



# **PARKING STRUCTURES:** *The Parallels of Code & Inspection*

*presented by*

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# PRESENTATION DESCRIPTION

This presentation will discuss key measures needed to ensure the structural stability of existing parking structures. In this presentation will cover data that is relevant to parking structures in NYC that led to the development of the new Code and Rule. Content includes: different incidents to avoid by enacting these Code changes, a look into some of the details of the pending rule and how one can become a Qualified Parking Structure Inspector (QPSI). In addition you will be able to identify the maintenance difficulties, inspection nuances, and the details of the Code requirements for different types of parking structures. Lastly this presentation discusses the new proposed rule for an early initial observation.

# 2022 NYC CODE

- **2022 Construction Codes went into effect November 7, 2022**
  - Certain provisions went into effect January 1, 2022 – including parking structures
- **Included new provision for parking structure assessment and compliance filing**
- **1 RCNY 103-13 went into effect June 22, 2022**
  - Similar to FISP and Retaining Wall requirements, though with some differences
  - 1RCNY 101-7 (Approved Agencies) was also amended to include Qualified Parking Structure Inspectors (QPSI)
- **File in DOB NOW: *Safety* PARKING STRUCTURES only**
- **6 Year Filing Cycle**
  - (3) 2-year sub-cycles broken down by Community District
  - Cycle 1A started January 1, 2022 and due at the end of this year

# REPORT FILING REQUIREMENTS

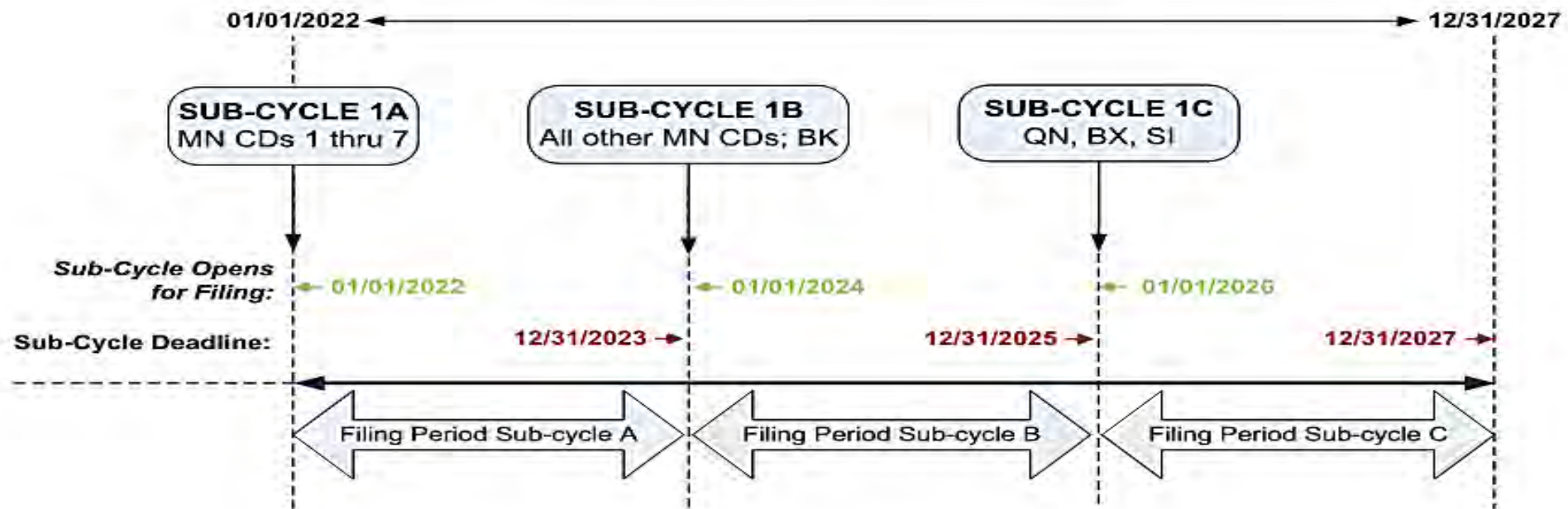
File a compliance report at least once during each six-year report filing cycle:

- A. Borough of Manhattan Community Districts 1 through 7:
  - two-year filing window starting **January 1, 2022**
  
- B. All Community Districts in the Borough of Manhattan not listed in (A), above, and all Community Districts in the Borough of Brooklyn,
  - two-year filing window starting **January 1, 2024**
  
- C. All Community Districts in the Boroughs of Queens, the Bronx and Staten Island
  - two-year filing window starting **January 1, 2026**

# FILING CYCLE DIAGRAM

**Parking Structure - CYCLE 1**  
**ADMINISTRATIVE CODE 28.323**  
**2022-2027**

## PARKING STRUCTURES CYCLE 1 Six Year Cycle Period



# ARTICLE 323

- **Condition assessment performed once every six years**
  - To be performed by an approved professional (QPSI)
  - Prepare checklist for annual observation
  - File the report with the Department
- **Observation performed annually**
  - To be performed by non-professional assigned by the owner (super, garage attendant, etc.)
  - Not filed
  - Would need to be made available if there is an incident/complaint
- **During either assessment or observation:**
  - ***Notify DOB immediately of any unsafe conditions via 311 and DOB NOW***



# PARKING STRUCTURES: CHALLENGES

## ■ Locations

- Detached, dedicated use
- Basement of office or residential building
  - People don't spend a lot of time there
  - Typically not well lit
- Roof of building

## ■ Materials

- Concrete, steel, wood
- Material degradation
- Unique wear and tear: exposure to de-icing solutions, motor oil, traffic, often open to the elements

## ■ Important to decide

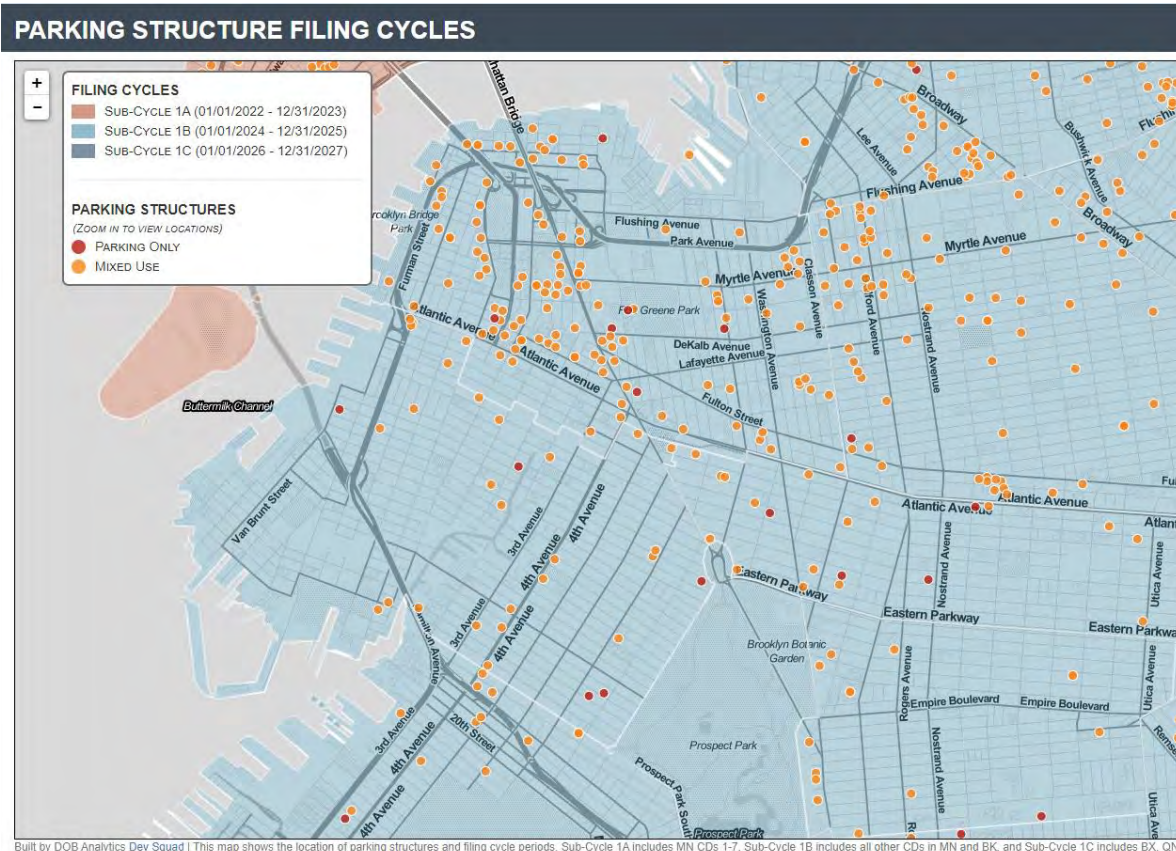
- Size, # levels, location within building

## ■ Ownership

# WHOSE RESPONSIBILITY?

- Report filing separate issue from maintenance/repairs
- Building owner would be responsible, not parking operator
- Does anything need to change in the lease agreement?

# DETERMINING THE POPULATION



- How do we find the buildings?
- NYC has unique challenges
- An ongoing process



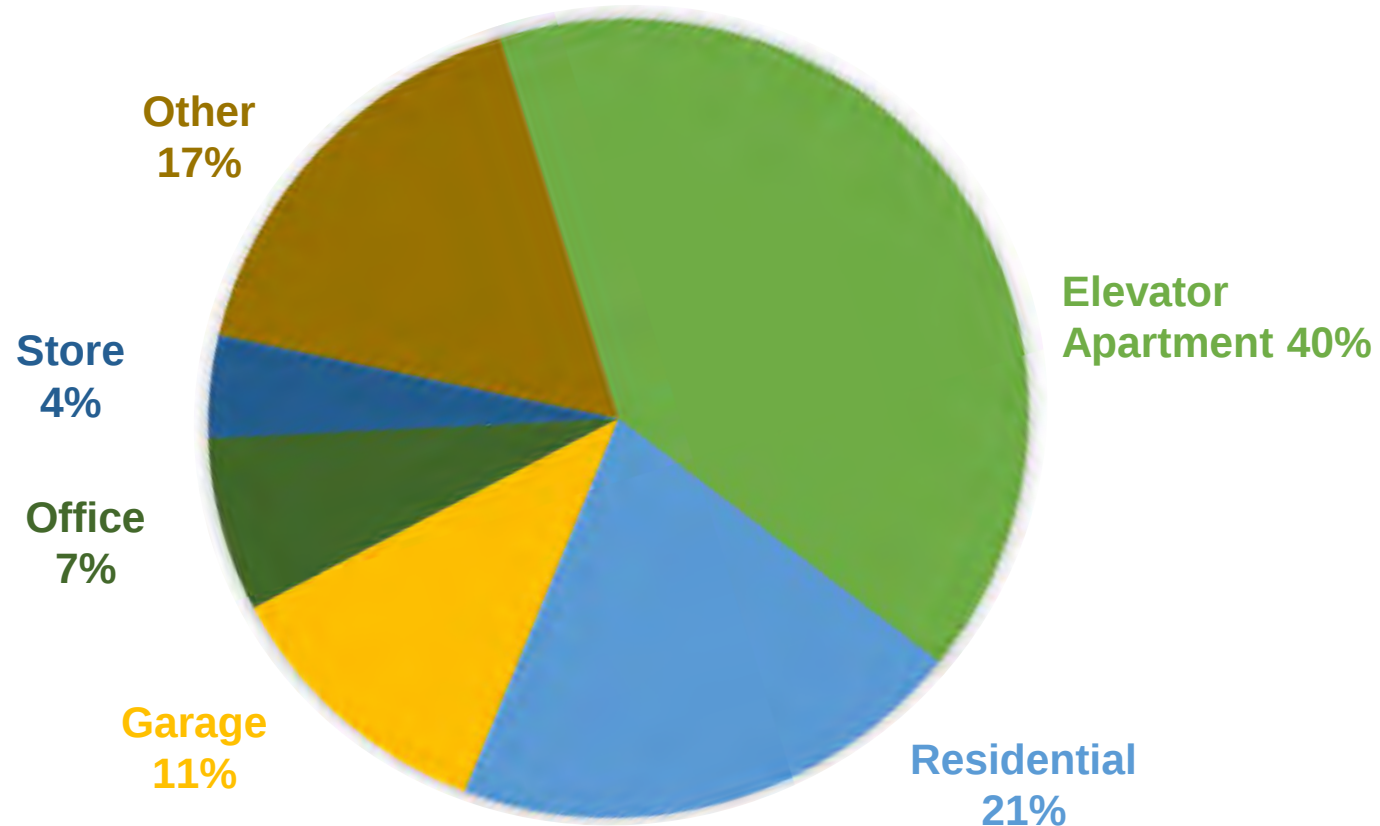
# POPULATION





# TYPES OF BUILDINGS

## *Distribution of Parking Structure Type*



# POPULATION

- Manhattan: 1410
- Brooklyn: 890
- Queens: 1060
- Bronx: 360
- Staten Island: 30

**TOTAL ~ 3800**

## **Structures not included:**

1. Unenclosed, unattached outdoor parking lots
2. Private garages serving one- and two-family homes
3. Garages with occupancy of fewer than three cars
4. Autobody repair shops, showrooms, or service stations

# NYC BUILDING CODE: MAINTENANCE OF BUILDINGS

## ARTICLE 301 GENERAL

**§28-301.1 Owner's responsibilities.** All buildings and all parts thereof and all other structures shall be maintained in a safe condition. All service equipment, means of egress, materials, devices, and safeguards that are required in a building by the provisions of this code, the 1968 building code or other applicable laws or rules, or that were required by law when the building was erected, altered, or repaired, shall be maintained in good working condition. Whenever persons engaged in building operations have reason to believe in the course of such operations that any building or other structure is dangerous or unsafe, such person shall forthwith report such belief in writing to the department. The owner shall be responsible at all times to maintain the building and its facilities and all other structures regulated by this code in a safe and code-compliant manner and shall comply with the inspection and maintenance requirements of this chapter.



# NOT ALL THE SAME





# CODE REQUIREMENTS

- Classification: safe, unsafe, safe with repair and/or engineering monitoring (SREM)
- Include a record of all unsafe conditions of the structure
- Condition of structural framing members, any visible reinforcement, connections, and conditions of slabs and slab joints
- Must also contain the annual observation checklist to be used for subsequent annual parking structure observations
- Can only be filed by a **designated Qualified Parking Structure Inspector (QPSI)**

# UNSAFE

- Remove the unsafe condition and/or provide public protection
- Notify the Department immediately via 311 and DOB NOW SAFETY
- Notify the Owner immediately if they are not present at time of discovery of the unsafe condition
- Correct the condition within 90 days or request an extension
- Once corrected, file an amended report

# UNSAFE





# SAFE WITH REPAIR AND/OR ENGINEERING MONITORING (SREM)

- A plan detailing the proposed monitoring program;
- The name of the engineer performing the monitoring;
- A stability analysis of the parking – typical and worst case structural framing members which shows that the structure is stable under current and expected loading conditions; and
- It is to be explicitly stated if only repairs are required with no monitoring.
- Subsequently assessed no more than 3 years from initial assessment – **file an amended report**



# 1 RCNY 103-13

- a) Definitions
- b) Responsibilities of qualified parking structure inspectors
- c) Condition Assessments
- d) Annual Observation
- e) Civil Penalties
- f) Full or partial penalty waivers; eligibility and evidentiary requirements

# CONDITION ASSESSMENT

Describe **all components** of the load carrying systems specific to the area being used as a parking structure or **the entirety of the building** if its sole use is as a parking structure. Areas to be included are:

1. ramps and other spaces used to access parking areas;
2. in the case of a parking structure located at a floor or floors above floors of other occupancies, the slab and columns immediately below the lowest level of the parking structure;
3. in the case of a parking structure located at a floor or floors below floors of other occupancies, the slab and beams/joists forming the ceiling of the topmost level of the parking structure;
4. any area outside of that described in 1, 2 and 3 that may exhibit deterioration extending from or caused by the structure comprising the parking area.

# BUILDING FAÇADE EXCEPTIONS



If the building in which the parking structure is located is included in FISP



If the parking occupies less than 50% of the overall square footage of the building



# NO FAÇADE EXCEPTIONS



If the parking occupies more than 50% of the overall square footage of the building



# PHYSICAL EXAMINATION

- Methods used must permit a complete physical examination of the structure
- Including, but not limited to: sounding, load tests, optical survey, non-invasive scanning, and cores.
- The QPSI shall determine the most deleterious locations and perform physical examinations at those locations.
- Must be performed on a minimum of 10% of each structural element including, but not limited to, beams, columns, and slabs

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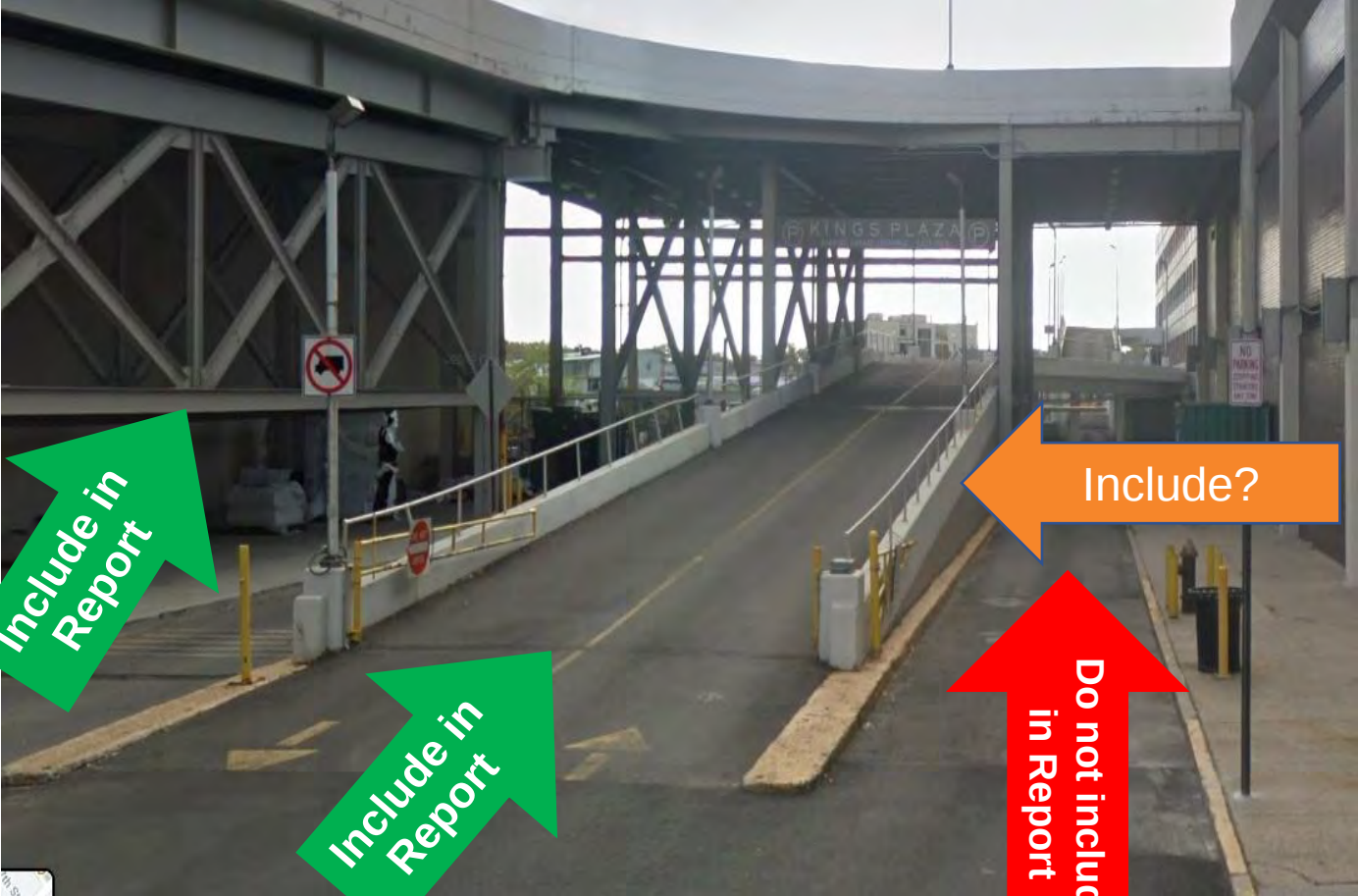
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# CASE 1: RAMPS





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# CASE 2: PARKING ABOVE OTHER OCCUPANCIES



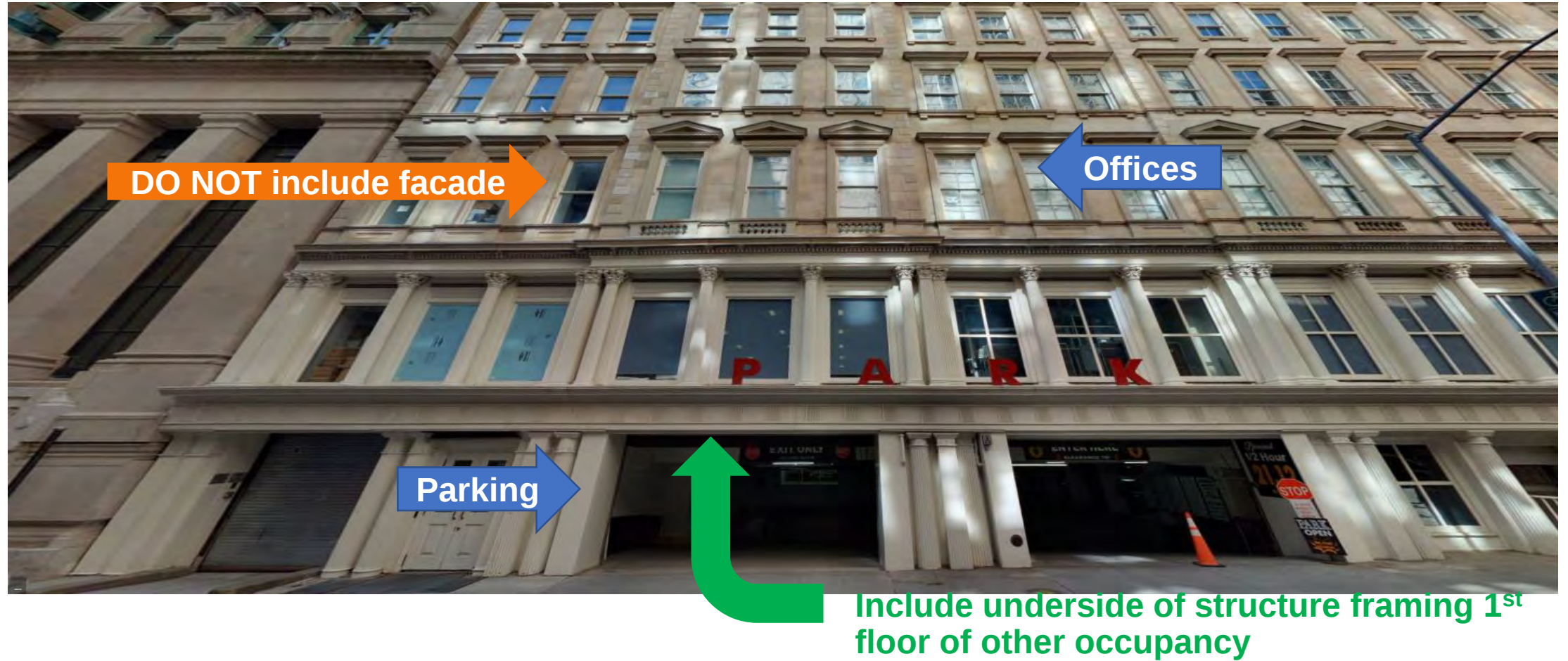
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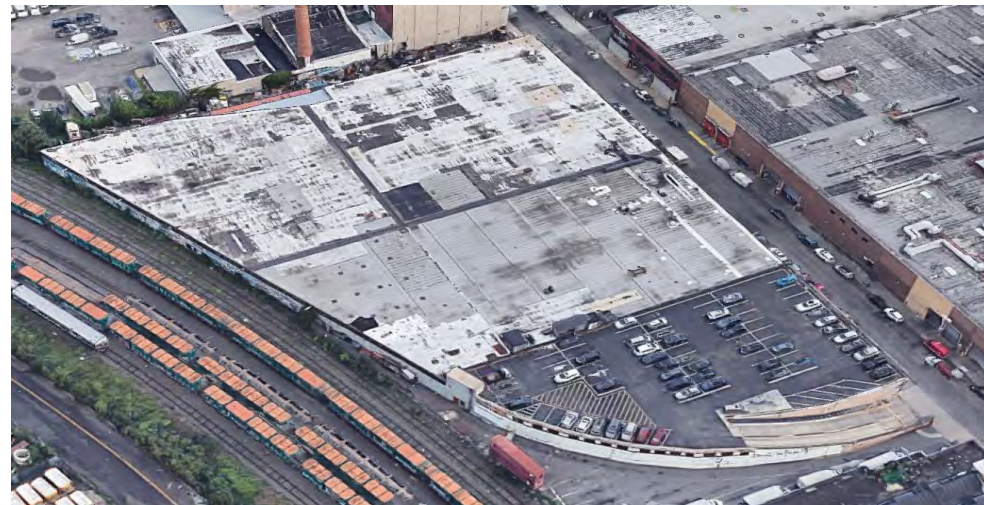


# CASE 3: PARKING BELOW OTHER OCCUPANCIES





# OTHER CASES



*What should be included in the report?*

# ANNUAL OBSERVATION

- Based on the checklist prepared by the QPSI included in the most recent accepted compliance report
- Completed by the owner or someone working on behalf of the owner
- Every year in between filing submissions
- Completed checklists must be kept on site and be made available
- What should they do if they discover an unsafe condition during the annual observation?

# ANNUAL OBSERVATION CHECKLIST

ANNUAL STRUCTURAL CHECKLIST	
PARKING STRUCTURE NAME	DATE
INSPECTOR	CITY, STATE
OWNER	

**FLOORS**

- \_\_\_ When was the last floor sealer application? (Typically applied every 3 to 5 years)
- \_\_\_ Are there rips, tears, debonded areas, or signs of embrittlement in the traffic topping?
- \_\_\_ Are there cracks in the floor slab? If yes, where are they located and how wide are they?
- \_\_\_ Are there signs of leaking?
- \_\_\_ Any spalls or delaminations? If yes, how big and where are they located?
- \_\_\_ Has chloride ion content testing been performed this year?

**BEAMS AND COLUMNS**

- \_\_\_ Are there cracks? If yes, are they vertical or horizontal and how wide are they?
- \_\_\_ Are there any signs of leaking?

**STAIR/ELEVATOR TOWERS**

- \_\_\_ Are there any signs of a leaking roof?
- \_\_\_ Are there any cracks in the exterior brick?
- \_\_\_ Are there any cracks in the mortar joints?

NOTES AND CORRECTIVE ACTION NEEDED:

**JOINTS**

- \_\_\_ Are there any signs of leaking, loss of elasticity, or separation from adjacent surfaces?
- \_\_\_ Expansion joints
- \_\_\_ Control joints
- \_\_\_ Construction joints
- \_\_\_ Tee-to-tee joints

**ARCHITECTURAL SEALANTS**

- \_\_\_ Are there any signs of leaking, loss of elasticity, or separation from adjacent surfaces?
- \_\_\_ Between windows and doors
- \_\_\_ In block masonry
- \_\_\_ Exterior sealants
- \_\_\_ Concrete walks, drives, and curb landings

**EXPOSED STEEL**

- \_\_\_ Is there any exposed steel? If yes, where is it located and is it rusted?

**MASONRY**

- \_\_\_ Are there any cracks in the brick?
- \_\_\_ Are there any cracks in the mortar?
- \_\_\_ Are there any brick spalls? If yes, where are they located and how big are they?

NOTES AND CORRECTIVE ACTION NEEDED:

**BEARING PADS**

- \_\_\_ Are bearing pads squashed, bulging, or out of place? If yes, where?

After answering the above questions, please consult a qualified engineer to discuss your answers.  
NOTES AND CORRECTIVE ACTION NEEDED:



# FILING FEES & CIVIL PENALTIES

## ■ Report Filing Fees

<b>Initial Filing</b>	<b>\$305</b>
Amended Filing	<b>\$85</b>
Subsequent Filing	<b>\$85</b>
Application for extension of time to complete repairs	<b>\$65</b>

## ■ Civil Penalties

<b>Late Filing</b>	<b>\$1000/month</b>
Failure to File	<b>\$5000/year</b>
Failure to Correct Unsafe Conditions	<b>\$1000/month</b>
Failure to Correct SREM Conditions	<b>\$2000 (one time)</b>

# BECOME A QPSI!

## Qualified Parking Structure Inspector

- Minimum requirements
  - P.E. with 3 years experience with parking structures
  - Provide us with samples of parking structure related work
    - Condition assessment reports
    - Repair or design drawings
- Must pass an interview with the Department (typically 1-hour long)

# THE QPSI INTERVIEW

## What we're looking for

- technical competence
- understanding of regulatory requirements

**both** are equally important!



# PROPOSED RULE CHANGE

- QPSI to have building versus parking structure experience
- Annual observation by QPSI
- Subcycle B and C buildings to have early annual observation by August 1, 2024
- Public Hearing August 30, 2023

# SUMMARY

- **New Code and Rule**
- **Report Filing Requirements - Sub-Cycles**
- **Challenges and concerns with Parking Structures**
  - Evaluate what different types of structures might be subject
- **Population**
  - What types of parking structures are subject
- **How to File**

# SUMMARY

*(continued)*

- **Code Requirements**
  - Classification: Safe, SREM, Unsafe
  - Condition Assessment
    - Physical examination
    - Different cases
  - Annual Observation checklist
  
- **Become a QPSI!**



# CONTACT US...

[ParkingStructures@buildings.nyc.gov](mailto:ParkingStructures@buildings.nyc.gov)

A low-angle photograph of several skyscrapers under construction against a blue sky with light clouds. The buildings are covered in orange and yellow safety netting and scaffolding. Several white tower cranes are positioned around the structures. The text 'nyc.gov/buildings' is overlaid in the center in a blue, outlined font.

[nyc.gov/buildings](https://nyc.gov/buildings)

build safe | live safe

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