FL-18

B Stair

C Bank

C Stair

B Bank

A Bank

A Stair

D Stair

**SIDE-A (Front/Campus Drive Thru)**

QAP-2B Indoor Floor Mapping



816 WASHINGTON STREET HOBOKEN AKA: ELLSON BUILDING



QAP-3 / Comprehensive Level

2020

**BUILDING INFORMATION**

BIN NO. 106530  
 Address: 816 WASHINGTON STREET  
 Also Known As: Ellson Building  
 Construction Class: Class-1 Fire Resistive  
 Floors:  
 Assembly: Mezzanine (498 Occupancy)  
 Basement (84 Occupancy)  
 FL-17 Patio (110 Occupancy)  
 Business FL-3 to 16  
 Building Population: Day: 835 Night: 10 Weekend: 7

**FIRE PROTECTION SYSTEMS**

Standpipe Isolation Valves: Stair-A  
 FL-16, Sub-Bment  
 Side-A & Side-C  
 FDC Connection: Yes  
 Building Fully Sprinkled: Yes  
 Sprinkler PRV Valves: Each floor off Stair-A  
 Fire Pump: 750 GPM Sub-Bment off Stair-A  
 Fire Extinguishing System: None  
 Water Supply Source: City Main on Side-A  
 Sub-Bment off Stair-A

**TEMPORARY CONSIDERATIONS**

*SAMPLE*

**FIRE PROTECTION SYSTEMS:**

Date / Location / Temporary Consideration

*1/06 to FL-15 Sprinkler System OOS*  
*01/30/2020*

**CONSTRUCTION PROJECTS:**

*1/06 to FL-15 Full Floor Alteration Project*  
*07/01/2020*

*OOS = OUT-OF-SERVICE*

**VENTILATION SYSTEMS**

HVAC Floor Zones (3) 20 Ton Units / Roof Level  
 Building Management System: Yes/Bment Engr. Office  
 Off-Site Emergency Number: 212-947-4245  
 Smoke Management System: Yes @ FCC  
 MER Rooms: Sub-Bment, Basement, FL-11, Roof

**UTILITIES MAIN SHUTOFF CONTROLS**

ELECTRIC: Roof MER Rm. & Sub-Bment/Rm. 003  
 Natural Gas: None  
 Steam: None  
 Water: Sub-Basement off Stair-A  
 Alternative Power Sources:  
 Emergency Generator: Sub-Basement Rm. 03

*OOS = OUT-OF-SERVICE*

**BUILDING EMERGENCY CONTACT INFORMATION**

Fire/Life Safety Director:  
 Jerry Crowell  
 Work: 201-746-1929  
 Emergency: 201-333-4444  
 Building Engineer:  
 Eli Versaco  
 Work: 201-777-2222  
 Emergency: 201-111-8888  
 Managing Agent:  
 Steve Auch  
 Work: 201-427-2224  
 Emergency: 201-888-1111

Lobby Phone: 4-2224

# eBldg. Intell. Solutions

- ✓ Building Information
- ✓ Building Statistics
- ✓ Stairways
- ✓ Elevator Banks
- ✓ Ventilation Systems
- ✓ Utility Main Shut-off Controls
- ✓ Fire Protection Systems
- ✓ Hazardous Materials
- ✓ Temporary Considerations
- ✓ First Responders Communications
- ✓ Emergency Contacts

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# IF THESE WALLS COULD TALK



## Municipal Wide Tracking / My Buildings

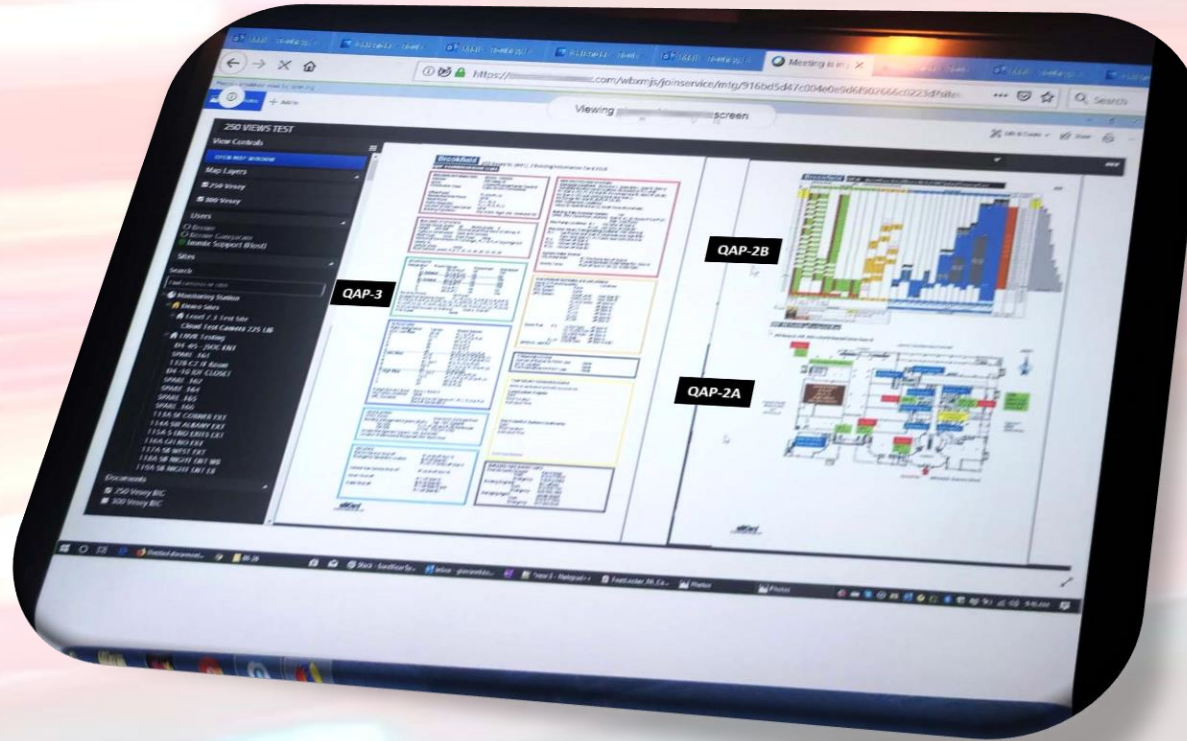
Building	Information	Statistics	Floors	Stairs	Elevators	HVAC	Utilities	Hazmat	FPS	FD Comms	Contacts	Footprint Map	Action
Building Address .....	●	●	●	●	●	●	●	●	●	●	●	●	  
Building Address .....	●	●	●	●	●	●	●	●	●	●	●	●	  
Building Address .....	●	●	●	●	●	●	●	●	●	●	●	●	  
Building Address .....	●	●	●	●	●	●	●	●	●	●	●	●	  
Building Address .....	●	●	●	●	●	●	●	●	●	●	●	●	  

**Supports Battle Ready Intelligence**





# Last Tactical Mile for Building Intelligence



Intelligence - Available - Revealed - Passed On



[fmjack1948@gmail.com](mailto:fmjack1948@gmail.com)  
**QUESTION & ANSWER PERIOD**



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***THANK YOU!***