2016 BUILD SAFE LIVE SAFE CONFERENCE

NON YOUTON

Facades & Retaining Walls: Laws, Rules, and Filing Protocols

Timothy Lynch, P.E. Jill Hrubecky, P.E.

> **NYC** Buildings

American Institute of Architects Continuing Education System

The NYC Department of Buildings is a registered Provider with The American Institute of Architects Continuing Education Systems (AIA/ CES). Credit earned on completion of this program will be reported to AIA/CES for AIA members. Certificates of Completion for both members and non-AIA members are available upon request.

This program is registered with the AIA/CES for continuing professional education. As such, it does not include content that may be deemed or constructed to be an approval or endorsement by the AIA of any material of construction or any method or manner of handling, using, distributing, or dealing in any material or product.

Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.





Course Description

Building Laws and Rules for Facades (A/C 28-302) and Retaining Walls: (A/C 28-305)

As a built, densely populated urban environment, NYC includes approximately 1M aging buildings, along with thousands of aging retaining walls. The law requires that OWNERS of all these structures and appurtenances must maintain them SAFE at all times. In addition to maintaining the structures SAFE, owners of buildings over 6 stories high, and owners of retaining walls in excess of 10' high and located on the public way, are also required by law to file periodic inspection reports with the Department.



Course Description

Facades

We will discuss the Laws, Rules, fees, penalties, UNSAFE notifications etc. that govern owners and licensed professionals involved in maintaining these buildings SAFE, and the requirements for the 5 yearly periodic inspection reports. Also to be discussed will be the various types of historic façade construction and some of the public safety concerns with cracked and broken terracotta, stonework, brickwork, guards and handrails that, if left to deteriorate lead to UNSAFE conditions. We will discuss these UNSAFE conditions and how these impact public safety.



Course Description

Retaining Walls

In 2014, the Department added laws and rules requiring periodic inspections for 10' high retaining walls located on the public way. Retaining walls frequently span numerous properties and many have complex property line and ownership issues. We will discuss the various types of retaining wall structures and typical problems with occupancy and public safety as impacted by partial or full collapse. We will also discuss the retaining wall laws, rules, filing protocols, fees, penalties etc.



Learning Objectives

At the end of the this course, participants will:

- Learn how to protect the public who live and work in New York City in and around its large population of buildings from falling pieces of façade (+/- 1M buildings, 14.K > 6 stories FISP buildings) and unsafe retaining walls.
- 2. Be **educated** on how to recognize the FISP population of buildings and retaining walls subject to our administrative and Building Codes. In particular, to help identify when the buildings and retaining walls are not maintained "safe", and the risks associated with "Failure to Maintain", incorrect filings with the DOB.
- 3. Be **directed** to free web sites for codes, laws, and regulatory filings with Department.
- 4. Become **familiarized** with the evolution of the codes, how they pertain to ownership of retaining walls, and what is required of owners to maintain their walls.

Copyright Materials

This presentation is protected by US and International copyright laws. Reproduction, distribution, display and use of the presentation without written permission of the speaker is prohibited.



© NYC Dept. of Buildings



Facades Inspection Safety Program Objectives

- To protect the public who live and work in New York City in and around its large population of buildings from falling pieces of façade (+/- 1M buildings, 14.K > 6 stories FISP buildings).
- To educate our audience on how to recognize the FISP population of buildings. In particular, to help identify when the buildings are not maintained *safe*, and the risks associated with *Failure to Maintain*, incorrect filings with the DOB.
- To direct our audience to free web sites for codes, laws, and regulatory filings with Department.





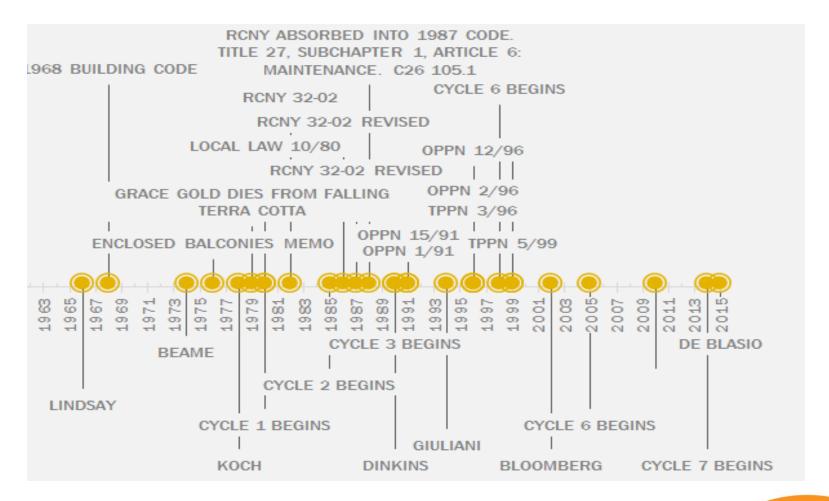


FISP Requirements Façade Inspection Safety Program

- Since 1980, NYC Laws, Rules and Affidavits have been in place governing the reporting and maintenance of facades for structures over 6 stories.
- Local Law 10 of 1980 immediately incorporated into 1968 Building Code as§28.129. This was accompanied by Rule 32.03 and TR6.
- Currently 2014
 - Administrative Code § 28-302.1
 - 1 RCNY § 101-07: FISP Qualifications
 - 1 RCNY § 103-04: FISP Rule



Detailed Version of LL10/80, LL11/98/ FISP





Sample FISP Buildings



+/- 1900's to 1930's. 15 to 30 story +/-Steel Framed Buildings. Solid Masonry Walls.







FISP Bearing Wall Buildings Commercial and Residential







Post-War Reinforced Concrete Flat Slab Cavity Wall Buildings





Contemporary High Rises with Window/Curtain Walls





Code Provisions: Owners Obligations



Structural Evaluation: Administrative Provisions

2014 NYC Administrative Code: Buildings under C of O

- § 28–102.1 Applicability General Most restrictive provision shall govern
- § 28–102.4 The lawful use of an existing building or structure may continue unless there is a retroactive change required
- § 28–103.2 Interpretation This code shall be liberally interpreted to secure the beneficial purposes thereof
- § 28–103.8 Matters Not Provided For To be determined by the DOB
- § 28–301.1 Owner's Responsibilities Safe: Failure to Maintain
- § 28–301.2 Intent Minimum Standards: SAFE building



NYC Administrative Code §28 - 301.1 Maintenance of Buildings: SAFE

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.



NYC Administrative Code § 28 - 302: Report Maintenance of Exterior Walls > Six Stories

ARTICLE 302 MAINTENANCE OF EXTERIOR WALLS

§28-302.1 General. A building's exterior walls and appurtenances thereof shall be maintained in a safe condition. All buildings greater than six stories shall comply with the maintenance requirement of this article.

Exception: The requirements imposed by this article shall not apply to any part of an exterior wall that is less than 12 inches (305 mm) from the exterior wall of an adjacent building.



NYC Administrative Code § 28-302: Report Maintenance of Exterior Walls > Six Stories

- Conditions report, not a repair scoping document
- Safe at all times (*meets minimum standards*)
- Unsafe always with public safety measures
- Safe With a Repair and Maintenance Program (Always a precursor to repairs)
- Five-year Report Cycle owners must file
- Qualified licensed design professional



1 RCNY 103.04: Report Specification High Points

- 1 RCNY 103.04 is a LAW and accompanies A/C 28-302. This 7 page document provides minimum specifications for the FISP report. There are 10 previous versions of rule. Minimum specifications apply to SAFE buildings.
- All facades must be maintained SAFE by owners (§103.04 b.1).
- All facades SAFE to remain so for minimum of 5 years.
- Examinations by owners on a 5 year basis. Extreme caution if NRF.
- QEWI must immediately notify DOB of UNSAFE conditions (311 and FISP 3).



1 RCNY 103.04: Report Specification High Points

- Direct supervision by QEWI and review of previous reports required.
- Close-up inspections required. Probes and physical tests. Standard of Care.
- Previous maintenance repairs, Alt filings and violations must be incorporated.
- Balcony enclosures need permits. Balcony railings included in report (Code included).



TR 6: Affidavit of Conditions

Last	lame First Name		MI		
Bus.	Name Bus. Address		is. Address	Bus. Tel.	
	City	State	Zip	Bus. Fax	
	E-Mail			Mobile Phone	
7	Statements and Sign	atures		6	
Dwn	wner / Owner Representative			Qualified Exterior Wall Inspector (QEWI)	
	I hereby state that I am the owner/owner's representative of the premises referenced in the attached report. Furthermore, I have received and read a copy of the attached report and I am aware of the required repairs and/or maintenance, if any and the recommended time frame for same. I certify that all items noted as SWARMP conditions in the previous cycle's report have been corrected/repaired; or this report must be rated as Unsafe as per Administrative Code section §28-302.1, if applicable.			Name (please print)	
				Signature	Date
				I hereby state that the Owner./.Owner's Representative has authorized me to submit this report. Furthermore, I hereby state that all statements are correct and complete	
Name				to the best of my knowledge. A copy of this report has . been given to the owner.	
Relationship to owner		Phone	*	P.E. / R.A. Seal (apply NYS seal,	hen sign and date)
Email			Date		7

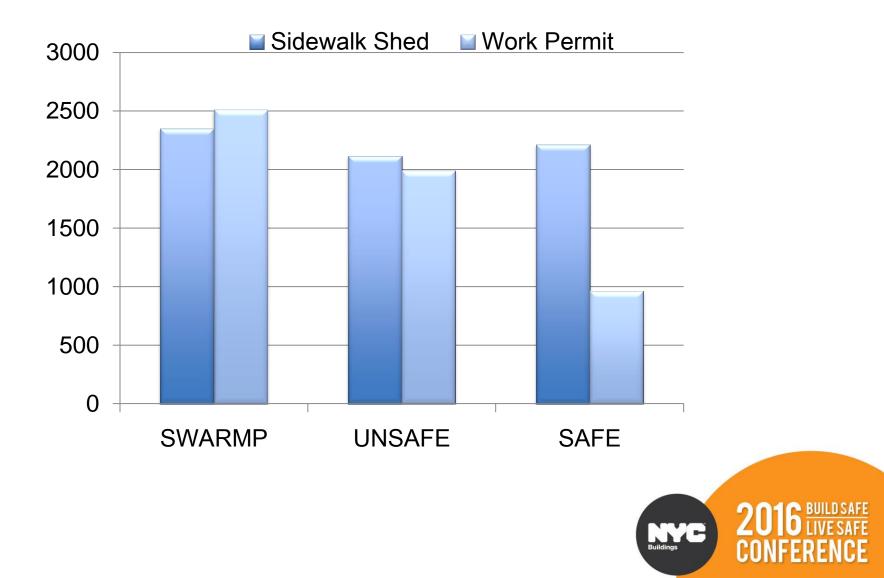
QEWI must inform OWNER of inspection conditions. Means that QEWI and Owner comply with other three (3) provisions.



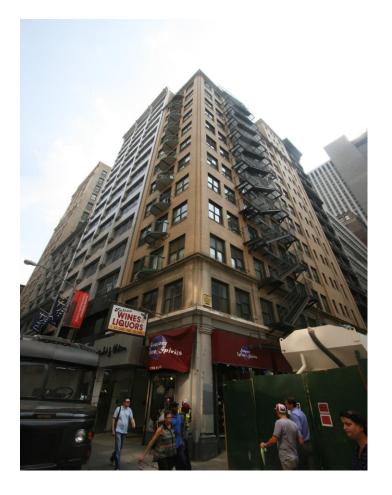
Numbers for Cycle-7 Filings Conflict with Conditions



Surprising Numbers 700 NRF's: Owners Did Not File Reports



Unsafe Condition Filed SAFE



Broken and fallen t/c patched with mortar - hazardous

2016 BUILD SAFE LIVE SAFE CONFERENCE

NYC

Unsafe/Safe with Repair

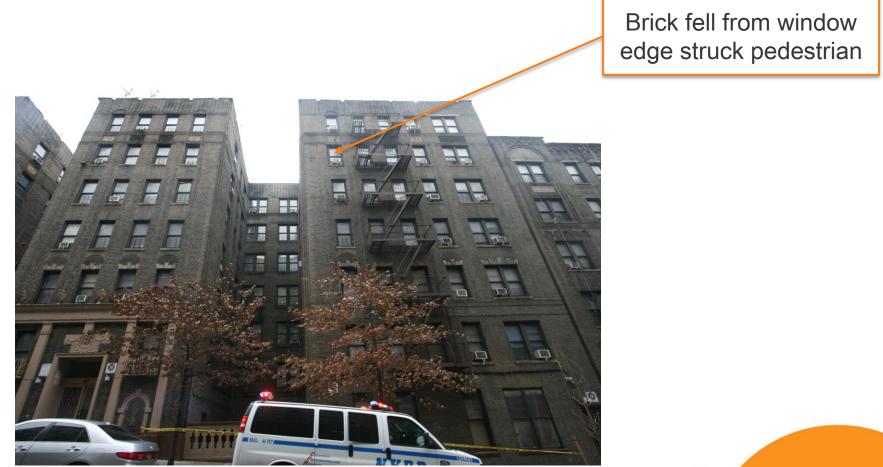






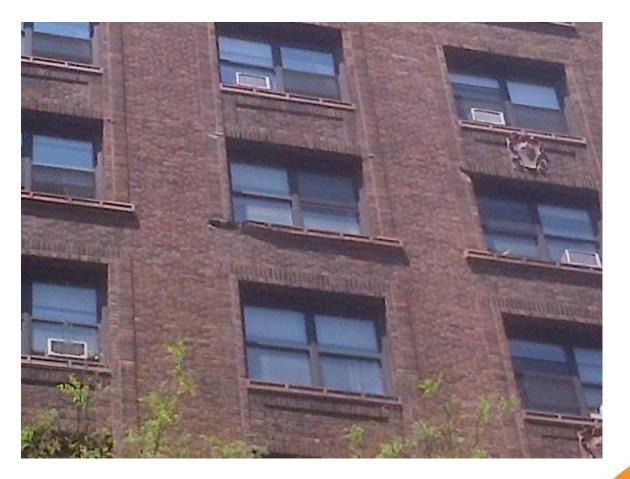


Building Filed Safe





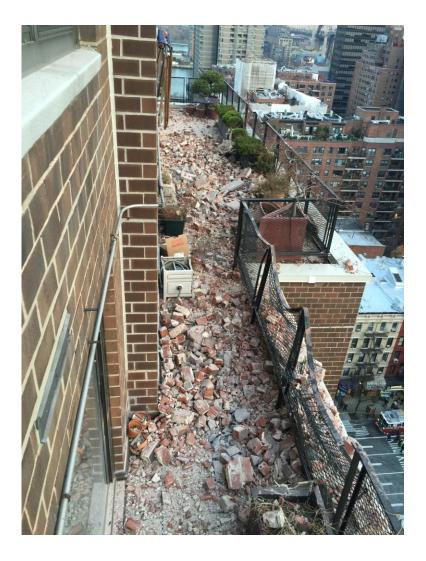
Filed SAFE: T/C Sill Fell - Fatality





2016 BUILD SAFE LIVE SAFE CONFERENCE

Midtown Manhattan: Cavity Wall Failure





1000 SF exterior wythe fell to street from 350'



Filed SAFE: Queens Six Floors of Stucco Fell to the Street







Application of Evaluation Principles

What's an example of a practical application?

Façade Evaluation

- Age \rightarrow Code
- Projections
- Anchorage
- System Type
- Material Type and Integrity (brittle vs. ductile)
- Material Strength
- Load Requirements
- Site Observations

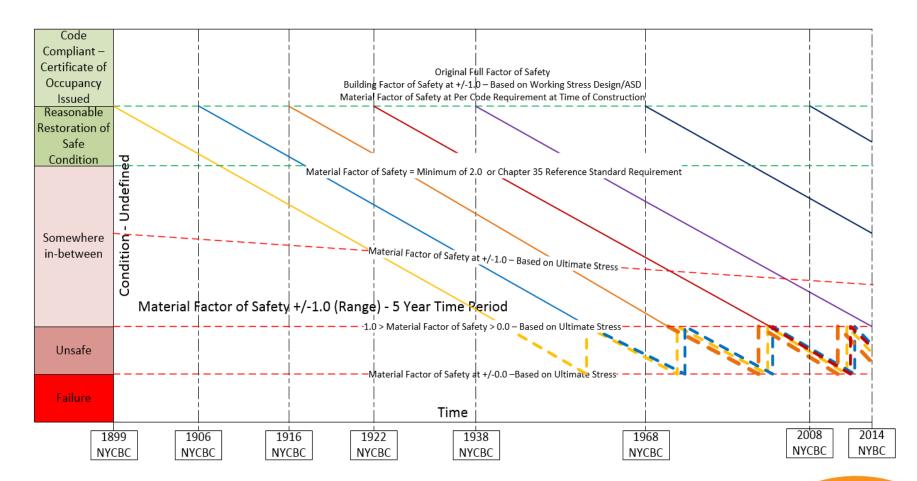


Big Picture Topics: Evaluation

- Building Codes Intent Provide minimum standards
- Safe vs. Unsafe and the condition in-between all buildings governed by Administrative Code
 - Buildings shall be maintained **Safe**
- Evaluation vs. Repair
- Buildings are governed by the code at the time they were built:
 How does this help? Assessment and Evaluation
- Code Evolution: Integrated System vs. Desperate Systems
- Structural Specification: Prescriptive vs. Engineering, Materials
- Age vs. Environment vs. Material Science
 - Interior vs. Exterior, Brittle vs. Ductile
- Thresholds



Condition vs. Time: or Consideration





FISP3: Unsafe Notification Required

Notification of Unsafe Façades

QEWIs must immediately call 311 and then notify the Department when they discover unsafe conditions during a critical examination of a building façade by submitting an Unsafe Notification FISP3 form. Reports of unsafe conditions filed without a previously submitted FISP3 form may result in an Immediately Hazardous – Class 1 ECB violation issued to the QEWI filing the report.

90-day initial cure and submittal of Amended Report or FISP1 (90-day extension request).



Public Protection Required

Public Protection + Abatement

Owners must immediately install public protection, such as a sidewalk shed, when a façade inspection reveals an unsafe condition. The unsafe condition must be repaired within 90 days from the submission of the report. Owners must request an extension from the Department in accordance with1RCNY §103-04 (b)(5)(iv), if additional time is needed. Once the repairs have been completed, the QEWI must submit an amended report within two weeks of the work.

Removing Public Protection / early shed removals

Public protection must remain in place until repairs are completed and an acceptable amended report is filed. The QEWI must request permission to remove the sidewalk shed when the façade is made safe. The building owner will be issued an ECB violation if the protection is removed without permission.

Trends and FISP Review

- Objective move to SAFE status > five years => two cycles
- QEWIs have to outreach to owners especially UNSAFES and NRF's
- Reports being rejected because missing guards and handrail statements in Cycle-8
- SWARMPS being filed as SAFE and UNSAFE
- Terracotta / dimensioned stone: issue with cracks
- Fire escapes have to be checked for stability (Means of Egress => fire guards)
- NRFs generate substantial fines and highly risky



Building One City Plan

DOB is launching a new online portal that will allow building owners, design professionals, filing representatives, and licensees can create online accounts, making it easier to submit applications, make payments, schedule appointments, check the status of an application, pull permits, and make renewals.



BUILDING ONE CITY

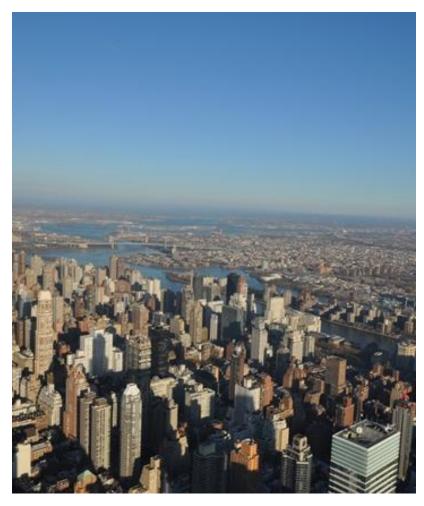
A Blueprint for Fundamental Transformation at the New York City Department of Buildings



May 2015



Submit Compliance Filings and Fees Online



Professional Engineers and QEWIs will have a more seamless way of submitting unsafe notifications online:

- Submit compliance filing and fees online
- Filings are easier to navigate
- View and search filings online
- Upload documents online
- Shared and easy to access information

Fee Schedule: Per Rule 103.04 Latest Version

Filing Fees

Initial Filing (Report + TR6)	\$265.00
Subsequent Report	\$100.00
Amended Report	\$100.00
Time Extension (FISP1, FISP 2)	\$135.00



Fee Schedule: Per Rule 103.04 Latest Version

Penalties

Late Penalty	\$250.00/month
Late Filing	\$1,000.00 annually
Failure to Correct Unsafe Condition	\$1,000.00



DOB – Who Owns the FISP Portfolio?

- LL Facade Unit: Admin unit and inspectors (35 yrs.) Filing LL Façade
- 2. Cranes and Derricks (C&D): Hanging Scaffold. CD-5. Filing/C&D
- 3. Scaffold Safety Team: call in: Inspectorial/SST
- 4. Sidewalk Shed: Filing; Alt 3. Borough Operations
- 5. Façade Repairs: Alt 2. Borough Operations: Sheds and Scaffolds
- 6. Unsafe/Incident: Time dependent and engages all of above



Introduction

- Where retaining walls are found in NYC
- Evolution of old codes and how they relate to ownership
- Types of retaining walls and how they work
- How retaining walls fail
- Current codes/rules
- Compliance with current Code



Retaining Walls in New York City

- Dense Urban Environment
- Mostly built late 19th/Early 20th Century
 - Aging materials (rubble stone)
- Demising walls
 - High Property/Low Property
 - Multiple Private Owners
- Municipal Retaining Walls (large stakeholders)
 - DOT
 - Parks
 - MTA

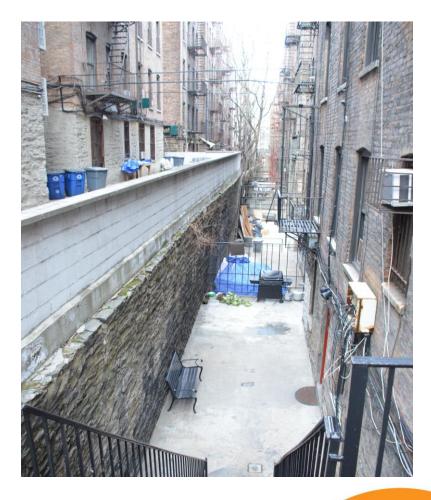


Property Lines











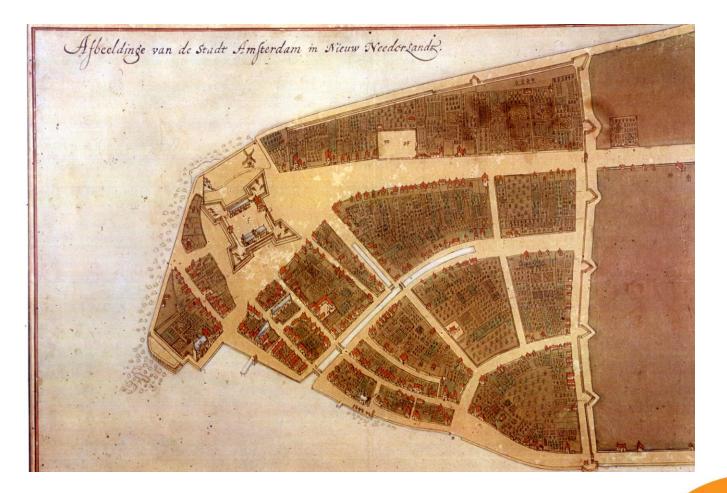
Lot/property lines first described

"...200 feet shall be staked off from the inside along all three sides, A, B, C, for the purpose of locating therein the dwellings of the farmers and their gardens, and what is left shall remain vacant for the erection of more houses in the future."

From: Special Instructions for Cryn Fredericksz Regarding the laying out of the fort April 22, 1625

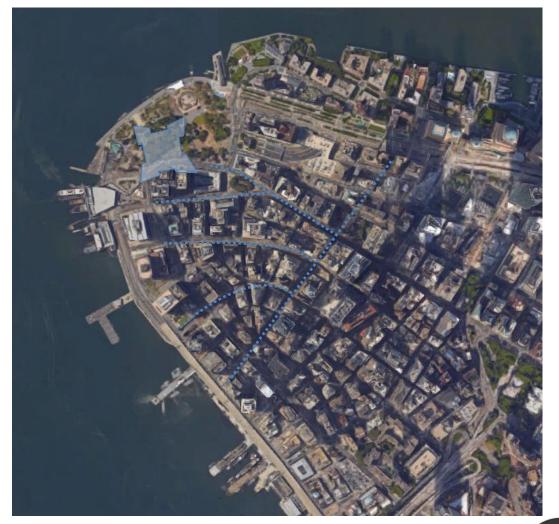


Earliest Lots in Manhattan





Still Around!





2016 BUILD SAFE CONFERENCE

§1 That whenever excavations hereafter commenced...shall be carried to the depth of more than ten feet below the curb, and there shall be any party or other wall...on adjoining land...near the boundary lines of such lot, the person causing such excavations to be made, if afforded the necessary license to enter on the adjoining land, ... shall at time from the commencement until the completion of such excavations, at his own expense, preserve such wall from injury, and so support the same by a proper foundation that it shall remain as stable as before such excavations were commenced.



First time retaining walls are mentioned in the Code

"When an excavation is made on any lot, the person or persons causing such excavation to be made shall build, at his or their own cost and expense, **a retaining wall to support the adjoining earth**; and such retaining wall shall be carried to the height of the adjoining earth, and be properly protected by coping. The thickness of a retainingwall at its base shall be in no case less than one-fourth of its height."



Article 11 – Partition Fences and Walls

§211. Retaining walls.

- Made and maintained jointly by land owners on each side of wall, located half on each property
- Owner maintaining ground higher or lower than legally required, surplus wall is his responsibility alone
- If wall standing partly on the land of each owner no longer required, either party may remove the wall
- Owner of lower grade bears cost of construction, wall to be erected entirely on higher grade property (legal trespass until 1938 only); maintained jointly

§213. Neglect to maintain. If one party does not agree to maintain his share of the wall, the other owner, if having performed repairs on his own, has a legal right to recoup costs of doing so

Article 12 – Excavations and Foundations

§237. Retaining Walls

 Addresses materials (masonry, concrete); loads to be considered (incl. water pressure); structural performance of wall (working stresses, soil bearing pressure, stability of wall)



History of Code Requirements: 1938 through 2008

1938 (as of 1939)

 Structural requirements refer to separate masonry and concrete chapters (allowable stresses)

1938 (amended to 1968)

First definition of retaining walls appears

§*C26-12S.0 Retaining Wall. The term* **retaining wall** shall mean any wall designed to resist lateral pressure.

 Owner causing excavation to build wall at his own expense on his own land

1968 (as of 1970)

- Engineering requirements becoming more honed
 - Lateral loads: earth, ground water pressure
 - Loading eccentricities

1968 (as of 2008)

- Lateral loads: earthquake loads required
- Sliding, overturning mentioned generally
 - Buildings and structures
 - Not specific to retaining walls



New York Code Building Code: Maintenance of Buildings

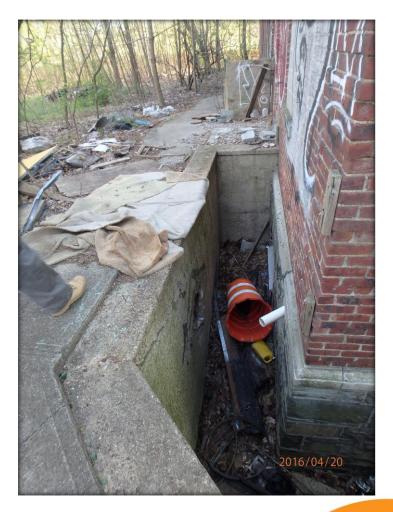
ARTICLE 301 GENERAL

§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 forth with 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.



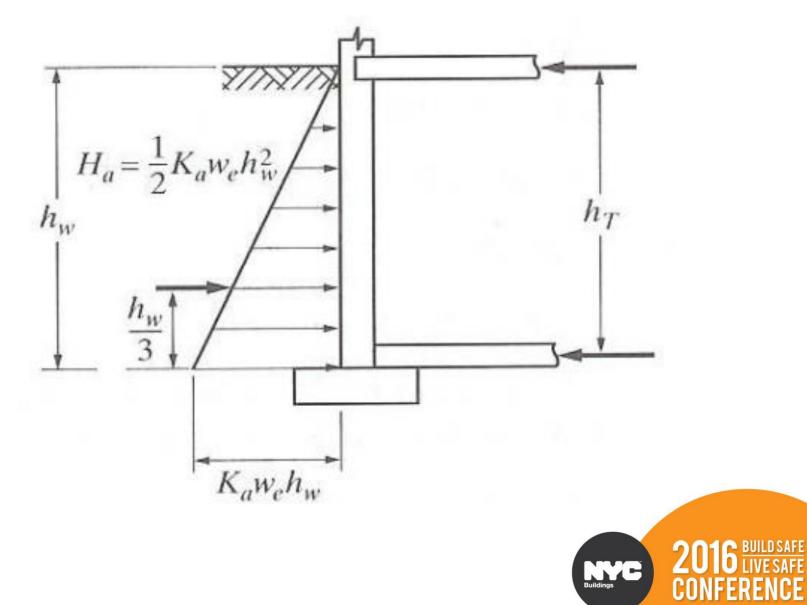
Restrained







Restrained



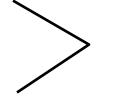
Gravity





How Retaining Walls Fail

- Deterioration of Wall Structure (Material Science Issue)
- Overturning
- Sliding

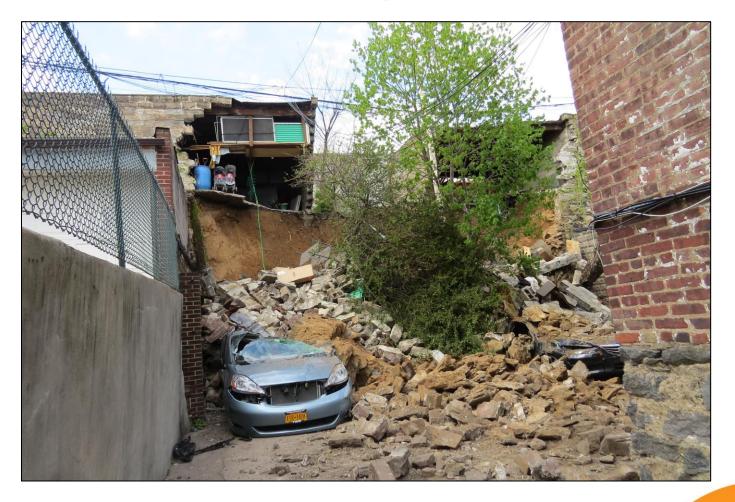


CAN RESULT FROM DETERIORATION OF STRUCTURE

Settlement of the Foundation



Overturning 20ft Wall





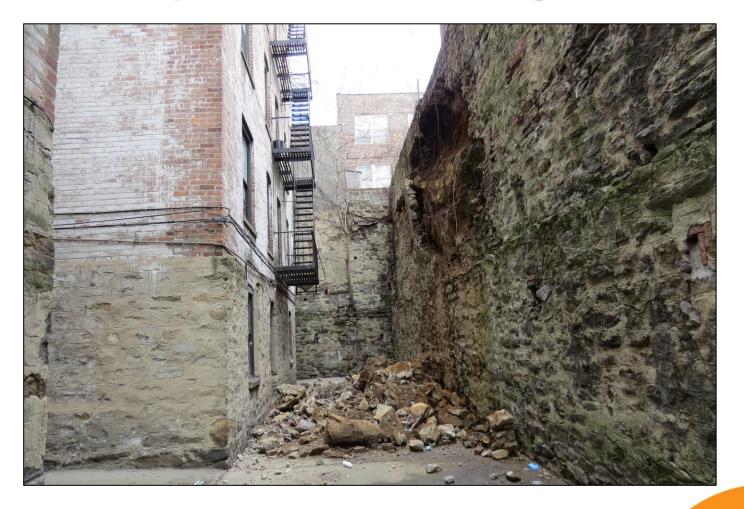
Wall Damages Lower Building





2016 BUILD SAFE LIVE SAFE CONFERENCE

Impact to Means of Egress





Local Law 37/2008

Inspection, Maintenance and repair of retaining walls...

- with a height of 10ft or more, and...
- facing a public right of way
- Condition assessment every 5 years by *Qualified Retaining Wall Inspector* (licensed PE with min. of 3 years experience)
- Submit report to DOB

Becomes §28-305.4 in 2008 Building Code*

*Effective February 9, 2009



RCNY §103-09

Retaining Wall Inspections, Filing Requirements, Penalties & Waivers

Report Requirements – Overview

- General information: property profile and owner
- Description of any work done since previous report
- Scope and procedures of condition assessment
- Cross section: construction type, surface/arch. treatment, exposed wall height, etc.
- Areas of significant distress with photos/analysis of cause
- Final wall rating:
 - SAFE
 - SAFE WITH REPAIR AND/OR ENGINEERING MONITORING
 - SAFE WITH MINOR REPAIRS OR MAINTENANCE
 - UNSAFE



RCNY §103-09: Filing Cycles & Fees

Inspection every five (5) years unless safety issues exist Staggered filing cycles by borough

- 2014: Bronx
- 2015: Manhattan
- 2016: Staten Island
- 2017: Queens
- 2018: Brooklyn

Fee structure:

Initial Filing	\$355
Amended Filing	\$130
Extension of time to complete repairs	\$260

Reports must be submitted electronically by an engineer



TR 16: Affidavit of Conditions

6	Property Owner Information	Private Pa	arks 🗌 DOT	Other P	Public	
Last	Name	First N	lame			MI
Bus.	Name	Bus. Add	fress		Bus. 1	Tel.
	City	State	Zip		Bus. F	ax
	E-Mail				Mobile Pho	one .
7	Statements and Signatures					
	er / Owner Representative				Qualified Retaining Wall Inspe	ctor (QRWI)
ne at nd I	by state that I am the owner/owner's tached report. Furthermore, I have r am aware of the required repairs an rame for same as per New York City 08.	eceived and read a c d/or maintenance, if	copy of the at any and the r	tached report ecommended	Name (please print) Signature I hereby state that the Owner / C has authorized me to submit this hereby state that all statements	report. Furthermore, I

ful for any person to make a material false statement in any certificate, professional certification, form, signed statement, application, report or certification of the correction of a violation required under the provisions of this code or any rule of any agency promulgated thereunder that such person knew or should have known to be false.

QRWI must inform OWNER of inspection conditions



RCNY §103-09

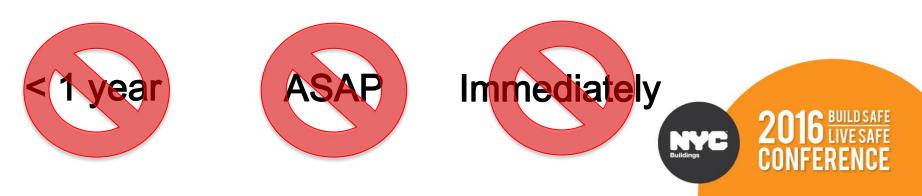
Retaining Wall Inspections, Filing Requirements, Penalties & Waivers

Safe with Repair and/or Engineering Monitoring

- Identify proposed monitoring program
- Identify engineer performing the monitoring
- Stability analysis with factor of safety showing the wall is stable under anticipated loads

Safe with Minor Repairs or Maintenance

- Recommend time frame for repairs and/or maintenance to prevent condition from becoming unsafe
- Unacceptable time frames



RCNY §103-09 Retaining Wall Inspections, Filing Requirements, Penalties & Waivers

UNSAFE

Immediately

 Owner to commence repairs/reinforcements to secure public safety

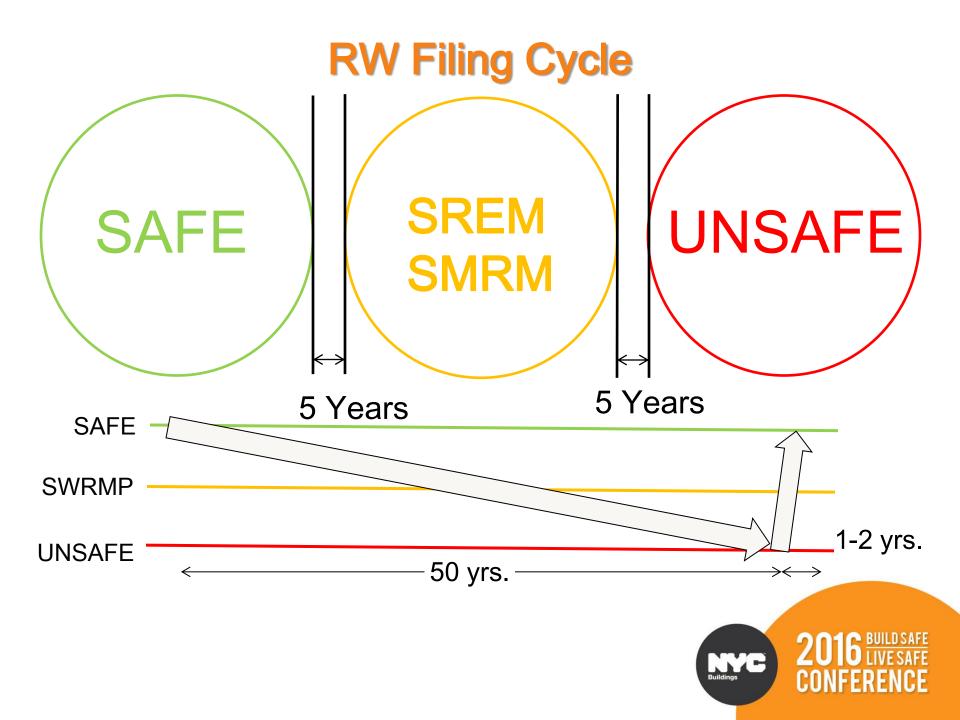
Within 24 hours

- Call 3-1-1 (212-NEW-YORK)
- Call DOB with 3-1-1 complaint number

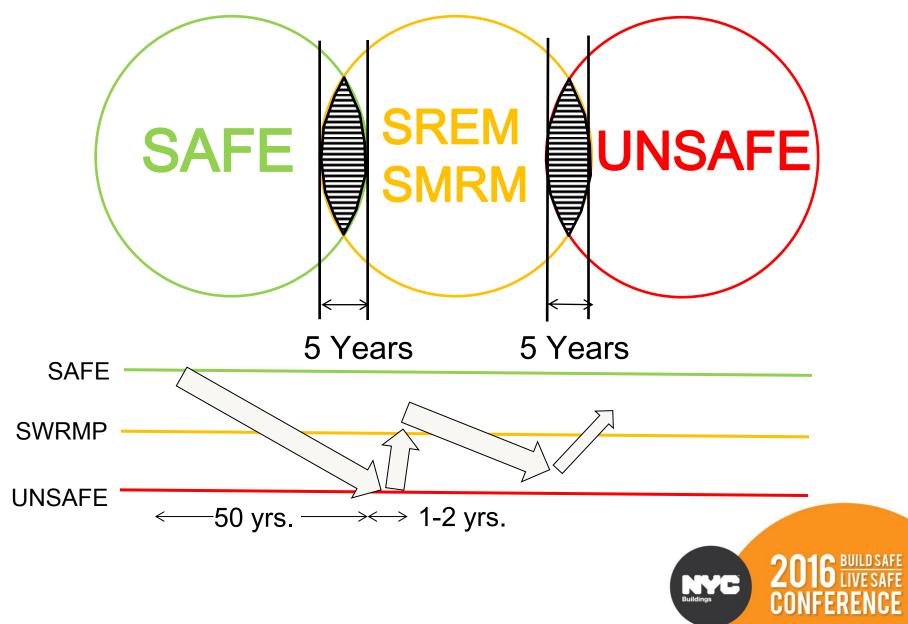
Within 2 weeks

 QRWI to inspect, obtain permit sign-offs, file an amended report with the Department





RW Cycle in Reality



RCNY §103-09: Civil Penalties

- \$1,000 per year for failure to file plus
- \$250 per month penalty until compliance
- Failure to repair an unsafe condition carries a \$1,000 per month fine until corrected



No-Penalty Retaining Wall Inspection Program 2016

- May 15th June 25th
- Owners of private retaining walls call 3-1-1 to request free inspection/evaluation
- No issuance of ECB violations during this period
- Coordinated by IES (Yegal Shamash, P.E.)
- IES will send notification to property owners of inspection findings and compliance suggestions



Don't Let This Happen to You









This concludes the American Institute of Architects Continuing Education Systems Course.

Department Contact for AIA: Allison Ginsburg <u>Aginsburg@buildings.nyc.gov</u>, 212-393-2167

© 2016 New York City Department of Buildings

