

# Fire Protection Plans & Roof Access Plans

CIP Projects

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# Part I

## Fire Protection Plans

# WHY IMPORTANT NOW?

- Turn Overs
- Close Outs

# Basis of Presentation

- **NYC Building Code**
- **NYC Fire Code and Subsequent Bulletins**
- **Meetings with BCC (Sample)**

# NYC General Administrative Construction Code Article 109

- ✓ **§ 28-109.1 Fire protection plan required for covered buildings.**
- ✓ **§ 28-109.2 Covered buildings**
- ✓ **§ 28-109.3 Scope**

# Article 109 of the NYC Building Code contd.

## “ § 28-109.1 Fire protection plan required for covered buildings:

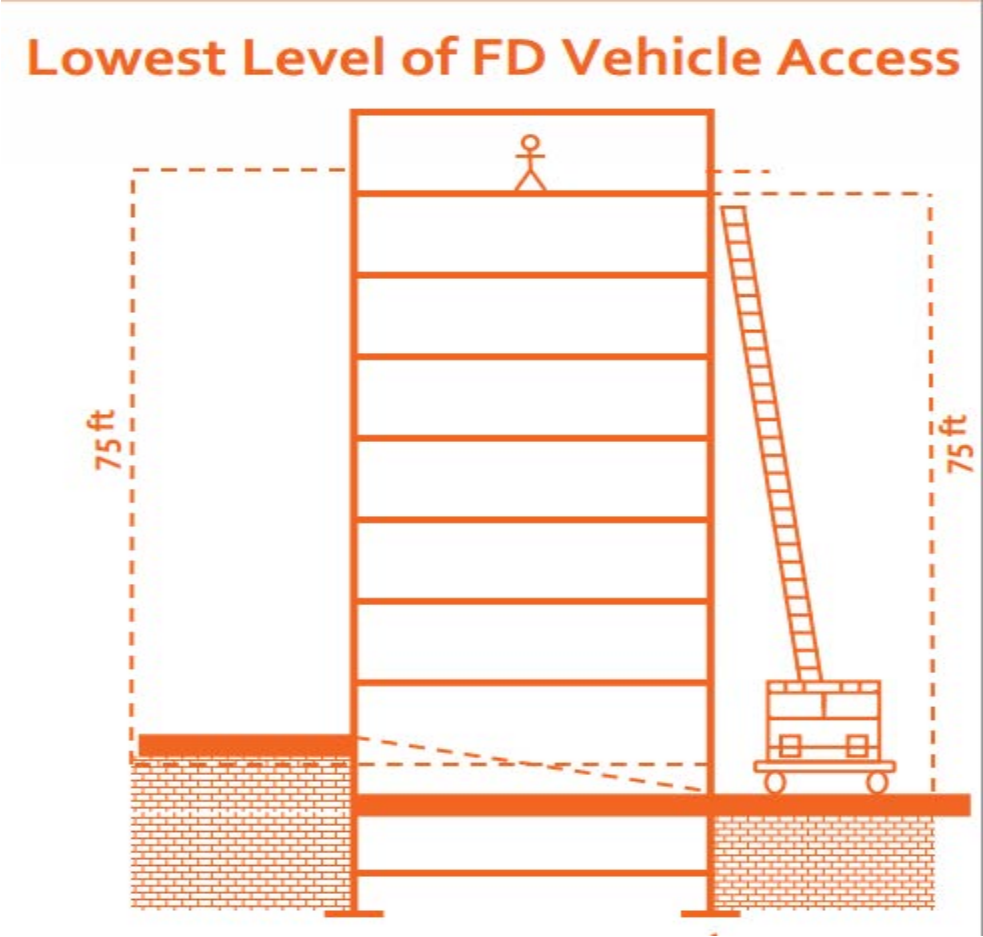
- ✓ New building and alteration applications for covered buildings as set forth in section 28-109.2 shall include a fire protection plan prepared by or under the supervision of a registered design professional who shall professionally certify such plan.
- ✓ Such plan shall be approved by *the department* and the *fire department* prior to issuance of a certificate of occupancy, a temporary certificate of occupancy or a **letter of completion**, as applicable.”

# Article 109 of the NYC Building Code contd.

## **28-109.2 Covered buildings** -- Covered buildings include:

- ✓ High-rise buildings as described in section 403 of the New York city building code.  
*“A building with an occupied floor located more than 75’ above the lowest level of fire department vehicle access”*
- ✓ Occupancy groups **B**, **E**, **F**, **H**, **M**, or **S** occupying two or more stories with over 20,000 gross square feet (1858 m<sup>2</sup>) of floor area per floor, or occupying two or more stories in a building with a total floor area exceeding 50,000 gross square feet (4645 m<sup>2</sup>)
- ✓ Any building containing an assembly occupancy having an occupant load of 300 or more persons.
- ✓ Occupancy group **I** or **R-1** occupying two or more stories and containing sleeping accommodations for 30 or more persons.
- ✓ ...

# High Rise Buildings



# Exceptions

**No fire protection plan shall be required for an alteration that meets all three of the following requirements:**

- ✓ The alteration does not involve a change of use or occupancy;
- ✓ The alteration does not exceed one million dollars; and
- ✓ The alteration does not create an inconsistency with a previously approved fire protection plan.

# The Format

Title	Number
Cover sheet	FP00
Description/Narrative Sheet (building information and MEP narratives)	FP01
Site Plan	FP02
Basement/Cellar Plan	FP03
First Floor Plan	FP04
...	
Roof Access Plan	FP0?

# Article 109 of the NYC Building Code Contd.

**§ 28-109.3 Scope.** The plan shall include the following information, where applicable

1. Description of the building
2. Site, Floor and Roof Plans
3. In narrative form, a description of safety systems and features

# 1. Description of the Building

A description of the building shall include (FP01):

- address;
- block and lot numbers;
- number of stories; n stories
- height in feet; h Feet
- occupancy group; E
- construction classification; Type I, Type II...
- occupancy load of each floor List per C of O or calculate (area)

# 1. Description of the Building Contd.

- Date when the building was built
- department of buildings application number (C of O #);
  - If exists, a copy shall be submitted with the plans
  - If built prior to January 1, 1938; a note in accordance with section 28-118.3.4 of the NYC Building Code shall be provided on the plans
  - If the building was constructed after 1938 and does not have a C.O., a recon (CCD1) shall be requested from BCC

## 2. Site, Floor and Roof Plans

- Site Plan (FP03)
  - Must identify **Frontage**
- All floors (FP04,FP05...),
  - exits,
  - doors,
  - corridors,
  - partitions serving as fire barriers, *(A fire barrier must have minimum of 1 hour rating, but may extend to a four hour rating depending on the occupancy type (for type E, it is 2 hours). Used for separation of shafts, exits, exit passageways...)*
  - fire partitions, *(A wall with 1 hour rating.)*
  - fire walls; *(A fire resistance rated smoke-tight wall having protected openings, which restricts the spread of fire and extends continuously from the foundation to or through the roof, with sufficient structural stability under fire conditions to allow collapse of construction on either side without collapse of the wall)*

# Walls & Partitions Legend

**If fire rating is not known, only wall thicknesses/material shall be listed.**

BUILDING PREDATES 1968. WALLS ARE NOT RATED EXCEPT STAIR ENCLOSURES RATED 1 1/2 HR PER DOCUMENTS

## LEGEND



6½" MASONRY PARTITION.  
(1 1/2 HR. FIRE RATED)



4" MASONRY PARTITION.



6½" MASONRY PARTITION.

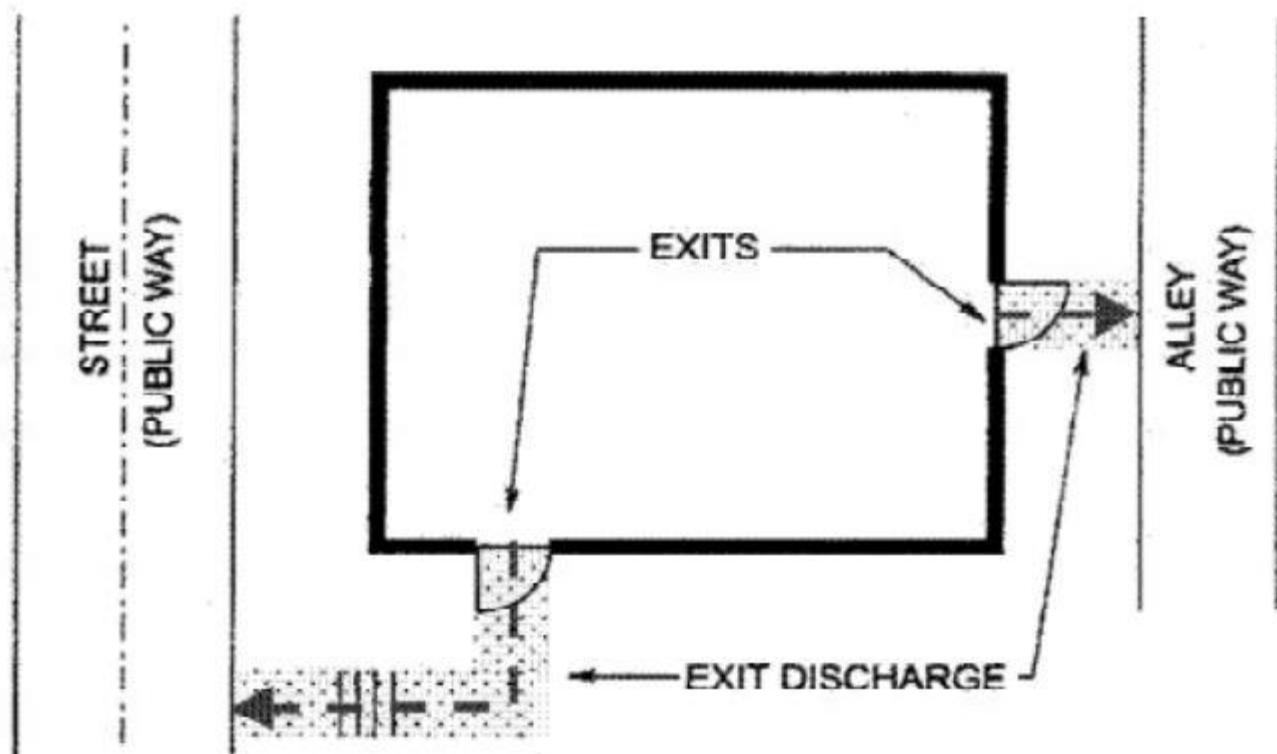


8" MASONRY PARTITION.

## 2. Site, Floor and Roof Plans Contd.

- locations and ratings of required enclosures and fire areas;
- stairs with pressurization *(A pressurization system is intended to prevent smoke leaking passed closed doors into stairs by injecting clean air into the stair enclosure such that the pressure in the stair is greater than the adjacent fire compartment);*
- exit discharges; *(portion of the means of egress between the building exit and a public way such as a street, alley, parking lot or similar open area.)*
- locations of any required **frontage space** *(there is a slight difference between Building Code and Fire Code);*

# Exit Discharge

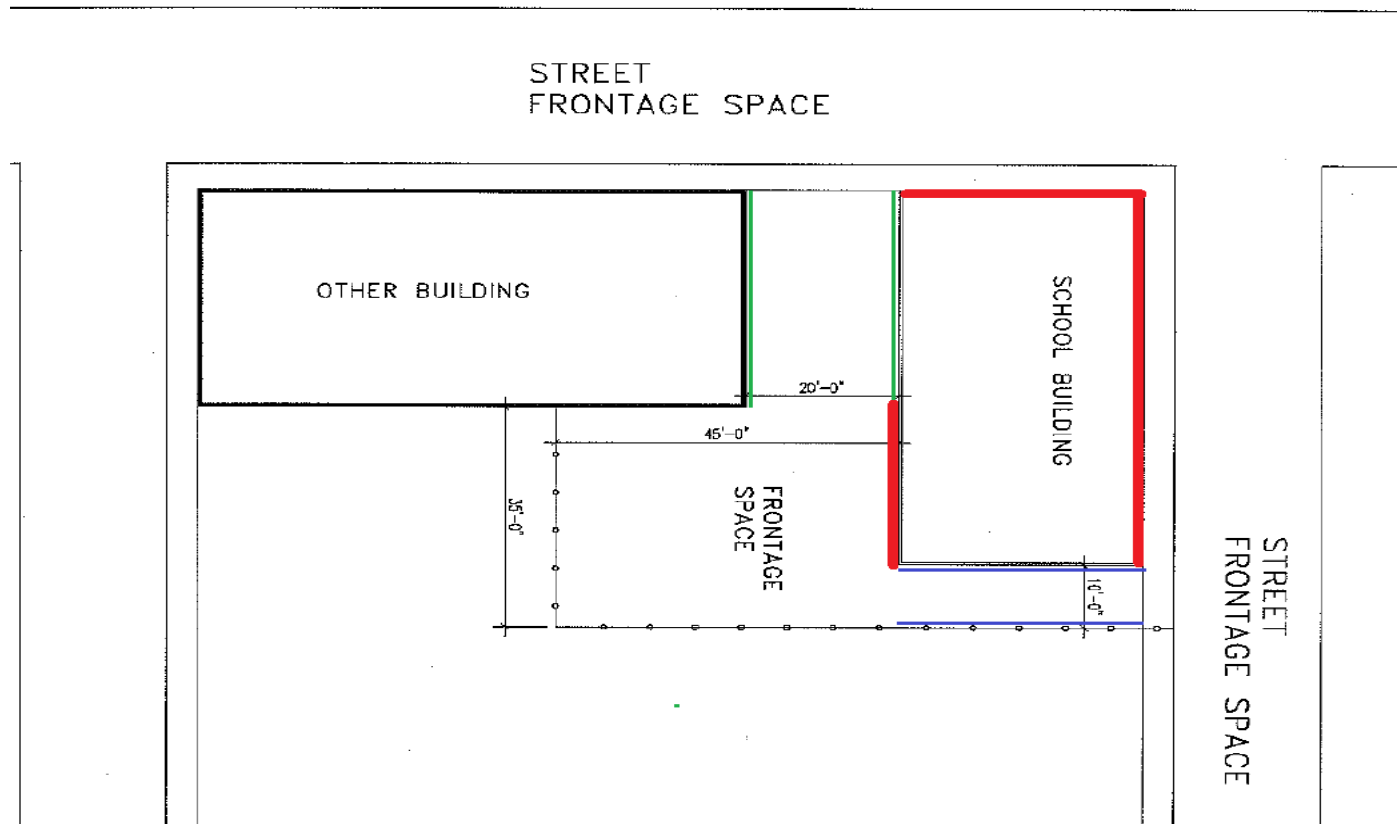


## 2. Site, Floor and Roof Plans Contd.

- Roof Plan (FP0?)
  - Requires roof access
    - Provide Roof Access Plan ( will be discussed in the second part of this presentation);
  - Does not require roof access-
    - Provide a note stating that: there are no addition/alterations to the roof

# Frontage Space(Bldg. Code)

“A street, or an open space adjoining a building not less than 30 feet in any dimension. Such open space shall be accessible from a street by a driveway, lane, private road or alley at least 20 feet in width.”

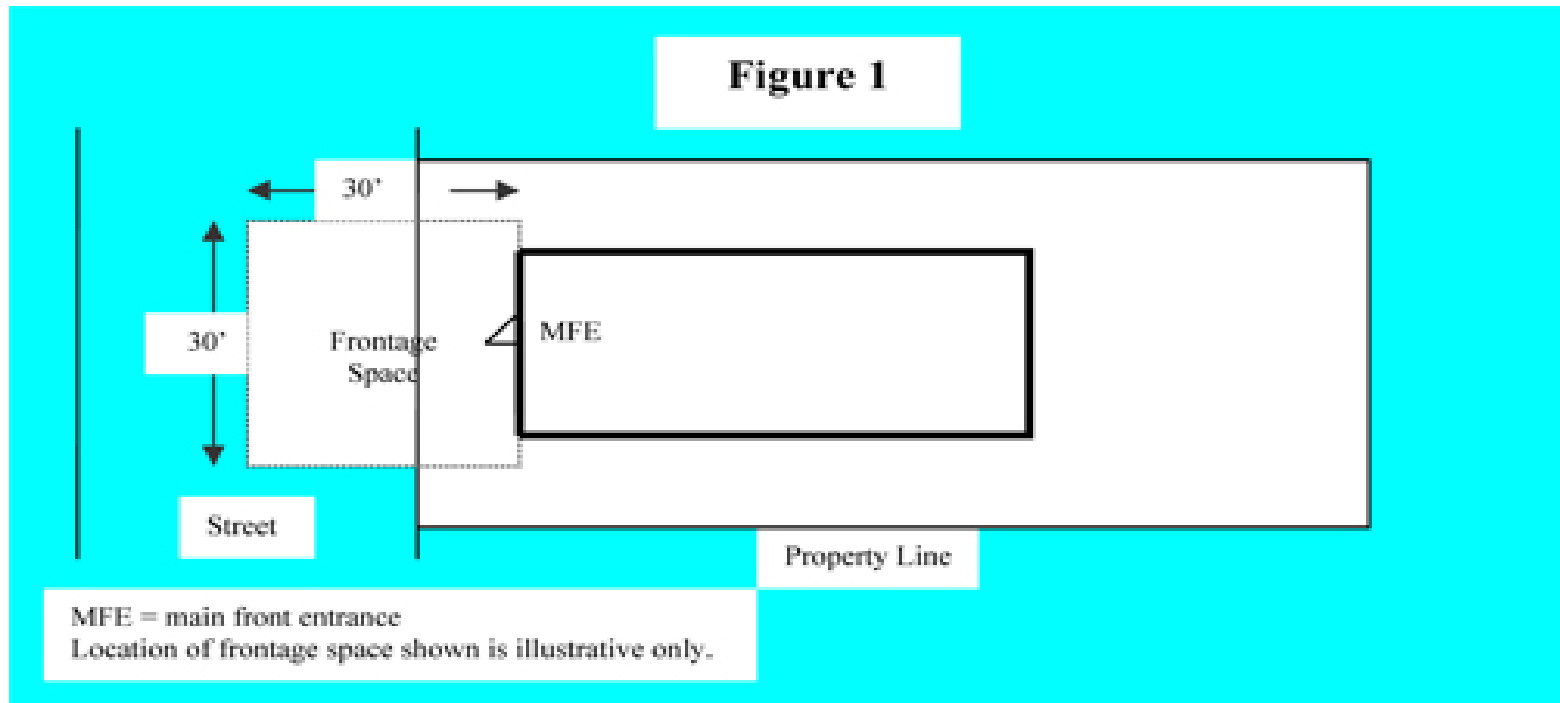


# Frontage As Defined by FC

The Fire Code uses the term “**frontage space**” –Figure 1

- A 30-foot by 30-foot unobstructed space in front of the “main front entrance” to a building.
- If the main front entrance of a building is more than 40 feet from a public street, a fire apparatus access road is required from the public street or private road to the frontage space.

# Frontage As Defined by FC



# 3. Narratives (FP01)

**3. In narrative form**, a description of safety systems and features **in the order as listed in the code**, including:

- 3.1. Communications systems *PA*
- 3.2. Alarm systems *FA, Sprinklers*
- 3.3. Smoke and carbon monoxide detection equipment
- 3.4. Location of fire command station:  
*(The principal attended or unattended location where the status of detection, alarm communications and control systems is displayed, and from which the system(s) can be manually controlled.)*
- 3.5. Elevator recall
- 3.6. Emergency lighting and power
- 3.7. Standpipes and Holding Rooms if exists
  - *(Provide diagrammatic locations of Siamese and Hydrants on the Frontage)*

# Narrative Contd.

3.8. Sprinklers

3.9. Emergency and standby power systems

3.10. Mechanical ventilation and air conditioning

3.11. Smoke control systems and equipment

3.12. Furnishings types and materials *(Example: The school is furnished with a variety of combustible and noncombustible furnishing...)*

3.13. Places of assembly- *Cafeteria (capacity 300) is located on the ground floor...*

3.14. Fire department access- *Location of FD access windows and state that they are labeled*

3.15. Photoluminescent pathway markings- *Not required for low rise building*

3.16. Other safety related systems, required and voluntary, to be installed- *The kitchen is equipped with an approved Ansul System...*

# Work Permits + Applications

There are many permit types, such as construction, boiler, elevator and plumbing. The primary permit applications are: New Building (NB) and Alterations Type-1, 2 and 3:

- NB: Construction of new structures
- ALT1: Major alterations that will change use, egress or occupancy
- ALT2: Multiple types of work, not affecting use, egress or occupancy
- **ALT3: One type of minor work, not affecting use, egress or occupancy.**

# The Protocol

- ✓ File the plans with BCC as an **ALT-3** application
- ✓ BCC will issue objections
- ✓ Satisfy the objection as any other application/project:
  - After BCC objections are cleared on the **ALT3**, the plans shall be submitted to FDNY
  - **BCC will issue a no work permit (under CPO as an owner) to close out the filing for the FPP.**
  - Letter of no objection shall be obtained from F.D.N.Y. and presented to BCC upon receipt

# MEANTIME...

## Protocol contd.

### Turn Overs:

CM will accept the design packages with proof of an **ALT3** filing.

# Protocol Contd.

## Close Out & Transfer:

- Upon filing the **ALT 3**, the related **ALT 2** will be signed off.
- The Plan Examiner and the Technical Inspector for closeout shall enter “**waived**” in the main **ALT2** filing and proceed with **close out** and obtaining the Letter of Completion.

# QUESTIONS?



# Part II

## ROOF ACCESS PLANS

# Building Rooftop Access(FC504)



# Code Analysis

## NYC Fire Code enacted on July 1, 2008 Mandates Rooftop Access

- Rooftop Access Requirements apply to:
  1. Buildings 100 feet or less in height
  2. Rooftop with less than a 20 Degree slope from horizontal

# Code Analysis

## Roof Access Plan is triggered by any of the following:

- Alteration of existing rooftops( Replacement of roofing assembly is not an alteration)
- New rooftop installations
- Technology upgrades, modifications or additions

# Code Analysis Contd.

## Not subject to the requirements(No Rooftop Access Required):

- Repairs and routine maintenance
- In-kind (like-for-like) replacements
- Work inside a shelter on a rooftop
- **Roof covering/membrane replacement**
- Soil less than 4 inches in depth
- Pavers



# Components of Roof Access Plans

- Access openings clearance
- Clear paths
- Bulkhead door clearance
- Fire escape clearance
- Height limits for clear path
- Color coding of cables and piping
- labeling of telecommunications equipment

# Legends

- 1** UNOBSTRUCTED ROOFTOP ACCESS LOCATIONS AND LANDINGS
- 2** CLEAR PATH CLEARANCES
- 3** ROOFTOP DOOR OPENING CLEARANCES
- 4** FIRE ESCAPE CLEARANCES



# Obstruction

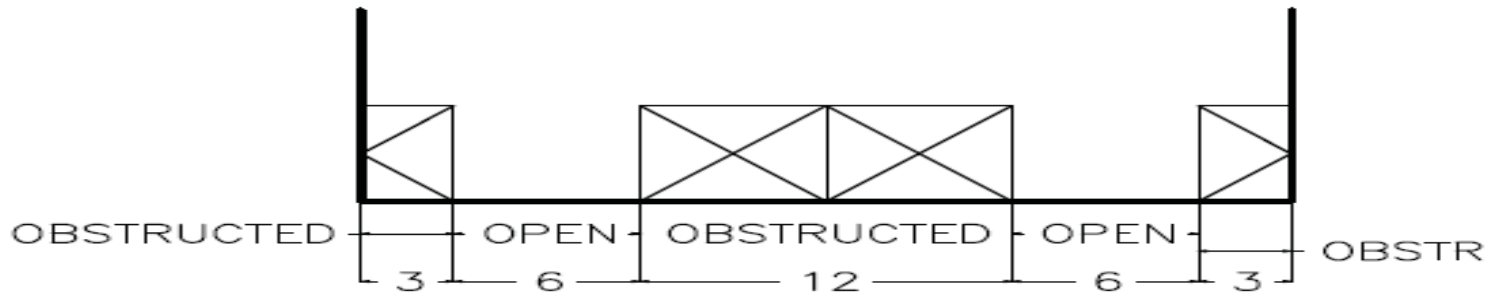
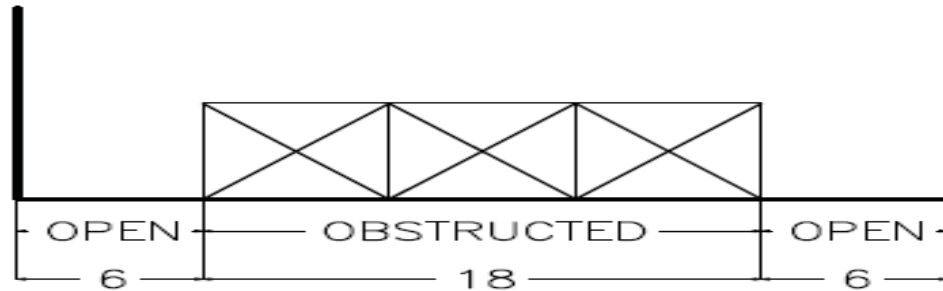
**Definition: “[...] any fixture or other item that is not readily movable by a person without the use of tools or equipment [...]”**



# Access openings

- Every **12 FEET** of **frontage** width requires **6 FEET** access opening
- Minimum **12 FEET** between distinct openings
- Each opening can serve a specific apparatus ladder

# Roof Access





# Clear Paths

- Front to rear AND side to side
- 6 feet in width, 9 feet in height (*in case of overhead obstructions*)
- All access points, rooftop fire escapes, bulkhead doors must connect to clear path
- Every 100 feet of building requires a clear path
- Wings of buildings require distinct clear paths
- 3 foot wide inward swinging gates for fences obstructing clear path
- Ship's ladder between multi-level roofs (one story only).

# Clear Path Contd.

## Clearances:

- Bulkhead doors – 6' measured from hinge
- Fire escapes – 3' measured from each railing, extrude line between

## Labeling:

- Conduit, Piping and Antennas
  - Less than 1 foot high-ok
  - More than 1 foot high
    - Provide cross over
    - File a TM5



??????





# Alteration of existing rooftops, and new rooftop

- Alteration of existing rooftops, and installation of new rooftop trigger compliance obligations for the entire roof
- Alterations include any addition to, or modification of the devices, equipment and systems installed, other than **repairs or in-kind** (like-for-like) replacements in the ordinary course of business.
- An example of an ordinary repair would be the servicing or replacement of components of an existing installation.

# None Conformance

If any of the following apply, identify clearly on drawings and file a **TM5** application to obtain a variance

1. Clear path width less than 6 feet (specify available width).
2. Clear path height less than 9 feet (specify available height).
3. An obstruction crosses the clear path, greater than 1 foot above the roof level.
4. Beam crosses the clear path (specify lower and upper beam elevation above roof).
5. Rooftop door opening clearance less than 6 feet from hinge (specify clearance).
6. Fire escape clearance less than 3 feet in all directions (specify available clearance).

**TM5:** [www.nyc.gov/html/fdny/pdf/fire\\_prevention/TM5.pdf](http://www.nyc.gov/html/fdny/pdf/fire_prevention/TM5.pdf)

# None Conformance contd.

7. Rooftop access landing area less than 6 feet by 6 feet (specify available dimensions).
8. Rooftop access landing area not connected to clear path.
9. Landing area connected to clear path by path less than 6 feet (specify available width)
10. Total number of rooftop access points (total feet) along building wall less than required (provide details)-  $(\text{Frontage length}/12) \times 6$
11. Required arrangement of rooftop access landings not as per requirement (show actual arrangement of open and obstructed perimeter on plan set).
12. Inadequate clearance around rooftop scuttles/hatches or skylights.



# The Plan

- ✓ **Shall be 11 inches by 17 inches in dimension**
- ✓ **Should be drawn to scale**
- ✓ **Shall include a directional compass**

# The Plan

**Shall include the location and labeling of the following:**

- ✓ Fire escapes
- ✓ Bulkheads and rooftop access points
- ✓ Equipment and systems installed on the roof including
  - Antennas
  - Cable trays
  - Mechanical equipment(RTU, Chillers etc.)
  - Solar panels and,
  - Roof gardens

# The Plan

- ✓ Relative location of the building in question, relative to adjacent buildings on the same side of the street.
- ✓ Label accessible exposures
- ✓ Indicate different roof levels for the same building and attached buildings
  - Fixed ladders (if any)
  - Other means of access between such roofs.
- ✓ Type and height of all obstructions in the clear path, which are greater than 1 foot and
- ✓ Less than 9 feet vertical clearance.
- ✓ Indicate cable tray heights and widths

# Filing

- **File the roof access plan with a TM1 application**
- **Attach a Fee Waiver request**

