

# Toronto's HighRise Response Unit





Brent Brooks is currently an acting Captain with Toronto Fire Services. His 25 year career with firefighting started at Pearson Airport, with continuing duties at (De Havilland) and Bombardier Aero Space Crash Fire Rescue teams. He is assigned to Toronto's High Rise Unit and CBRNE team. Brent has developed the IMS, training and RND for High Rise Operations. Brent's experience includes serving on numerous committees all related to High Rise Firefighting. He continues to travel North America attending conferences, symposiums, and hands on training pertaining to High Rise Firefighting. He has spoken on complex building systems and attends the Council of tall buildings when it is in Toronto. Brent shares information with Fire Departments from all over the world and has developed a network with firefighters related to High Rise Firefighting.

83 Stations 3175 Members 2,638 HighRise Buildings

10 Proposed buildings between 80 and 100 Stories



# Types of HighRise Buildings



**Residential:** Apartments, Condos, Air B&B Hotels

**Assembly:** Restaurants, Bars, Spas within the HighRise building

**Institutional:** Hospitals, Nursing Homes, Detention Centre, Courts

**Commercial:** Offices, Medical Clinics, Financial

**Mixed Use:** Any of these combination

# HighRise Thesaurus

Wide Rise

Vertical Village

Horizontal HighRise

HighRise on it's side

Ground Scrapers

Standpipe equipped building

Ply Rise

# Reflex Time



How long  
does it  
take to  
get to the  
fire  
floor?

FIRE STATION DISPATCH REPORT

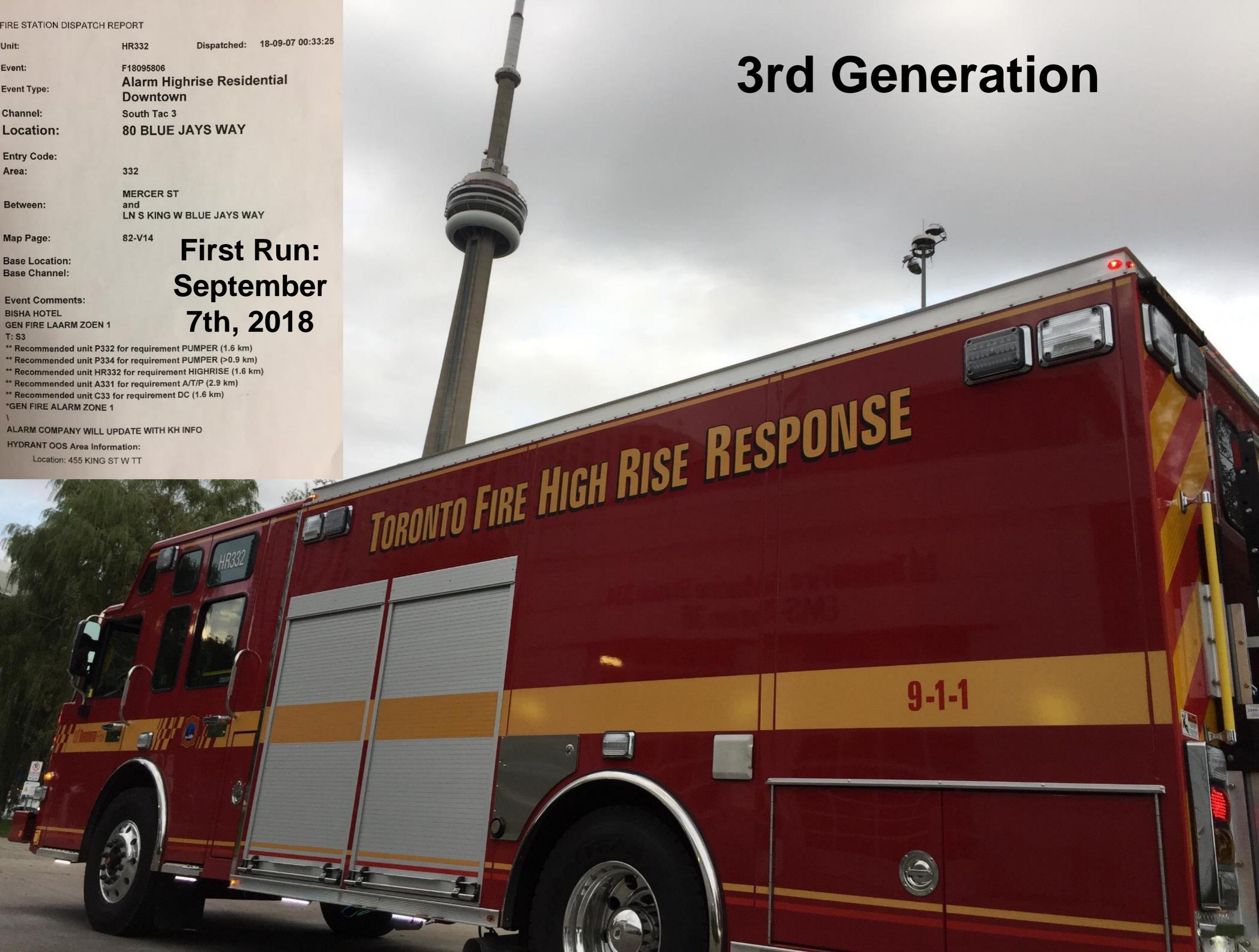
Unit: HR332 Dispatched: 18-09-07 00:33:25  
Event: F18095806  
Event Type: Alarm Highrise Residential Downtown  
Channel: South Tac 3  
Location: 80 BLUE JAYS WAY  
Entry Code:  
Area: 332  
Between: MERCER ST and LN S KING W BLUE JAYS WAY  
Map Page: 82-V14

**First Run:  
September  
7th, 2018**

Event Comments:  
BISHA HOTEL  
GEN FIRE LAARM ZOEN 1  
T: S3  
\*\* Recommended unit P332 for requirement PUMPER (1.6 km)  
\*\* Recommended unit P334 for requirement PUMPER (>0.9 km)  
\*\* Recommended unit HR332 for requirement HIGHRISE (1.6 km)  
\*\* Recommended unit A331 for requirement A/T/P (2.9 km)  
\*\* Recommended unit C33 for requirement DC (1.6 km)  
\*GEN FIRE ALARM ZONE 1

ALARM COMPANY WILL UPDATE WITH KH INFO  
HYDRANT OOS Area Information:  
Location: 455 KING ST W TT

# 3rd Generation



**First HighRise  
Unit in Toronto  
March 31st,  
1988**

NOTICE

TO ALL PERSONNEL  
FROM Fire Chief Walter Shanahan  
DATE 1988 March 31st  
SUBJECT HIGH RISE UNIT No. 1



On 1988 April 1st, at 0800 hours, High Rise Unit No. 1 will be placed in service, responding from Fire Station No. 1.

At this time, Pumper 19 personnel will transfer to the new unit and Pumper 19 will be removed from service.

By Order,

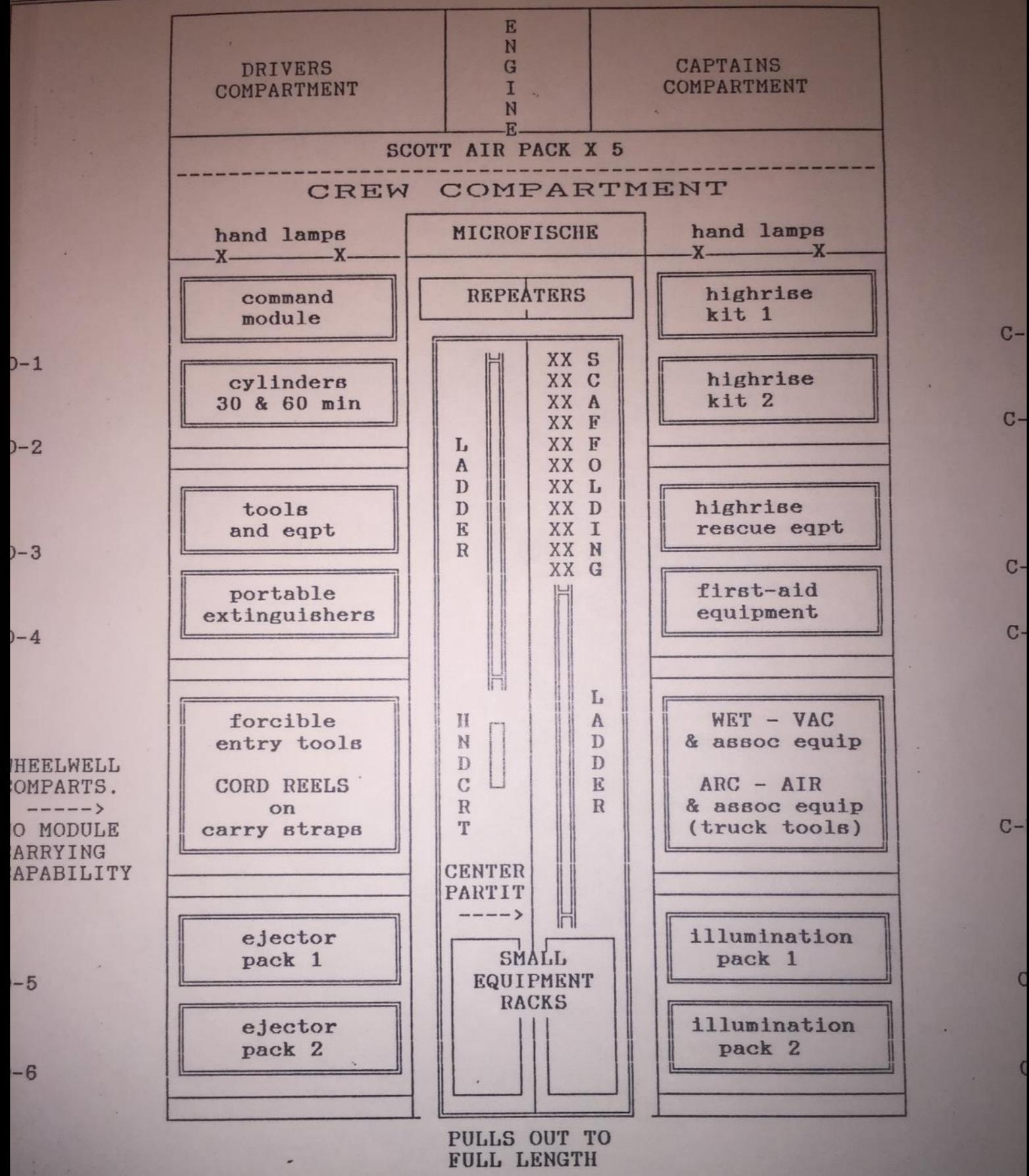
*Walter J. Shanahan*  
Walter J. Shanahan  
Fire Chief

JFU/mm

# Toronto's First HighRise Unit



# Compartment and Truck Layout



\* SOME EQUIPMENT RELATED TO THAT CARRIED IN THE MODULES WILL BE STORED ON THE SHELVES ABOVE THE MODULES IN EACH COMPARTMENT.  
 \* VEHICLE DEVOTED EQUIPMENT (jack, wheel chocks, etc.) STORED IN C-WW.

# Third Generation

# Second Generation



# **12 Problem Areas in HighRise Firefighting**

- 1. Reaction Time/Reflex Time**
- 2. Objects Falling From Heights**
- 3. Communications**
- 4. Premises Security**
- 5. Complexity Of Internal Layout**
- 6. Water Supplies**
- 7. Physiological Demands And Physical Workload**
- 8. Failure of Electrical Systems**
- 9. Casualty Retrieval**
- 10. Fire And Smoke Spread**
- 11. Effects of Wind**
- 12. Catastrophic Building System Failures**

**If we solve the above problems, we will be successful**

# 1. Reaction Time/Reflex Time

The amount of time it takes to get from the truck to the fire location

**Deployment Models:**

**Drop Points:**

When dispatched to a fire, the HighRise Unit will respond similar to the way our RIT teams are dispatched.

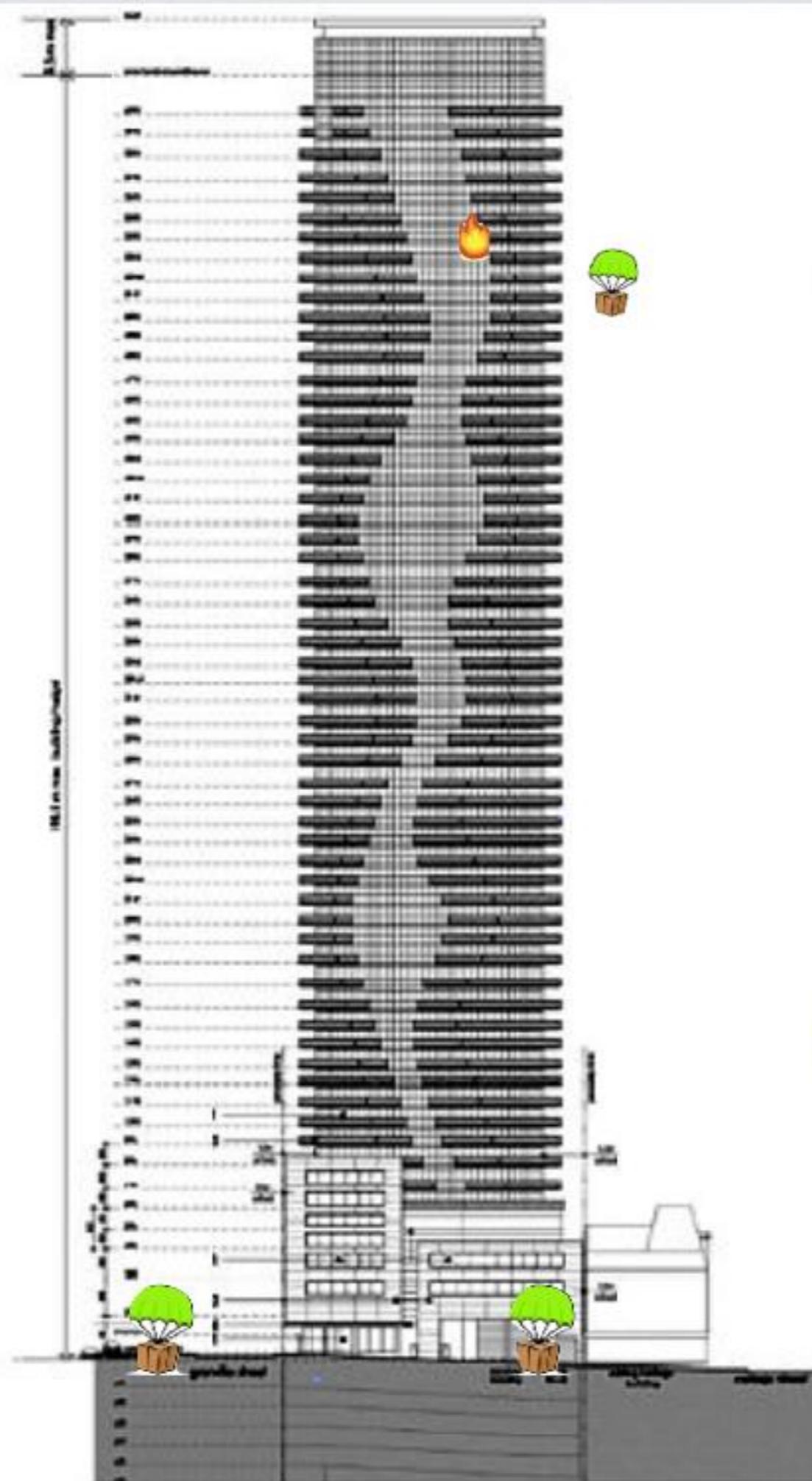
They go directly to the dispatch channel not a strategic channel. They bypass base sector and park nearest the entrance of operations. Sometimes this may be a loading dock. The Captain of the HighRise Unit may ask for a logistic crew to assist. The HighRise crew and logistic crew will then set up drop points for equipment. The final drop point will be the staging area.

**Firefighters use tools in the drop points to eliminate reflex time. Tasks are completed faster**

### Equipment for Lobby

Communication module #1  
Forcible entry module #1  
30" Large PPV fans,  
Powered Mega Phones,  
lighting lobby kit with  
caution tape rope bag, and  
small generator.

Dollies are available on the truck if additional equipment is called for, or long equipment shuttle is needed.



### Equipment for Staging

- \*Forcible entry (doors, walls, floor, ceiling, and stairwells)
- \*PPV fans/ejectors
- \*Floor below nozzle and special tools
- \*Evacuation chairs
  - \*CAFS system
  - \*Air bottles
- \*Communication Modules #2
- \*Battery powered lights
  - \*Hose packs
- \* Smoke control blanks
- \* Powered Mega Phone and rope kit

# Equipment Requirements

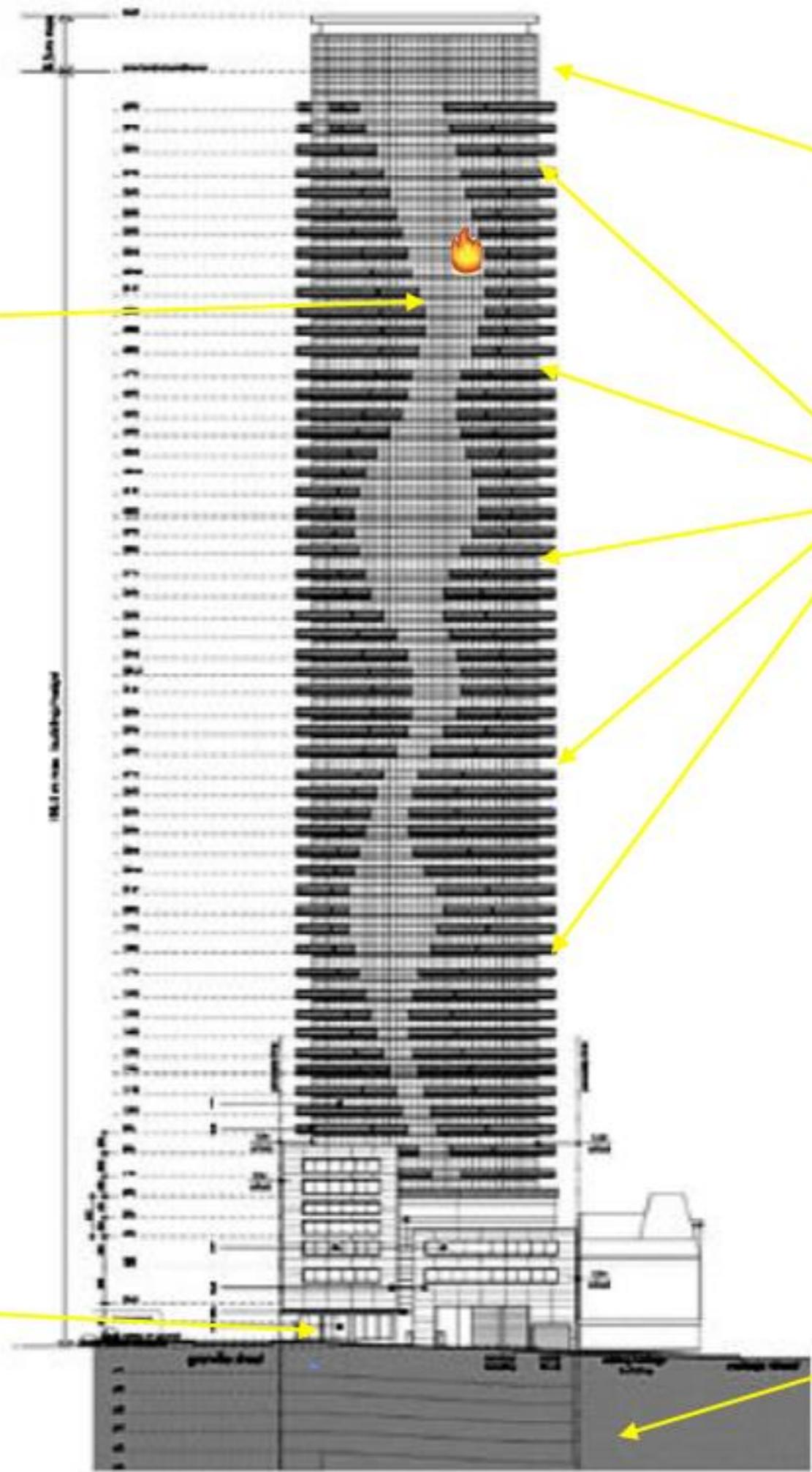
**Staging**

**Equipment Drop Point**

\*Pedestrian and Firefighter protection from falling debris

**Lobby**

**Equipment Drop Point**



**Above Fire  
Mechanical  
Elevator  
Rooms**

**Mixed use  
High  
Security  
from  
Residential  
to  
Commercial**

**Locked stairwells**

**Below Grade**

**Pump  
Electrical  
Rooms**

## 2. Objects Falling From Heights



2 - 100' sections of rolling fence

# 3. Communications

2 portable truck radios



# HighRise Operations



# Subway Tunnel Operations





**Multiple security arrangements along the route to a fire will slow progress.**

**Before**



**1 York while under construction**

**After**

**This will be carpeted**



**Mechanical all hidden under concrete panels**

**Above grade**

**Simcoe St**



**Underground elevator parking**

**Below grade**

**King St**



**No ramps**

**Recessed metal, outward swinging doors**

**Adelaide St**



**Can not be opened with hand tools**

**Only access to buildings stairwells**

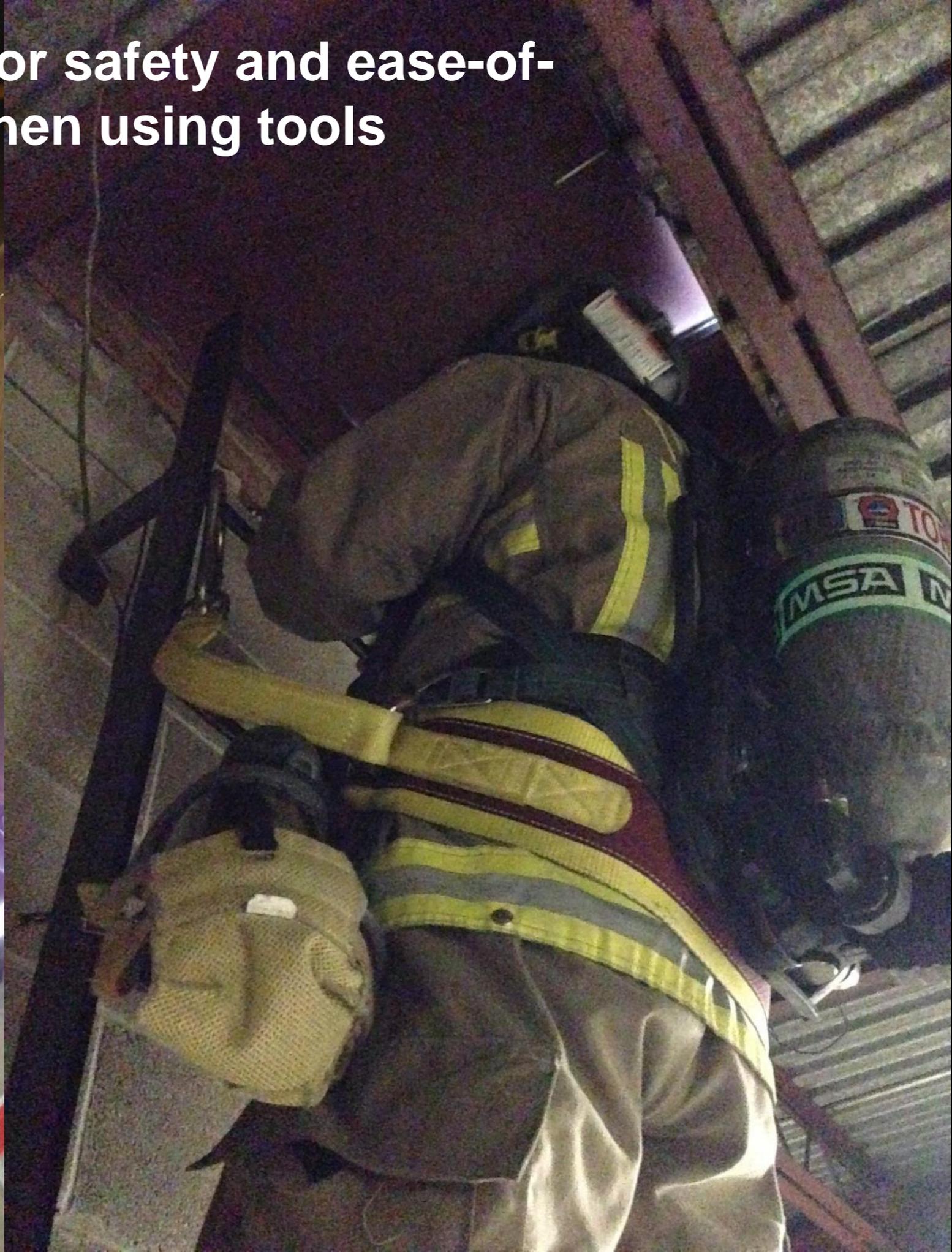


**Richmond St**

**Underground**

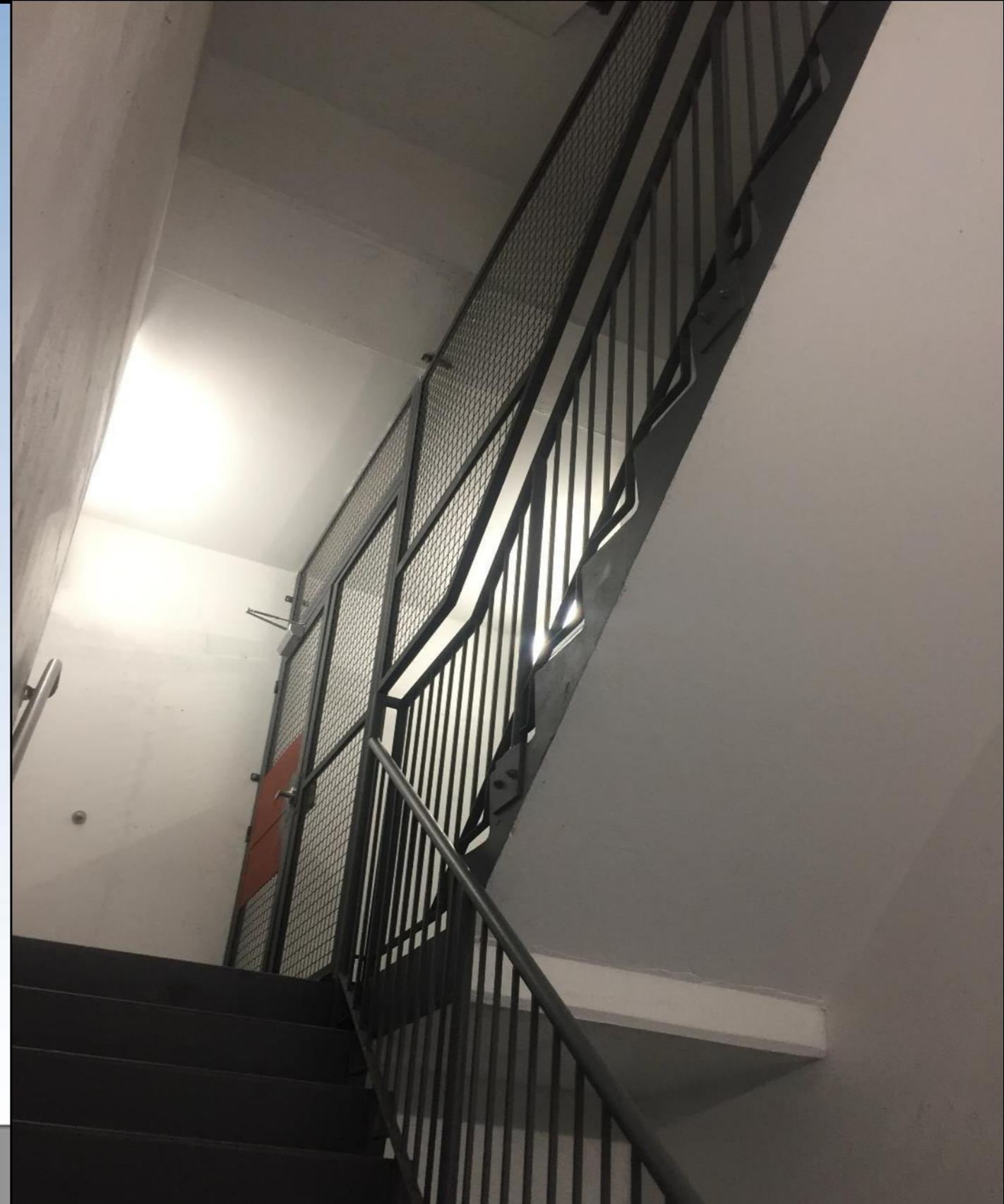
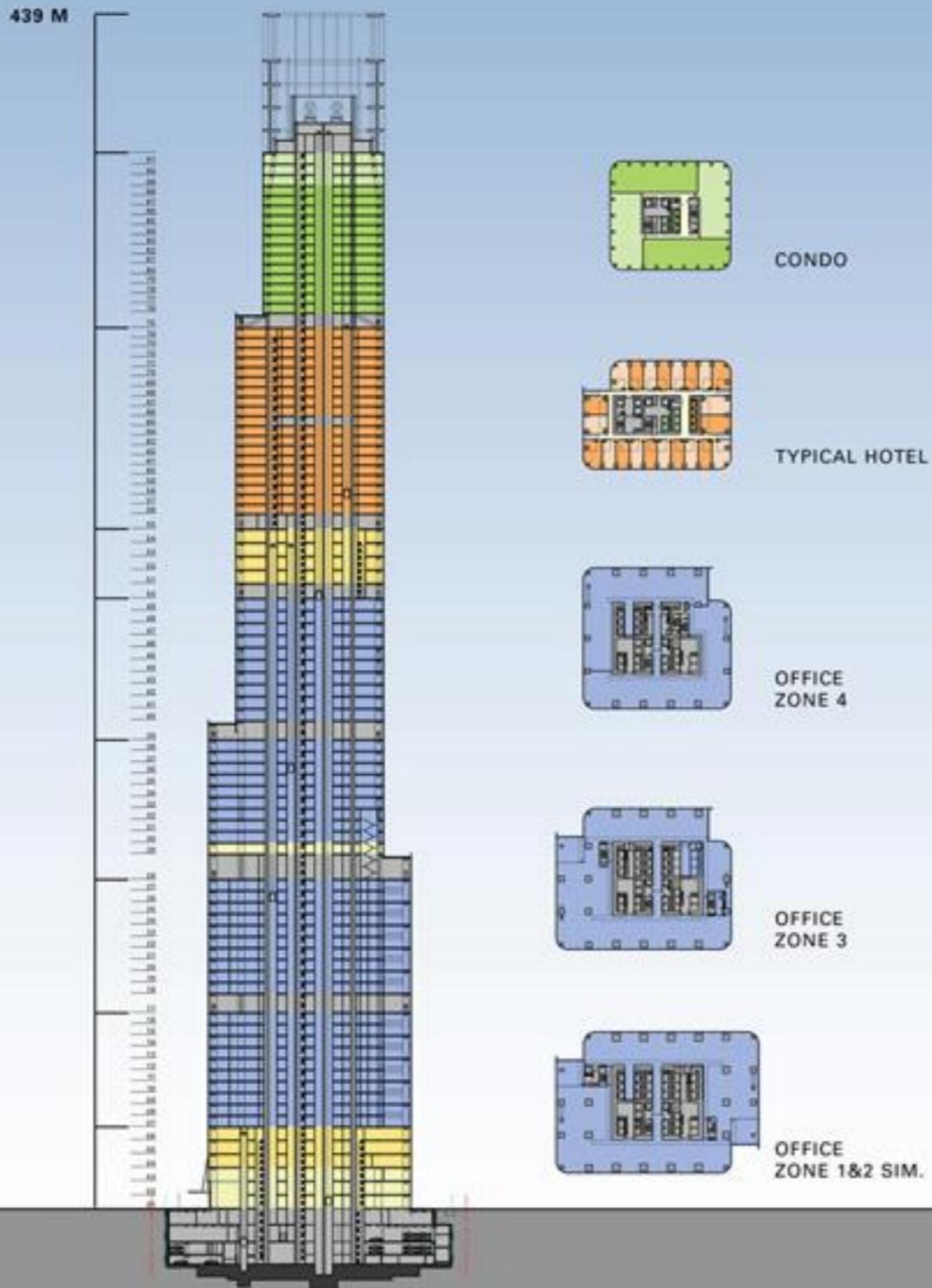


**Aerial belts for safety and ease-of-use when using tools**



# 5. Complexity of Internal Layout

Floor plate and occupancy changes



## 2. Search rope kits with glow sticks and door straps



## 6. Water Supplies

200' of 65mm hose  
with 1 1/8th smooth bore  
tip (1000 LPM)

Standpipe Kit

Blitz Fire portable monitor.  
(2000 LPM)

Tactics Kit

Floor below nozzle

Wall, ceiling, floor nozzles

Wind driven water

Exterior cladding fires



## 7. Physiological Demands And Physical Workloads

**Battery Powered  
Stair Climber can  
move 350 Lbs**

**Subway Cart**

**Fan Cart**

**Multi Positions Dolly**



# 4 - 1 hour Bottles

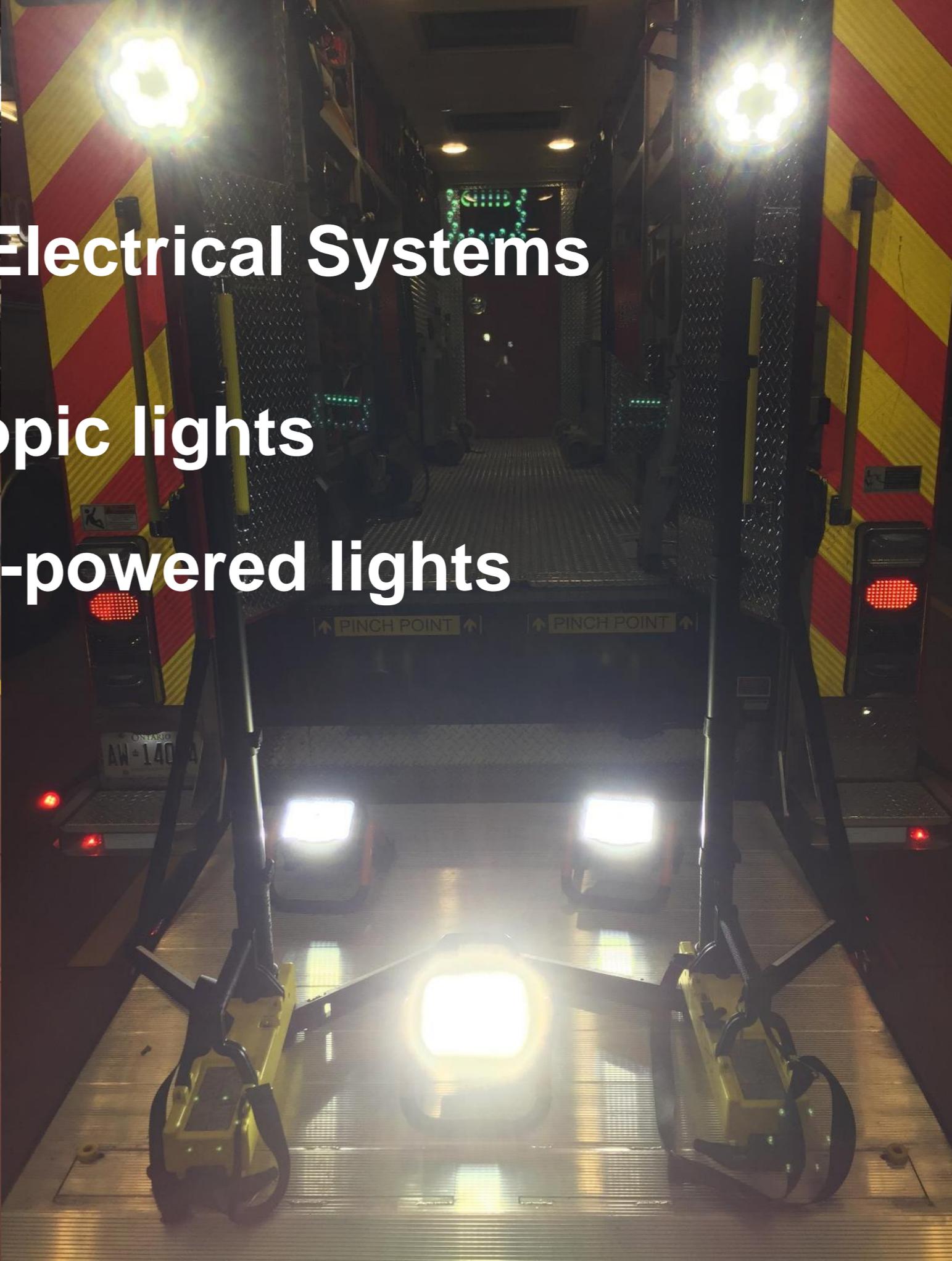
**Speeds up  
Reaction Time/Reflex Time  
to our subway systems**



# 8. Failure of Electrical Systems

2 Telescopic lights

3 Portable high-powered lights





# 9. Casualty Retrieval

4 Skeds

3 Stair chairs

1 Battery Powered  
Stairclimber for 500 Lbs  
(Below Grade RIT Team use)

1 Stokes Basket



# 10. Fire And Smoke Spread

## 10 Fans Total:

- 2 Battery Powered PPV Fans
- 2 Battery Powered Ventilators
- 2 Electric PPV Fans
- 2 - 30" Gas Powered PPV Fans
- 2 HAZMAT Ejectors
- 2 - 25' HAZMAT Spiral Ducting
- 1 - 25' Spiral Ducting
- 2 Spoke Blockade Door Curtains











**Spiral ducting can move smoke from a dirty environment through a clean environment to the outside**

**Spiral ducting can also move smoke on a wind impacted apartment**



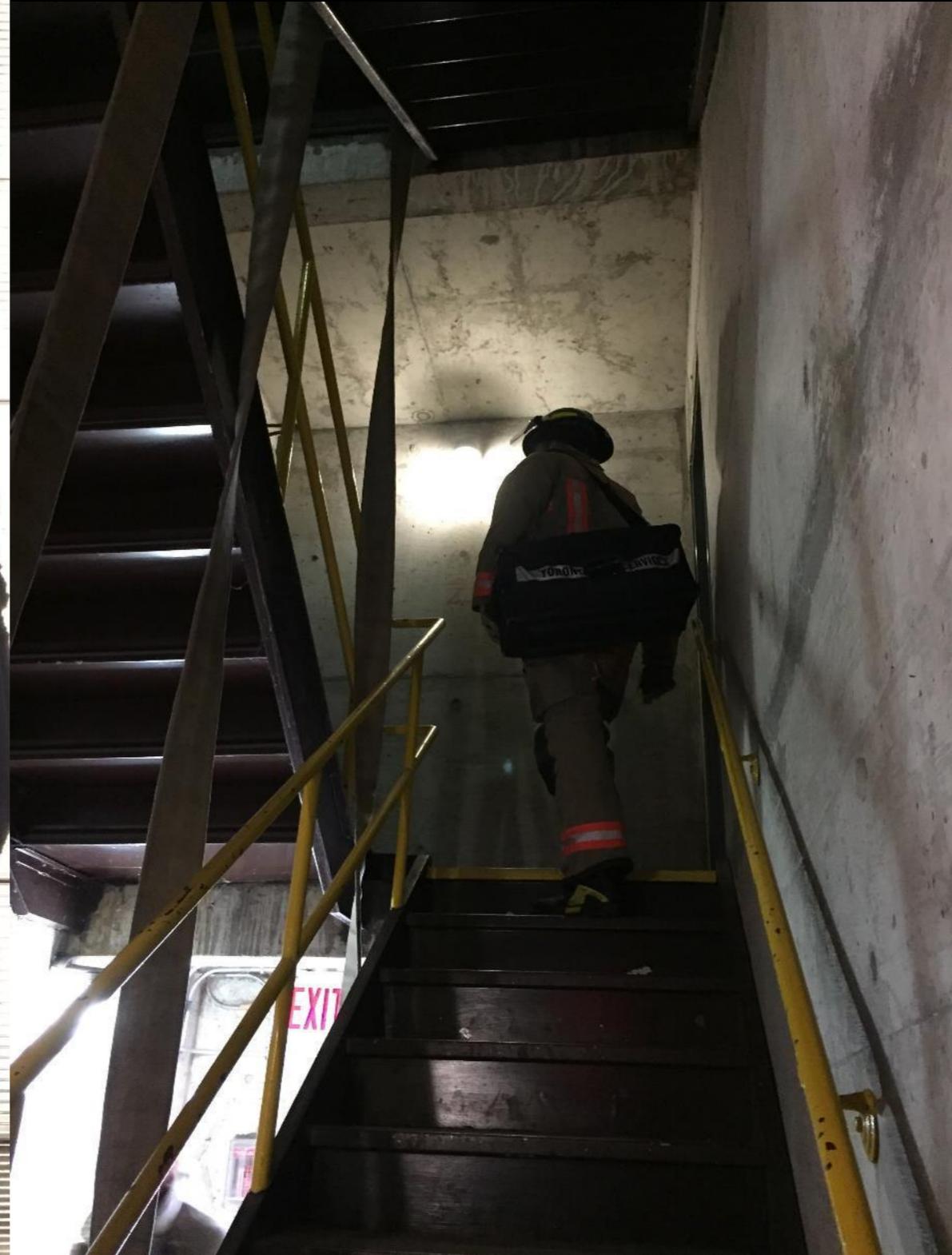




# Tactics Kit



# 11. Effects of Wind

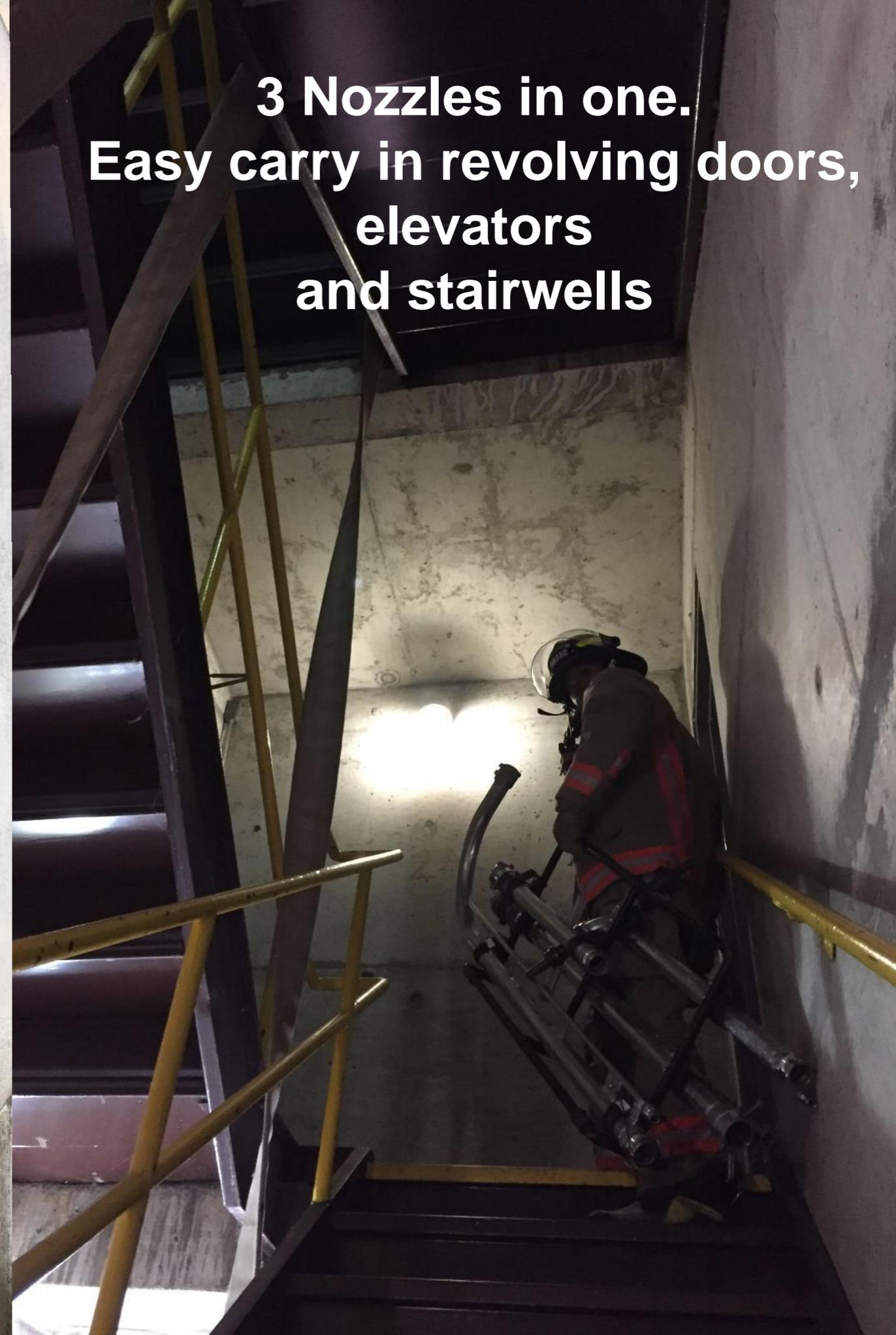


# Exterior Cladding Fires and Wind Driven Water.









**3 Nozzles in one.  
Easy carry in revolving doors,  
elevators  
and stairwells**

**Floor below  
nozzle used for  
wind driven fires**



**38mm and 65mm  
Bresnan  
nozzle used for  
wall, ceiling and  
floor breaching**



**Two opposing water streams with  
1/2" tips**

**Can cut through cellulose and  
pink insulation**

**Excellent for balloon frame  
construction and roof fires**

**Has 160' reach of stream 80' off to  
each side**





# 12. Catastrophic Building System Failures

4 vapour extinguishers for:  
Basements, Hydro Vaults,  
Apartment suites



Portable compressed air foam system





# Options Kit



Rope and Webbing  
for Stairwell and Exterior  
Hose Stretches

# Water management

Trash pump

Sprinkler shut off tools

Sprinkler vise grip

3mm Submersible pump



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