

2017



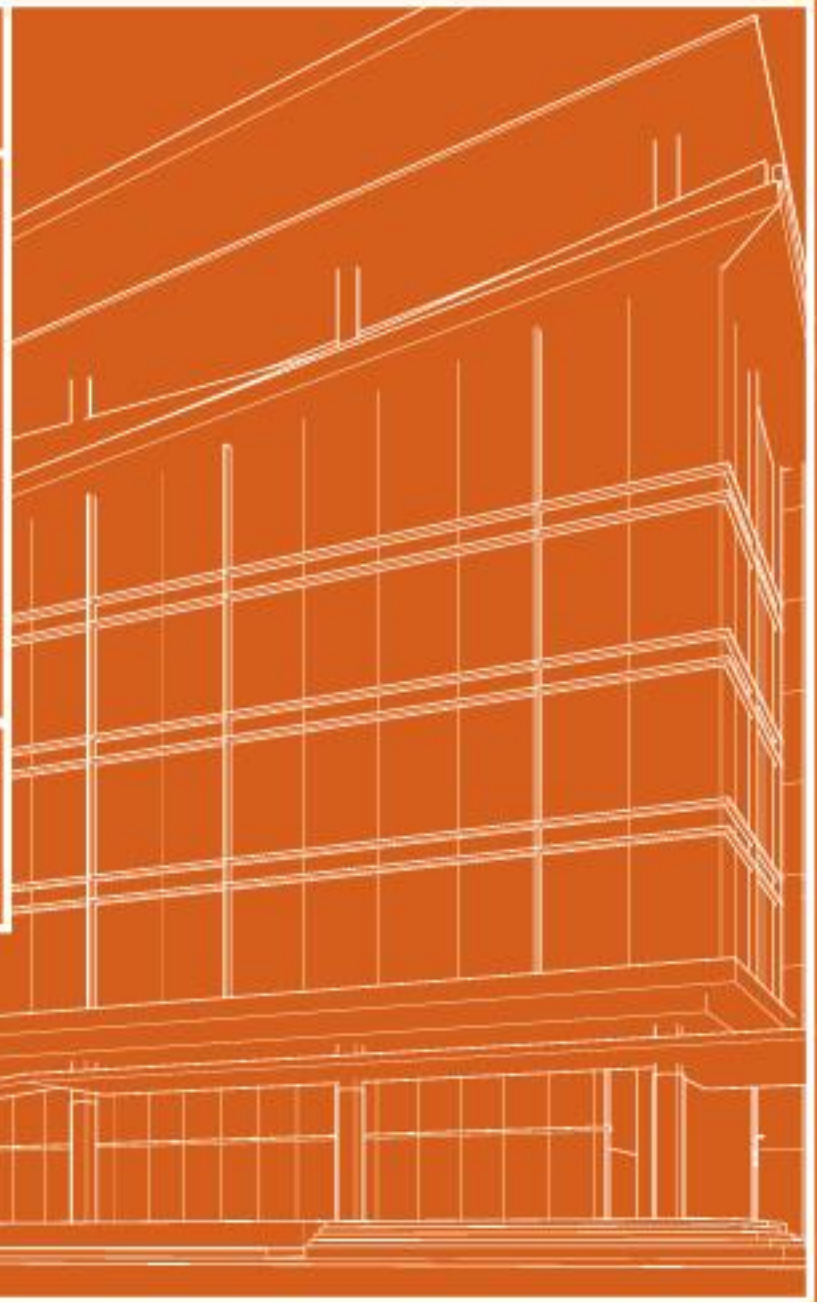
Special Topics in Construction Safety

Course Number SW0317

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May 3, 2017

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



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COURSE DESCRIPTION

The course will consist of three segments related to construction safety.

- The first segment will describe engineering principles used in evaluating and assuring structural integrity of existing party wall construction in buildings undergoing alteration or demolition.
- The second segment will discuss specific requirements for assuring tenant safety in occupied multiple dwellings.
- The third segment will focus on NYC Building Code requirements related to loads on temporary installations.



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LEARNING OBJECTIVES

At the end of the this course, participants will be able to:

1. Participants will discuss and be able to understand how to identify party walls prior to construction and special requirements related to demolition of party walls.
2. Participants will learn special conditions for erection of new buildings adjoining party walls.
3. Participants will review and be able to understand NYC building code requirements related to loads on temporary installations.
4. Participants will review and be able to prepare a tenant protection plan to assure the safety of building occupants during construction operations.



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PARTY WALLS IN NEW YORK CITY



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PARTY WALL



A fire division on an interior lot line common to two adjoining buildings



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PARTY – WORD ORIGIN

King Alisaunder, 4756; *parti*, *party*, Cursor Mundi, 7470. = F. *partie*, 'a part, share, party, side;' Cot. We also find F. *parti*, 'a match, bargain, party, side;' Cot. The former is the fem. of the latter. = Lat. *partita*, fem. of *partitus*, pp. of *partiri*, to divide. = Lat. *parti*, crude form of *pars*, a part. See Part. Cf. Ital. *partita*, a share, part; Span. *partida*, a party of soldiers, crew, &c. Der. *party-coloured*, Merch. Ven. i. 3. 89; *party-verdict*, Rich. II, i. 3. 234.

- Walls
- Foundations
- Retaining Walls



PARTY WALL

Encyclopedia Diderot 1765

Party wall, the wall separating two adjoining houses.

However our common law, and particularly in Paris, includes many other principles, several of which follow.

When a man has a house built, if he does not leave an empty space on his own property, then he cannot prevent his wall becoming a party wall between him and his neighbor, who can erect his building against this wall, provided that he pay half the cost of the wall and of the land on which the wall sits.

Neither owner of the party wall can have anything done to it without the agreement of his neighbor, or without at least having served him legal notice.

Either neighbor may require that the other help pay for repairs to the party wall, according to the share of the wall adjoined by his building and the cost of repairs to that part



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HISTORIC FIRES LEADING TO MASONRY WALLS REQUIRED WITHIN FIRE LIMITS



London 1666



NYC 1835



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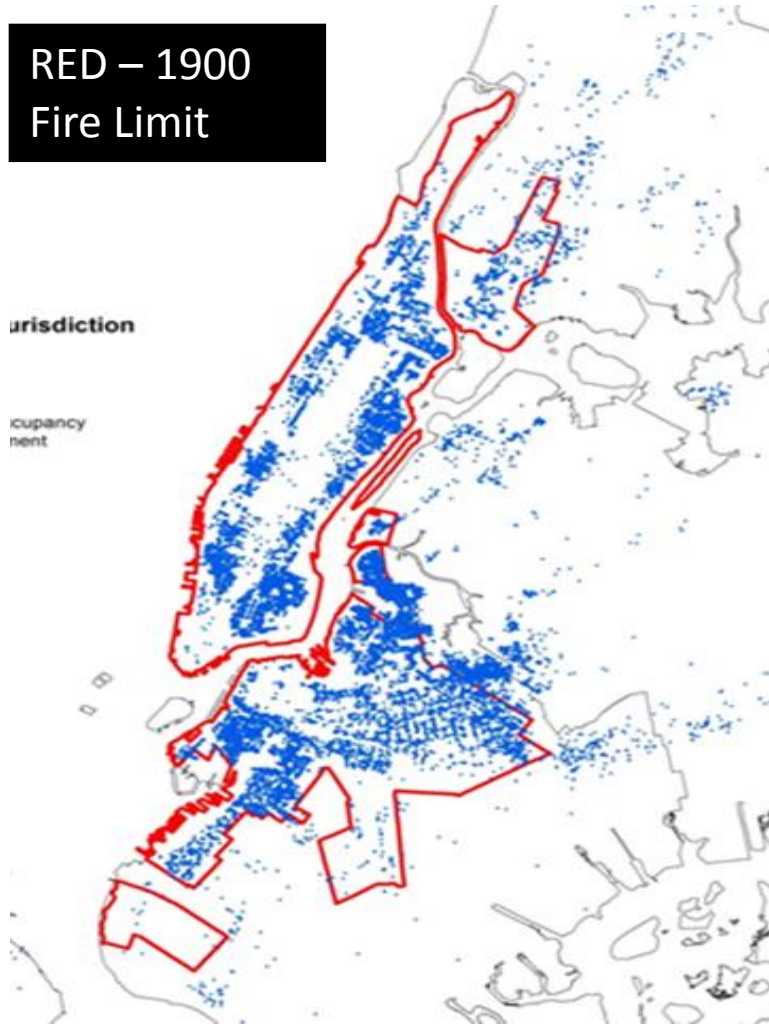
PARTY WALL: NYC FIRE LIMITS | NYS LAWS

- **1813** – *Shall be made and constructed of stone or brick, with party and fire walls, rising at least six inches above the roof, and shall be covered, except the flat roof thereof, with tile or slate.*
- **1849** – 100 hundred feet North of 32nd Street; outside or party walls constructed of stone or brick or other fire proof materials
 - 12” if over 35 ft. in height
 - 8” if less than 35 ft.

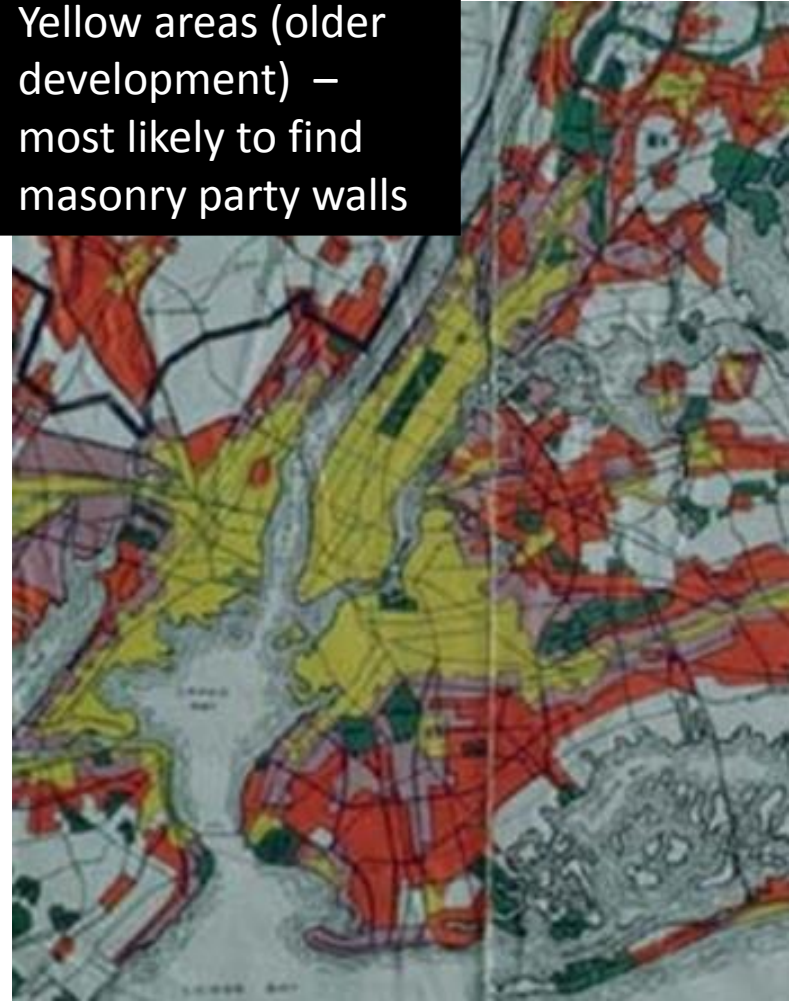


PARTY WALL: FIRE LIMIT & NYC DEVELOPMENT

RED – 1900
Fire Limit



Yellow areas (older
development) –
most likely to find
masonry party walls

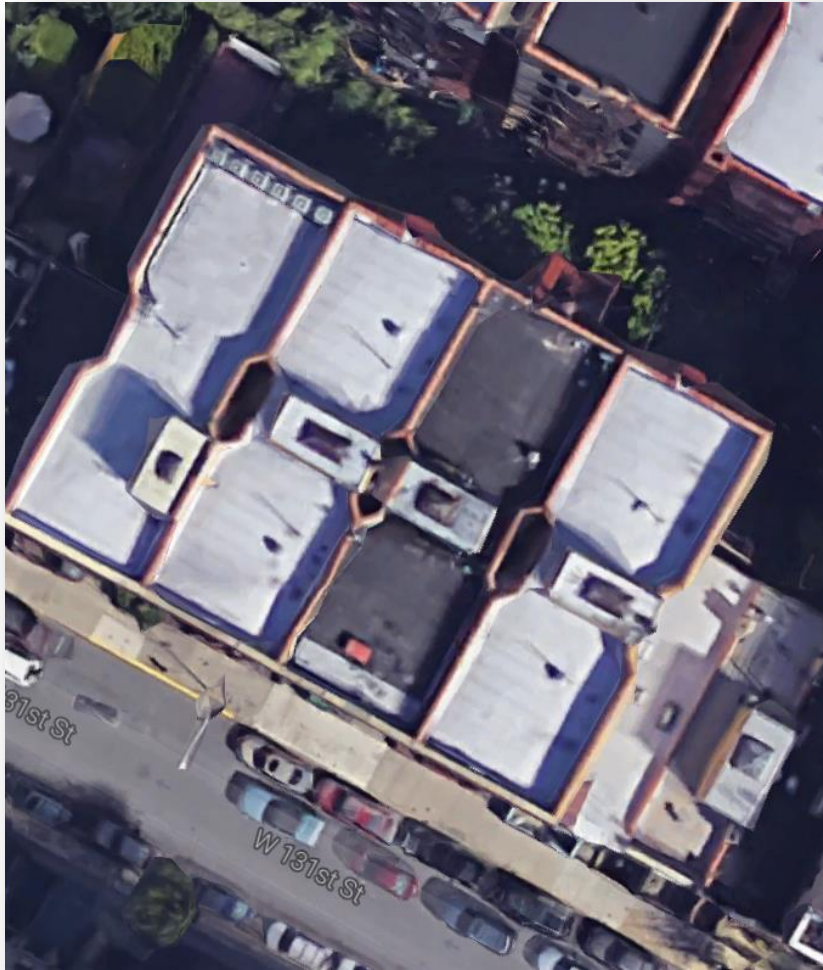


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PARTY WALL: TYPICAL DEVELOPMENT



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TYPICAL EXPOSED PARTY WALL



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PARTY WALL: NOGGING WALLS



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PARTY WALL: NYC ADMIN PROVISIONS

§28-306.1 *Responsibility for party walls. Repair and maintenance of the construction, design and fire-resistance rating of party walls shall be the joint responsibility of the owners of the adjoining properties, and any change by either owner must maintain the weather protection, structural, vertical fire division and other requirements of this code for party walls.*

§28-306.2 *Safeguards during construction or demolition. Refer to section BC 3309 of the New York city building code for additional requirements for the maintenance of party walls during construction or demolition operations.*



PARTY WALL: RESTRICTIVE DECLARATION

See Building Bulletin 2015 -08

*Declarant states that each such Building having a Party Wall will be subject to the terms and provisions of **Section 28-301.1** of the 2008 Building Code and either:*

- *Section 27-332 of the 1968 Building Code or*
- *Section BC 705(6) of the 2008 or 2014 Building Code, as applicable*



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PARTY WALL: RESTRICTIVE DECLARATION

§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



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PARTY WALL

§[C26-503.2] 27-332

The construction, design, and fire-resistance rating of party walls shall be the same as required by this code for vertical fire divisions. Concealed spaces in cornices and eaves shall be fire-stopped as a continuation of the party wall.



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PARTY WALL

706.1.1

Any wall located on a property line between adjacent buildings, which is used or adapted for joint service between the two buildings, shall be constructed as a fire wall in accordance with Section 706, and shall create separate buildings

706.2 Structural stability. *Fire walls shall have sufficient structural stability under fire conditions to allow collapse of construction on either side without collapse of the wall for the duration of time indicated by the required fire-resistance rating.*



FIRE WALL NYCBC

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.



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PARTY WALL RESTRICTIVE DECLARATION

Building Bulletin 2015 -08 (continued)

3. The Party Walls shall be used and maintained as party walls forever and Declarant and Declarant's heirs, legal representatives, successors, assigns and transferees shall be licensed and permitted to enter into the Buildings to make necessary excavations for the construction, maintenance and repair of the Party Walls;
4. The Party Walls, or portion or portions thereof, shall not be demolished, removed or altered without prior Department approval of an application for permit to demolish either of the Buildings and/or alter or remove all or part of the Party Walls, and application plans must clearly indicate the existing and proposed condition of the Party Walls



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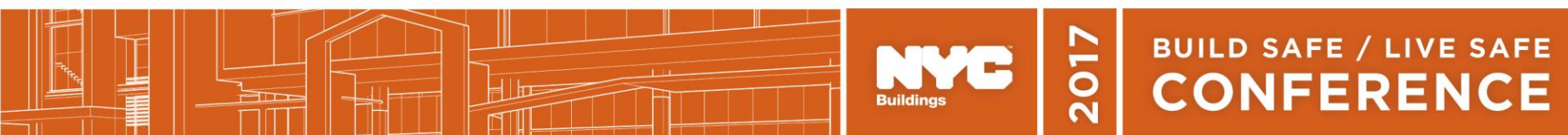
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PARTY WALL: NOTIFICATIONS

3306.3 Notification

3306.3 Notification. The permit holder shall notify the department and adjoining building owners prior to the commencement of full and partial demolition operations in accordance with Sections 3306.3.1 and 3306.3.2.

3306.3.2 Notification of adjoining property owners. Adjoining property owners shall be notified of upcoming demolition operations in writing not less than 10 days prior to the scheduled starting date of the demolition. The written notice shall provide a description of the work to be performed, the timeframe and schedule, and contact information of the person causing the demolition and of the department. Demolition or removal work that is to be done with the use of explosives shall also be subject to the notification requirements set forth in the New York City Fire Code.



PARTY WALL

3309.4 Soil or foundation work affecting adjoining property

Whenever soil or foundation work occurs, regardless of the depth of such, the person who causes such to be made shall, at all times during the course of such work and at his or her own expense, preserve and protect from damage any adjoining structures, including but not limited to footings and foundations, provided such person is afforded a license in accordance with the requirements of Section 3309.2 to enter and inspect the adjoining buildings and property, and to perform such work thereon as may be necessary for such purpose. If the person who causes the soil or foundation work is not afforded a license, such duty to preserve...



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PARTY WALL

Engineering Party Wall Guidance

FEMA 547 Techniques for the Seismic Rehabilitation of Existing Buildings justifies its **lack of guidance**: For conditions along property lines or involving party walls, the two buildings likely have different ownership, and **practical and legal issues may be more significant than technical ones.**



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FAILED PARTY WALL - BASEMENT WORK



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PARTY WALL UNSECURED (NO ANCHORAGE)



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PARTY WALL: BULGE & CRACK



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PARTY WALL



NOTE – there was no tie façade to floor!!



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PARTY FOUNDATION CUT: WALL LEAN



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PARTY WALL: DEVELOPING A STRUCTURE ALONG A PARTY WALL



- Design
- Demolition
- Excavation
- Construction



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PARTY WALL

Developing along existing party walls

- 1912 Kidder Parker Handbook “when buildings of skeleton construction are erected without a party wall agreement it is usually impossible to obtain a symmetrical foundation directly under the columns supporting the side or party wall”
- “Where an existing party wall is to be incorporated in a new building of skeleton or curtain wall construction, the vertical extension of the existing party wall shall be supported entirely by columns and girders...”



1915 NATIONAL BUILDING CODE BY THE NATIONAL BOARD OF FIRE UNDERWRITERS

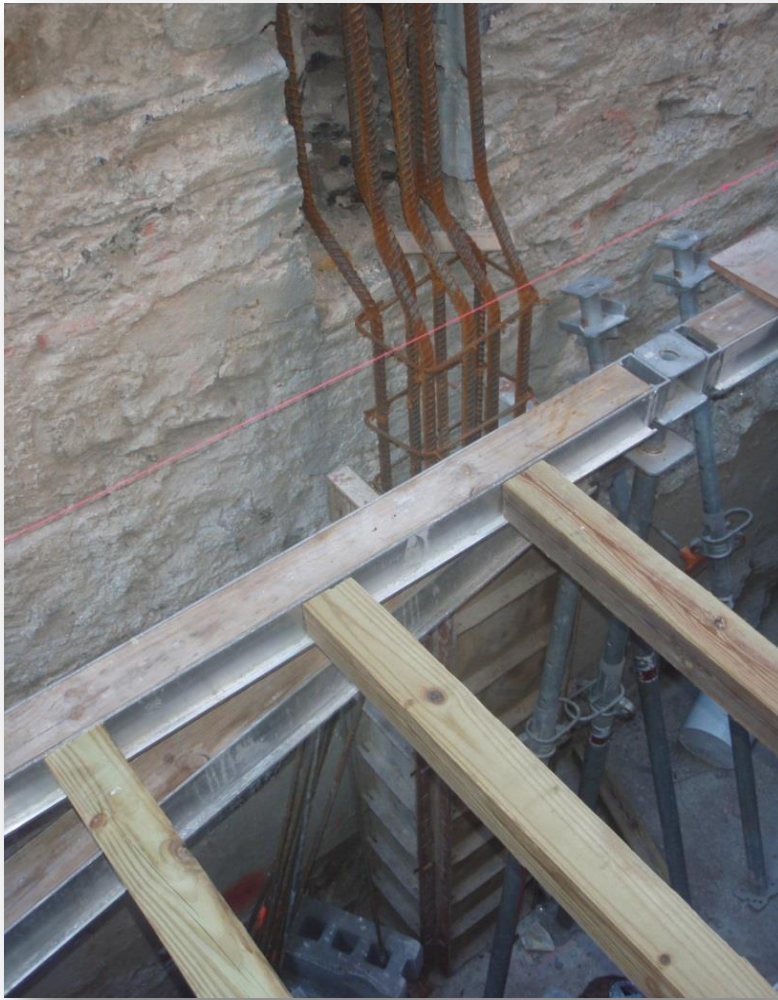
Section 32. Existing Walls.

1. Where an existing party wall is to be incorporated in a new building of skeleton or curtain wall construction, the vertical extension of the existing party wall shall be supported entirely by columns and girders and not by the party wall below, except that such existing party wall may be extended vertically to the height permitted by this Code for its existing thickness, if written approval for such extension is given by the Superintendent.

2. Should it be desired to increase the height of other existing party or independent walls, which are less in thickness than required under this Code, this shall be done by lining with brickwork to form a combined thickness with the old wall of not less than 4 inches more than the thickness required for a new wall corresponding with the total height of the wall when so increased in height. Such lining shall be supported on proper foundations and carried up to such a height as the Superintendent of Buildings may re-



PARTY WALL –UNACCEPTABLE PENETRATIONS

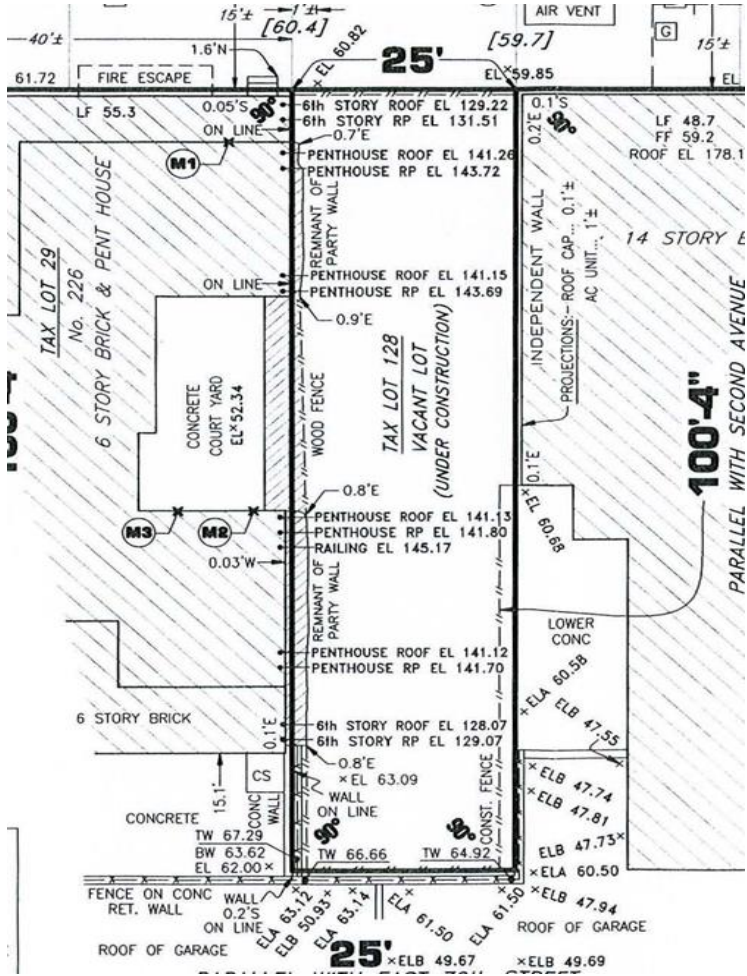


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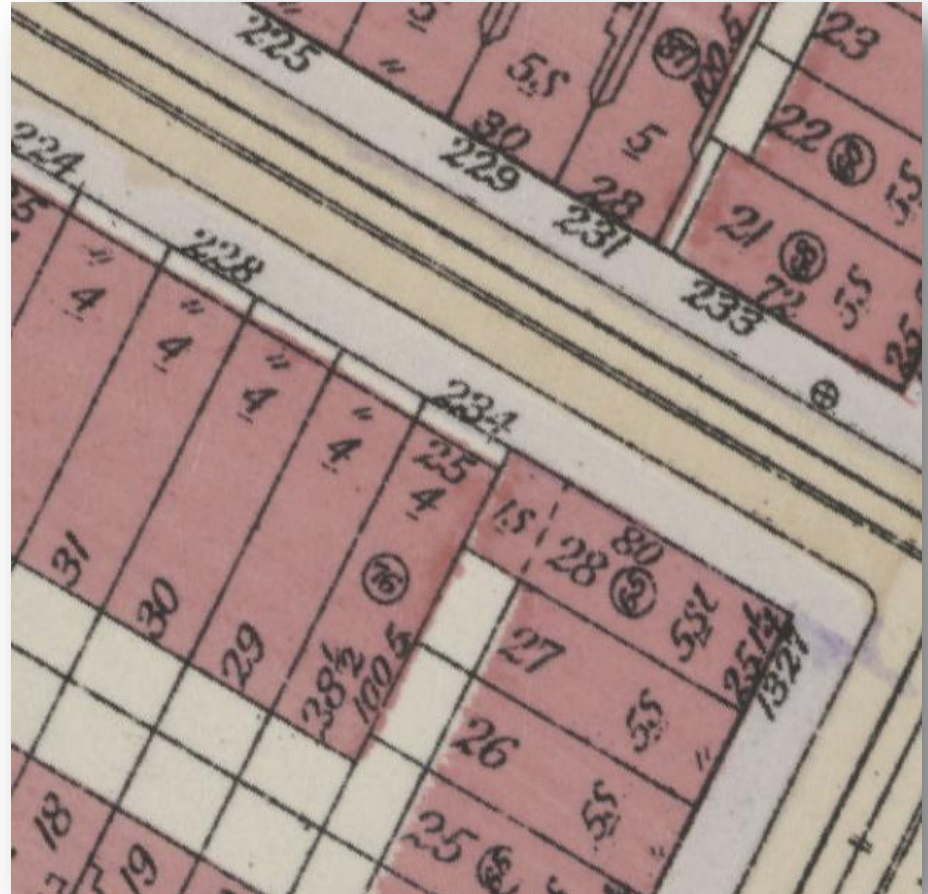
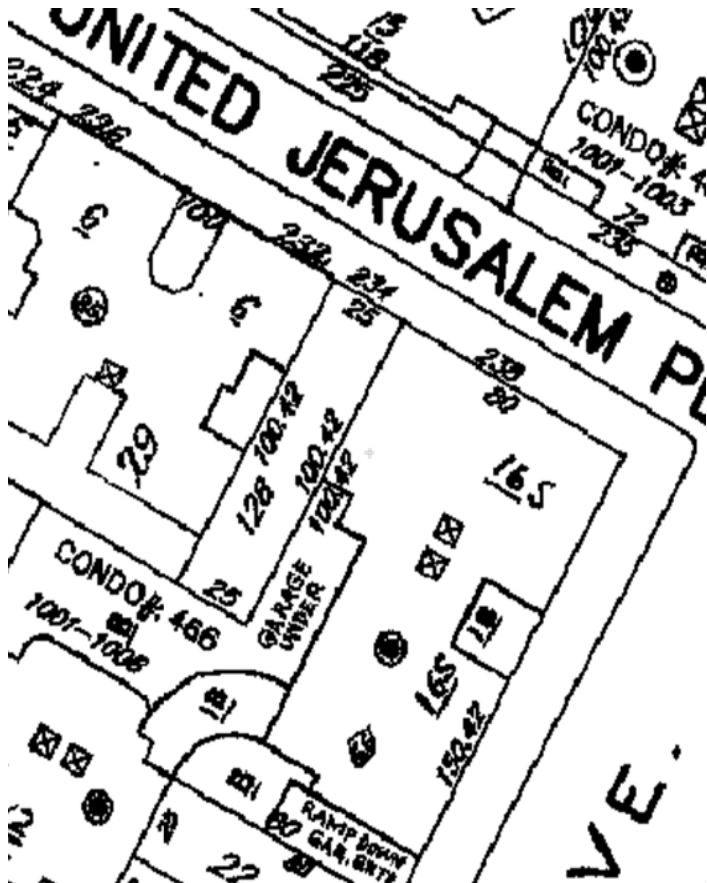
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**SURVEY WAS TAKEN ONLY AFTER
CONSTRUCTION DAMAGED PARTY WALL**



HISTORY- EXAMINATION OF FIRE INSURANCE MAPS MAY HELP



PARTY WALL

3306.9.11.4 Examination of party walls. (Demolition)

Party walls shall be carefully examined by a competent person designated by the permit holder to ascertain the condition and adequacy of the party wall prior to the placement of any material that will impose a load upon such party wall. If the party wall is to be found to be in poor condition or inadequate to support the stored material, no material shall be deposited on the floor until the party wall is shored or otherwise strengthened as determined by a registered design professional to safely support such material



PARTY WALL

3306.9.11.3 Cellar or basement storage. (Demolition)

Debris stored in the cellar or basement shall not be piled above the level of the adjacent exterior grade unless the demolition contractor provides sheet-piling, shoring, bracing, or such other means necessary to insure the stability of the walls and to prevent any wall from collapsing due to horizontal loading created by the debris as determined by a registered design professional. Where debris is stored against a party wall, the requirements of Section 3306.9.11.4 shall also apply.



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PARTY WALL

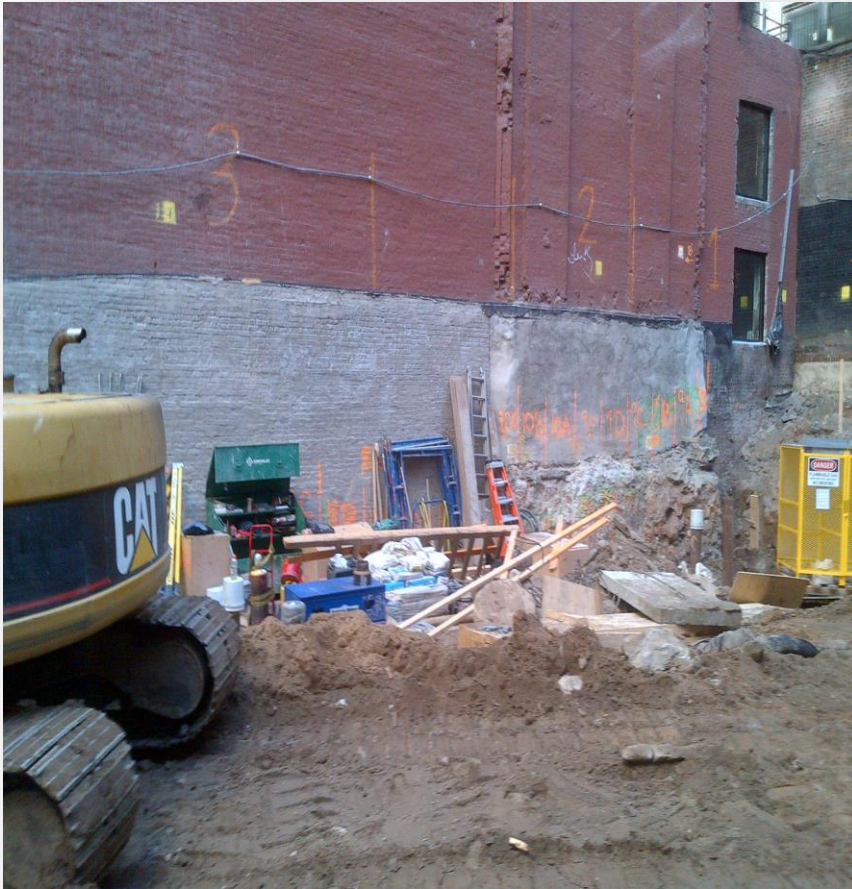
3309.4.2 Support of party walls

Where a party wall will be affected by excavation, regardless of the depth, the person who causes the excavation to be made shall preserve such party wall at his or her own expense so that it shall be, and shall remain, in a safe condition. Where an adjoining party wall is intended to be used by the person causing an excavation to be made, and such party wall is in good condition and sufficient for the uses of the existing and proposed buildings, it shall be the duty of such person to protect such party wall and support it by proper foundations, so that it shall be and remain practically as safe as it was before the excavation was commenced.



UNDERPINNING OF AN OLDER PARTY WALL UNDERPIN

- ACCIDENT



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CONSTRUCTION ADJOINING PARTY WALL

3309.8 Adjoining walls.

When any construction or demolition operation **exposes or breaches** an adjoining wall, including load bearing and non load-bearing walls as well **as party walls and non party walls**, the person causing the construction or demolition operation shall, at his or her own expense, perform the following:

1. Maintain the structural integrity of such walls and adjoining structure, and have a registered design professional investigate the stability and condition of the wall and adjoining structure, and take all necessary steps to protect such wall and structure.



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DEMOLITION - PARTY WALL

3309.8 Adjoining walls. (continued)

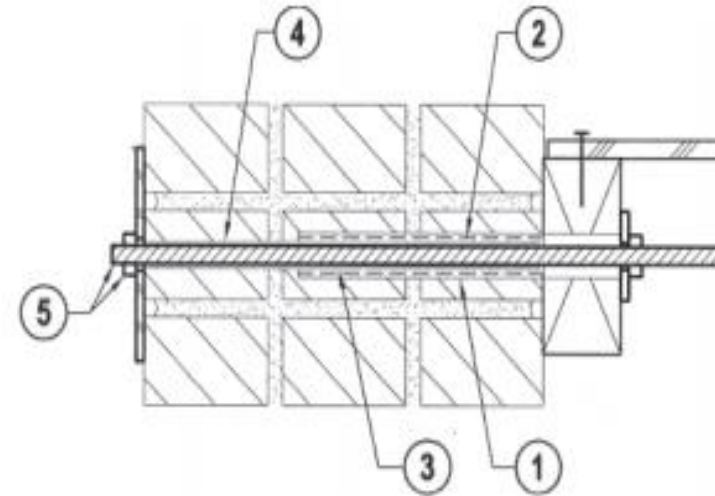
2. Maintain all required fire exits and passageways or provide substitutions meeting the requirements of this code.
3. Cut off close to the walls all beams in party walls, remove stub ends without weakening existing masonry, clean beam pockets of loose mortar, bend over all wall anchors at the beam ends in the standing wall, and brick-up all open beam holes with sound brick and cement mortar.
4. During demolition operations, where the floor beams of the adjacent building bear on the party wall, the person causing the demolition shall ascertain that such beams are anchored into the wall and, where such anchorage is lacking, shall provide anchorage or otherwise brace the standing wall.



ANCHORING PARTY WALL

During demolition operations, where the floor beams of the adjacent building bear on the party wall, the person causing the demolition shall ascertain that such beams are anchored into the wall and, where such anchorage is lacking, shall provide anchorage or otherwise brace the standing wall.

■ **Figure 30. Generic wall-diaphragm connection retrofit detail.** —FEMA 547, *Techniques for the Seismic Rehabilitation of Existing Buildings*



1607.13 Interior walls and partitions. Interior walls and partitions that exceed 6 feet (1829 mm) in height, including their finish materials, shall have adequate strength to resist the loads to which they are subjected but not less than a horizontal load of 5 psf (0.240 kN/m²).

Obviously exterior walls...



PARTY WALL

1938 BC - (8.4.1.4). §C26-416.0 Anchorage of Masonry Walls

- a. Masonry walls shall be anchored, at maximum intervals of four feet, to each tier of joists or beams bearing on such walls by metal anchors having a minimum cross-section of one-quarter of an inch by one and one-quarter inches, and a minimum length of sixteen inches, which anchors shall be securely fastened to the joists or beams and shall be provided with split anti upset ends or other approved means for building into masonry.
- b. Masonry walls parallel to joists or beams shall be provided, at maximum intervals of six feet with similar anchors engaging three joints or beams. Girders shall be similarly anchored at their bearings. Upset and “T” ends on anchors shall develop the full strength of the anchor strap.



PARTY WALL: ANCHORED TO STEEL FRAME



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PARTY WALL

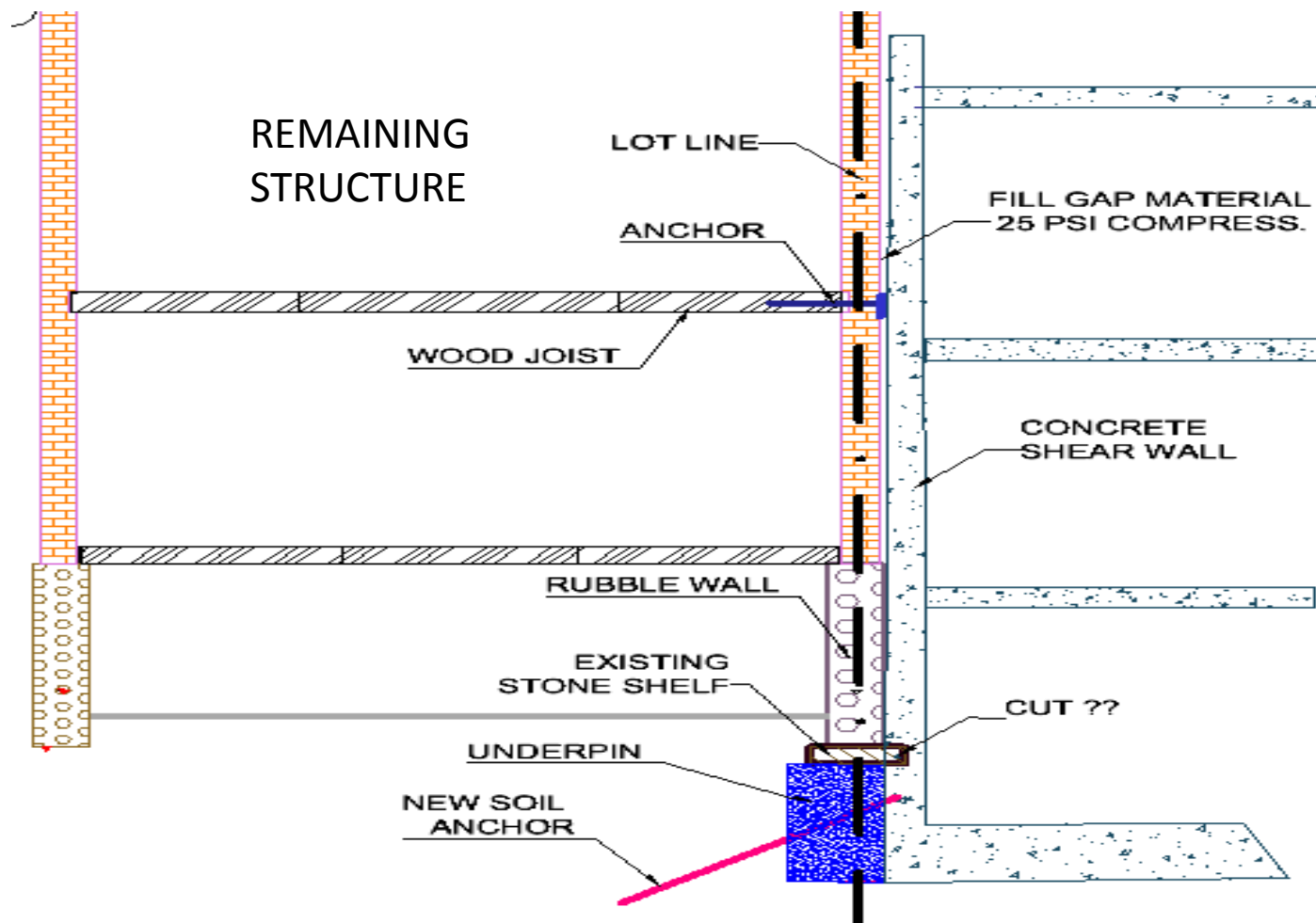
3309.8 Adjoining walls. (continued)

5. During demolition operations, all non load-bearing chimney breasts, projections and any other debris exposed on party walls shall be examined and monitored by the person causing the demolition. Removal of such items shall be made under the supervision of a registered design professional only if the stability of the adjacent building or structure will not be affected.

All openings shall be bricked up flush on the exterior side of the party wall. All masonry that is in poor condition shall be pointed and patched.



TYPICAL CONDITION – DEVELOPMENT AT PARTY WALL



PARTY WALL

3309.9 Weatherproof integrity of adjoining buildings.

Where the waterproof integrity of an adjoining wall or building has been impaired due to construction or demolition operations, the person causing the construction or demolition operations shall, at his or her own expense, provide all necessary measures to permanently waterproof the adjoining wall or building in order to establish or restore the weatherproof integrity of such adjoining wall or building. This shall include, but is not limited to:

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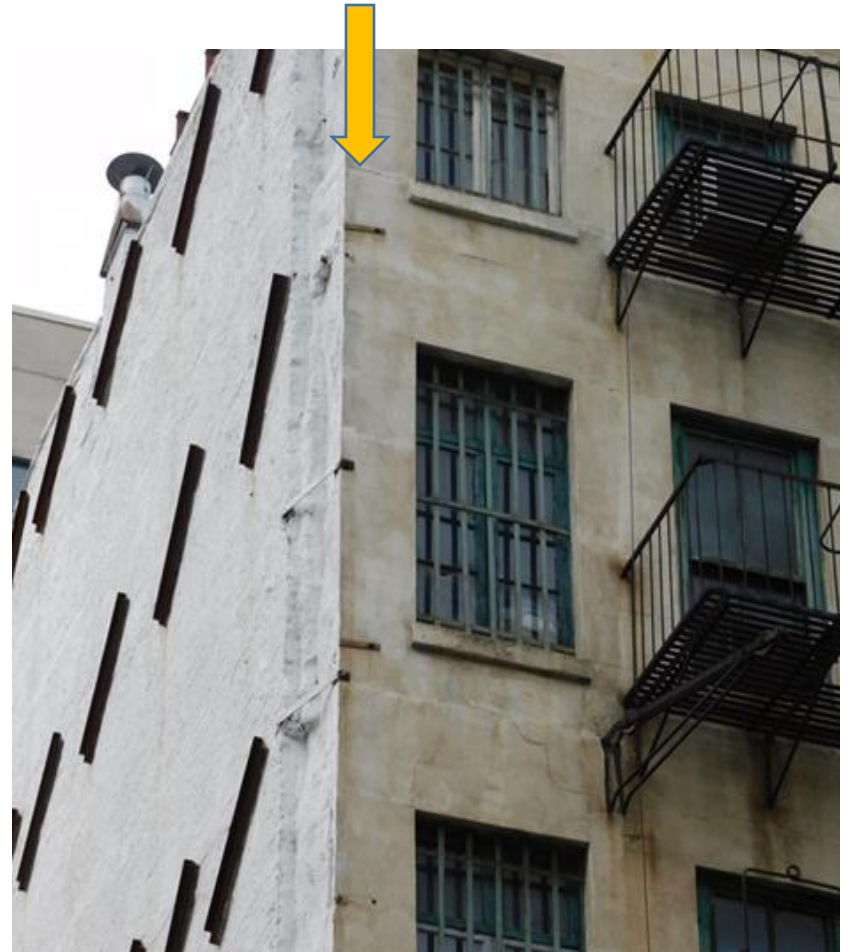
PARTY WALL

3309.9 Weatherproof integrity of adjoining buildings. (continued)

1. Bending over and flashing all roofing material of adjoining buildings;
2. Sealing and permanently waterproofing all doors or other openings in party walls;
3. Properly sealing all cornices, where cut;
4. Pointing up and making waterproof any walls and parapets and any walls that have been disturbed;
5. Removing all exposed furring, lath, and plaster on party walls; and
6. Removing, replacing, and firmly anchoring any loose wall material.



PARTY WALL CORNER ATTACHEMENT

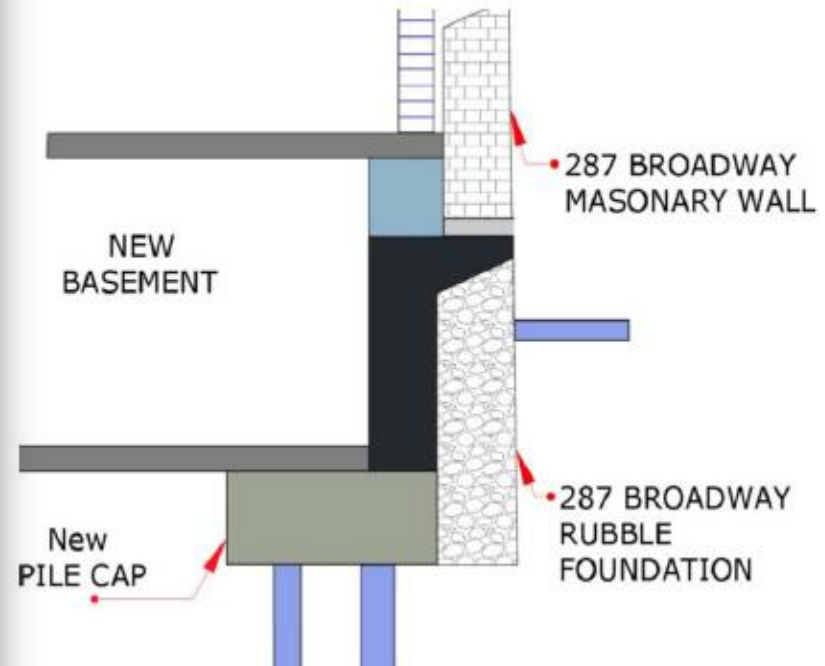


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PARTY WALL



PARTY WALL

ASCE 41-Seismic Evaluation and Retrofit of Existing Buildings for public comment

- C3.2.5.1 Building Pounding Building pounding can alter the basic response of the building to ground motion and impart additional inertial loads and energy to the building from the adjacent structure. Of particular concern is the potential for extreme local damage to structural elements at the zones of impact, particularly where the floor and roof levels of adjacent building do not align in height.
- C3.2.5.2 Shared Element Condition Buildings sharing common elements, such as party walls, have several potential problems. If the buildings attempt to move independently, one building may pull the shared element away from the other, resulting in a partial col-lapse. If the buildings behave as an integral unit, the additional mass and inertial loads of one structure may result in extreme demands on the seismic-force-resisting system of the other. All instances of shared elements should be reported to the building owner, and the owner should be encouraged to inform adjacent building owners of identified hazards.



PARTY WALL



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ASSURING TENANT SAFETY DURING CONSTRUCTION



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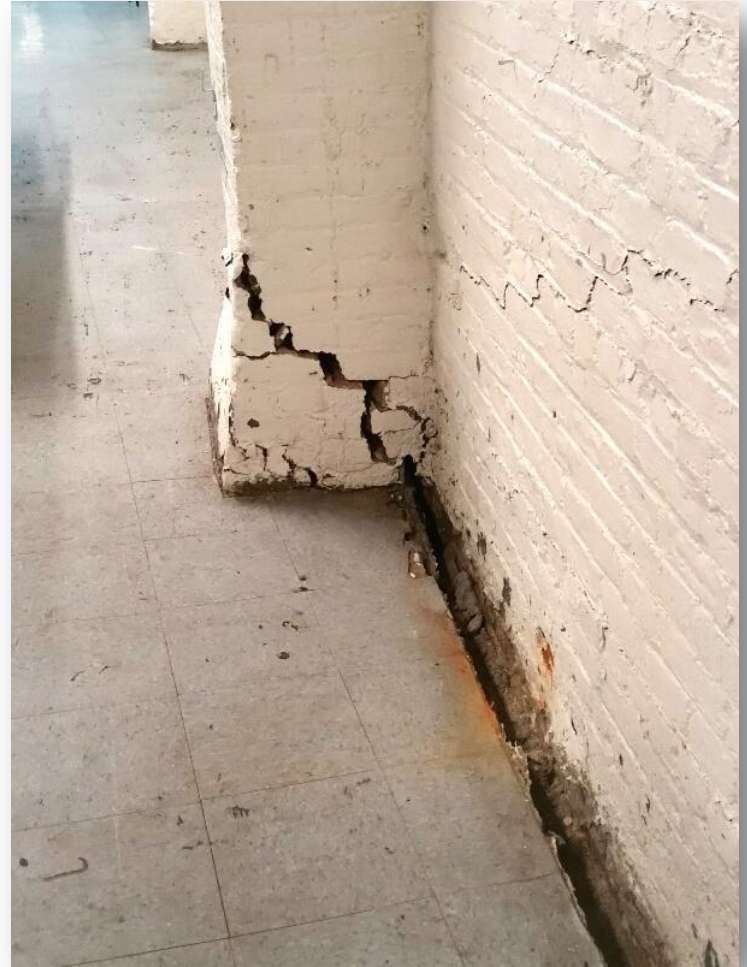
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TOPICS FOR DISCUSSION

Specific requirements for assuring tenant safety in occupied multiple dwellings during construction operations

- **Assuring** Tenant Safety
- **Occupied** Multiple Dwellings
- **During** Construction Operations

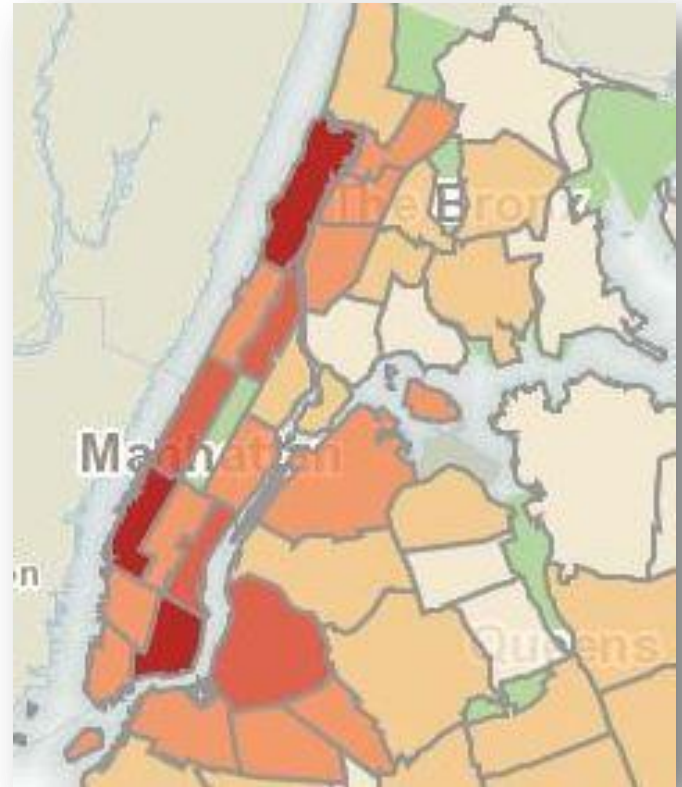


ASSURING TENANT SAFETY

When does lack of tenant safety become harassment?

Construction as Harassment *(managed through Tenant Protection Plan)*

- Deliberately causing construction related problems for tenants, such as working after hours, blocking entrances, causing excessive noise or failing to remove excessive dust or debris



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ASSURING TENANT SAFETY

When does lack of tenant safety become harassment?



Department of
Housing Preservation
& Development

*Dangerous Conditions and Lack of
Services as Harassment*
*(managed through Certificate of No Harassment
by HPD)*

- Not offering leases or lease renewals
- Offering you a buyout: While threatening you, intimidating you or using obscene language.
- Unjustified eviction notices or illegal lockouts.



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ASSURING TENANT SAFETY

- Threats and intimidation, such as late-night phone calls including phone calls to encourage or ask you to move out of your home or give up your rights
- Overcharging for a rent-regulated apartment
- Failure to provide necessary repairs or utilities

The ABC's Of Housing



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OCCUPIED MULTIPLE DWELLINGS

What is a Multiple Dwelling?

MDL Sect 4.7 A dwelling which is either rented, leased, let or hired out, to be occupied, or is occupied as the residence or home of three or more families living independently of each other.

- A **class A** multiple dwelling is occupied, as a rule, for permanent residence purposes.
- A **class B** multiple dwelling is occupied, as a temporary abode of individuals or families who are lodged with or without meals.



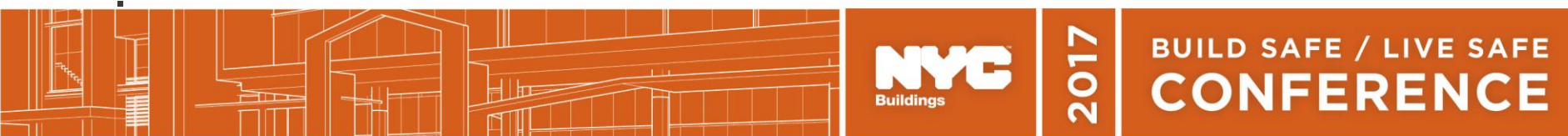
OCCUPIED MULTIPLE DWELLINGS

What is a Single Room Occupancy (SRO) Multiple Dwelling?

A single room occupancy multiple dwelling means:

1. A **class A multiple dwelling** used in whole or part as a **rooming house** or **furnished room house**, or for **single room occupancy** pursuant to section 248 of the New York state multiple dwelling law;
2. A **class A multiple dwelling** containing **rooming units**; or
3. A **class B multiple dwelling**.

2014 AC 28-107.2 and HMC 27-2004



OCCUPIED MULTIPLE DWELLINGS

When is a Permit Required for Alteration Work?

III. Interior partitions

2. Non-fire-rated and non-load-bearing wall, *permanent* removal in Group R occupancies.
In Group R occupancies, where the cutting away and *permanent* removal of any portion of a non-load-bearing, non-fire-rated partition is limited to the lesser of 50% of a given wall surface or 45 square feet in area.

Exception: a permit shall be required where the cutting away and permanent removal of any size occurs in a dwelling unit satisfying either of the following conditions:

- i. The dwelling unit is located in any of the following areas**:
 - a. Special Hudson Yards District
 - b. Preservation Area P-2 of the Special Garment Center District
 - c. Special Clinton District
 - d. Special West Chelsea District
 - e. Greenpoint-Williamsburg anti-harassment areas in Community District 1, Borough of Brooklyn; and
- ii. the dwelling unit is within a single room occupancy multiple dwelling^{††}

NO

1 RCNY §101-14

(Categories of work that may or may not require a permit)



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OCCUPIED MULTIPLE DWELLINGS

When is a Permit Required for Alteration Work?

****** The permanent removal of a portion of the partition resulting in a change in the layout of rooms within a dwelling unit shall constitute a “material alteration” in accordance with Zoning Resolution sections 93-90 and 96-01. Any “material alteration” to a dwelling unit located within the “anti-harassment areas” as provided for in Zoning Resolution Sections 23-013, 93-90, 96-01, and 98-70 shall constitute an alteration in accordance with the Building Code and, therefore, require a building permit.

†† Such work shall be considered an alteration and therefore require a building permit and, where applicable, a Certificate of No Harassment in accordance with section 28-107.4 of the Administrative Code.

1 RCNY §101-14

(Categories of work that may or may not require a permit)



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OCCUPIED MULTIPLE DWELLINGS: MATERIAL ALTERATION PER NYC ZONING RESOLUTION



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OCCUPIED MULTIPLE DWELLINGS

What is Considered **Material Alteration** per NYC Zoning Resolution?

“Material alteration” shall mean any alteration to a multiple dwelling (MD)

- which **reduces or increases** the floor area of the MD,
- **converts floor area** from residential to non-residential use,
- **changes the number or layout of dwelling units** or rooming units, or
- **adds or removes kitchens or bathrooms**



OCCUPIED MULTIPLE DWELLINGS

What is Considered **Material Alteration** per NYC Zoning Resolution?

Material alteration shall not include:

- an **incidental alteration** which does not change the layout of dwelling units or rooming units; or
- a **repair or replacement of existing elements** of such multiple dwelling without materially modifying such elements.

ZR § 93-90(a)(13)



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OCCUPIED MULTIPLE DWELLINGS

SCENARIO	ZONING DISTRICT	CONH REQUIRED?	TPP REQUIRED?
Occupied dwelling unit in a Multiple Dwelling	Any Zoning District except following five districts: HY, SWC, GW, GC/P-2, SCD	No	Yes
Occupied dwelling unit in a Multiple Dwelling	In following MN special districts HY, SWC, GC/P-2	Yes. Subject to HPD-1 Exemptions	Yes
Occupied dwelling unit in a Multiple Dwelling	In following BK special district GW	Yes. Subject to HPD-1 Exemptions	Yes
Occupied dwelling unit in a Multiple Dwelling	In following MN special districts SCD-Preservation Area	Yes. Subject to HPD-2 Exemptions	Yes
Occupied dwelling unit in a Multiple Dwelling	In following MN special districts SCD-Perimeter Area	Yes. Subject to HPD-2 Exemptions	Yes
SRO MD	Any Zoning District	Yes. Subject to HPD-3 Exemptions	Yes

HY: Special Hudson Yards District

SWC: Special West Chelsea District

GW: Green point - Williamsburg Special District

GC/P-2 Garment Center Preservation Area P-2 District

SCD: Special Clinton District



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SAFETY DURING CONSTRUCTION OPERATIONS

Tenant Protection Plan for Occupied Multiple Dwellings

2014 AC §28-104.8.4 Tenant protection plan.

Construction documents for alterations of buildings in which any dwelling unit will be occupied during construction shall include a tenant protection plan. Such plan shall contain a statement that the building contains dwelling units that will be occupied during construction and shall indicate in sufficient detail the specific units that are or may be occupied during construction, the means and methods to be employed to safeguard the safety and health of the occupants, including, where applicable, details such as temporary fire-rated assemblies, opening protectives, or dust containment procedures.



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SAFETY DURING CONSTRUCTION OPERATIONS

Tenant Protection Plan for Partially Occupied New Buildings

2014 BC 3303.10.1 Tenant protection plan.

In buildings containing occupied dwelling units, including newly constructed buildings that are partially occupied where work is still ongoing within the building, all construction or demolition work shall be performed in accordance with a tenant protection plan as required by Chapter 1 of Title 28 of the Administrative Code.



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SAFETY DURING CONSTRUCTION OPERATIONS

Occupant Protection Plan for Occupied Non-Residential Buildings

2014 BC 3303.10 Operations in occupied buildings.

When construction or demolition activity occurs in an occupied building, barricades, signs, drop cloths, and other protective means shall be installed and maintained as necessary to provide reasonable protection for the occupants against hazard and nuisance. Such protective means shall be indicated on an occupant protection plan, or where a tenant protection plan is required by Section 3303.10.1, on a tenant protection plan.



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ELEMENTS OF TENANT PROTECTION PLAN

2014 AC §28-104.8.4 Tenant Protection Plan.

The elements of the tenant protection plan may vary depending on the nature and scope of the work but at a minimum shall make detailed and specific provisions for:

1. Egress
2. Fire safety
3. Health requirements
4. Compliance with housing standards
5. Structural safety
6. Noise restrictions
7. Other



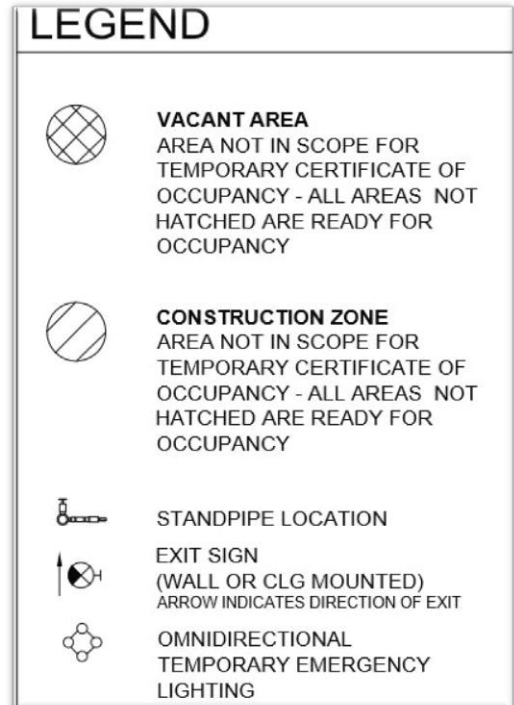
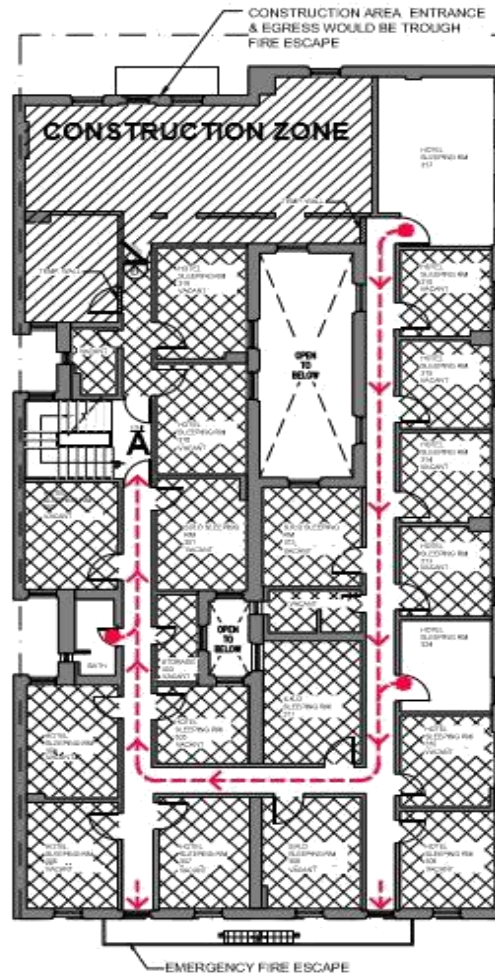
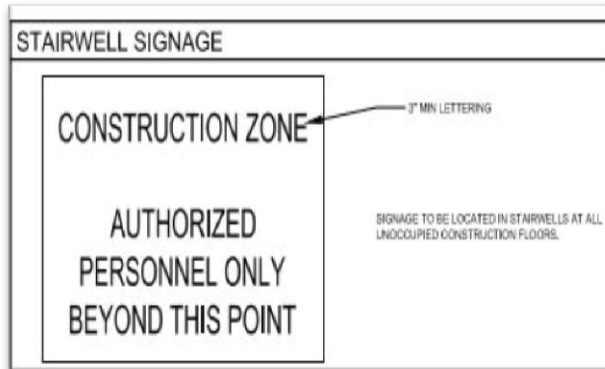
1. EGRESS PROVISIONS



At all times in the course of construction provision shall be made for adequate egress as required by this Code and the Tenant Protection Plan shall identify the egress that will be provided. Required egress shall not be obstructed at any time except where approved by the Commissioner.



EGRESS PLAN



1 **3RD FLOOR PLAN**
SCALE: 3/16" = 1'-0"



2. FIRE SAFETY PROVISIONS



All necessary laws and controls, including those with respect to occupied dwellings, as well as additional safety measures necessitated by the construction shall be strictly observed.



3. HEALTH REQUIREMENTS



Specification of methods to be used for control of dust, disposal of construction debris, pest control and maintenance of sanitary facilities, and limitation of noise to acceptable levels shall be included.



4. COMPLIANCE WITH HOUSING STANDARDS



The requirements of the **New York City Housing Maintenance Code**, and, where applicable, the **New York State Multiple Dwelling Law** shall be strictly observed.



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5. STRUCTURAL SAFETY



No structural work shall be done that may endanger the occupants.



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6. NOISE RESTRICTIONS



Where hours of the day or the days of the week in which construction work may be undertaken are limited pursuant to the **New York City Noise Control Code**, such limitations shall be stated.



PROJECT SPECIFIC TENANT PROTECTION PLAN NOTES OR TPP NOTES & PLANS

TENANT PROTECTION PLAN: (PER AC 104.8.4)

1. ALL WORK TO BE DONE IN ACCORDANCE WITH THE 2014 NEW YORK CITY BUILDING CODE, ARTICLE 19, AND REGULATIONS OF ALL OTHER AGENCIES HAVING JURISDICTION.
2. ALL EXISTING MEANS OF EGRESS FROM THE BUILDING TO BE MAINTAINED CLEAR AND FREE OF ALL OBSTRUCTIONS, SUCH AS BUILDING MATERIALS, TOOLS, ETC.
3. ALL REGULATIONS RELATED TO FIRE SAFETY SHALL BE STRICTLY OBSERVED. CONTRACTORS SHALL PROVIDE THE REQUIRED NUMBER OF PORTABLE FIRE EXTINGUISHERS IN REQUIRED LOCATIONS.
4. CONTRACTOR, AT ALL TIMES, TO MAKE SURE THERE IS NO LEAKAGE OF NATURAL GAS IN THE BUILDING, OR ANY FLAMMABLE GAS USED IN CONSTRUCTION.
5. ALL FLAMMABLE MATERIALS TO BE KEPT TIGHTLY SEALED IN THEIR RESPECTIVE MANUFACTURER'S CONTAINERS SUCH MATERIALS ARE TO BE KEPT AWAY FROM HEAT.
6. ALL FLAMMABLE MATERIALS TO BE USED AND STORED IN AN ADEQUATELY VENTILATED SPACE.
7. DEBRIS, DIRT, AND DUST TO BE KEPT TO A MINIMUM AND BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA.
8. CONTRACTOR TO ISOLATE CONSTRUCTION AREA FROM OCCUPIED BUILDING AREAS BY MEANS OF TEMPORARY PARTITIONS OF HEAVY WEIGHT DROP CLOTHS.
9. CONTRACTOR TO PROVIDE ADEQUATE TEMPORARY BRACING AND SHORING WHEREVER ANY STRUCTURAL WORK IS INVOLVED.
10. ALL MATERIALS STORED AT CONSTRUCTION AREA, AND/OR IN ANY AREA OF THE BUILDING, ARE TO BE SECURED IN A LOCKED AREA. ACCESS TO AREAS TO BE CONTROLLED BY OWNER AND/OR GENERAL CONTRACTOR.
11. ALL MATERIALS TO BE STORED IN AN ORDERLY FASHION.
12. CONSTRUCTION WILL BE CONFINED TO THE NON-PUBLIC SPACES AND THE CONTRACTOR WILL TAKE ADEQUATE MEASURES TO ENSURE THE DUST, DIRT OR OTHER SUCH INCONVENIENCE WILL NOT AFFECT THE APARTMENT UNITS.
13. ALL REGULATIONS RELATED TO THE SAFE HANDLING OF LEAD BASED MATERIALS AND ASBESTOS CONTAINING MATERIALS SHALL BE OBSERVED AND CARRIED OUT BY PERSONS TRAINED AND AUTHORIZED TO PERFORM SUCH WORK.
14. ALL NYC AND NYS REGULATIONS PERTAINING TO REQUIRED HOUSING STANDARDS SHALL BE COMPLIED WITH.
15. DEBRIS, DIRT AND DUST TO BE CLEANED UP AND CLEARED FROM BUILDING PERIODICALLY TO AVOID ANY EXCESSIVE ACCUMULATION.



PROJECT SPECIFIC TENANT PROTECTION PLAN NOTES OR TPP NOTES & PLANS

16. ALL DEMOLITION, REPAIR, AND ALTERATION OPERATIONS TO BE DONE IN ACCORDANCE WITH NEW YORK CITY BUILDING CODE, ARTICLE 19, SUB-ARTICLES 27-1036 AND 27-1039.
17. NO WORK SHALL BE DONE THAT IMPAIRS THE STRUCTURAL SAFETY OF THE BUILDING OR OCCUPANTS.
18. NOTICE SHALL BE GIVEN WHERE CONTEMPLATED WORK IS SUBJECT TO RESTRICTIONS PERTAINING TO THE NYC NOISE CONTROL CODE.
19. ALL ELECTRICAL POWER TO BE SHUT-OFF WHERE THERE IS EXPOSED CONDUIT.
20. ALL ELECTRICAL POWER IN THE CONSTRUCTION AREA TO BE SHUT OFF AFTER WORKING HOURS.
21. WORK SHALL NOT INTERFERE WITH HEATING, ELECTRICAL, GAS, OR PLUMBING SERVICE TO OTHER TENANTS.
22. WORK SHALL TAKE PLACE DURING NORMAL WORKING HOURS ONLY: 8:00 A.M. TO 5:00 P.M. MONDAY THROUGH FRIDAY (NOT ON HOLIDAYS).
23. THERE WILL BE NO ONE UTILIZING THE HALLWAYS DURING THE COURSE OF THE CONSTRUCTION WORK.
24. CONSTRUCTION OPERATIONS WILL NOT INVOLVE INTERRUPTION OF HEATING, WATER, OR ELECTRICAL WORK.
25. THE ENGINEER HAS NOT BEEN RETAINED TO SUPERVISE CONSTRUCTION.
26. THE ENGINEER IS NOT RESPONSIBLE FOR JOB SITE SAFETY AND HAS NO RESPONSIBILITY FOR DIRECTING AND/OR SUPERVISING THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION PROCEDURES AND SAFETY, AND THE ENGINEER IS NOT ACCOUNTABLE ANY VIOLATIONS OF O.S.H.A. OR OTHER SAFETY REGULATIONS.
27. VISITS TO THE SITE BY THE ENGINEER ARE ONLY INTENDED TO ENSURE COMPLIANCE WITH THE DESIGN AND SHOULD NOT BE CONSTRUED AS BEING RELATED TO SITE SAFETY.

NOTE:

ALL EXISTING RESIDENTIAL DWELLING UNITS IN THE SUBJECT BUILDING TO REMAIN OCCUPIED DURING CONSTRUCTION.



TENANT PROTECTION PLAN SERVICE NOTICE



January 2016

SERVICE UPDATE

Tenant Protection Plans: Available on BISWeb

Effective January 25, 2016, a stand-alone Tenant Protection Plan document must be submitted for all buildings being altered or demolished, containing one or more dwelling units that will remain occupied during construction. The Tenant Protection Plan will be available to the public through the Department's website.

The Tenant Protection Plan notes and any supporting drawings should continue to be on the building plans for all filings. However, a new form has been created ([TPP1](#)) to satisfy the required item—**Tenant Protection Plan and Notes**. The form must adhere to the six Tenant Protection areas cited in the Code (28-104.8.4) that apply to the work being done and must contain supporting drawings, if required.



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SPECIAL INSPECTION TO VERIFY COMPLIANCE WITH TPP

2014 BC 1704.20.10 Special requirements for work in occupied multiple dwellings.

- When alteration or construction operations are performed at occupied multiple dwellings, the special inspector shall periodically verify compliance with a tenant protection plan as provided for in Chapter 1 of Title 28 of the *Administrative Code*.



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SAFETY BEGINS WITH CAREFUL PLANNING

Specific requirements for assuring tenant safety in occupied multiple dwellings during construction operations

Additional Information and Help:

- Report dangerous conditions or lack of services through 311.
- For rent-controlled or rent-stabilized apartments, report tenant harassment issues by calling (866) ASK-DHCR ((866) 275-3427) or (718) 739-6400.
- New York State Attorney General also has an information and complaint line: (800) 771-7755.

Tenant Harassment Prevention Task Force is a collaborative effort by the NYS Attorney General's Office, NYS DHCR, HPD, DOB, DOHMH, NYC Law Department and others



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MATERIAL PLACEMENT & INSTALLATION



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MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

- NYC Construction Codes contain requirements for the safe erection and installation of structural elements
- NYC Construction Codes based on:
 - International Code Council (ICC) Codes
 - NYC-Specific requirements
 - National standards



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MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 3305 Material Placement And Installation

- Contains requirements based on structural material
 - 3305.2 – Steel
 - 3305.3 – Concrete formwork
 - 3305.4 – Aluminum
 - 3305.5 – Masonry



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 3305.2 Structural Steel

- Erection requirements based on American Institute of Steel Construction (AISC) 360 “Specification for Structural Steel Buildings”
 - AISC 303 “Code of Standard Practice for Steel Buildings and Bridges”



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 3305.2 Structural Steel (continued)

- 2205.6 Fabrication, erection and quality control
 - Referenced by BC3305.2.2 for coordination
- 2205.6.2 Field connections
 - No holes, copes or cuts of any type shall be made to facilitate erection unless specifically shown on the shop drawings or authorized in writing by the engineer or architect of record



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 3305.2 Structural Steel (continued)

- **3305.2.3 Handling and storing materials**
 - Requires protection of structural elements
 - Any loss of section, bends, crimps or other evidence of permanent deformations shall be straightened by methods approved by the registered design professional of record or the piece shall be rejected
- **3305.2.4 Placing of structural members**
 - During the placing of a structural member, the load shall not be released from the hoisting rope until the member is securely supported



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 3305.2 Structural Steel (continued)

- **3305.2.4.1 Open web steel joists**
 - Open web steel joists that are hoisted singly shall be transferred from their place of storage directly to their permanent location and safely secured
 - No load shall be placed on open web steel joists until they are permanently fastened in place or otherwise secured in accordance with methods approved by the registered design professional of record
- **2206.4 Steel joist drawings**
 - Required for field placement
 - *Prohibited in high-rise construction*



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 2210 Cold-formed Steel Light-frame Construction

- Contains requirements for cold-formed steel construction based on American Iron and Steel Institute (AISI) Standards

2210.3.2 Truss design drawings

- Based on Section B2.3 of AISI S214
- Include the details of permanent individual truss member restraint/bracing in accordance with Section B6(a) or B6(c) of AISI S214



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

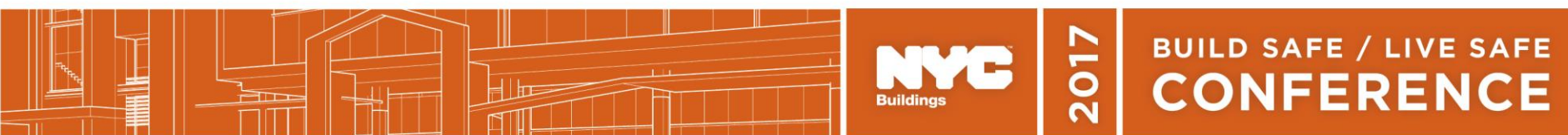
BC 2210 Cold-formed Steel Light-frame Construction *(continued)*

2210.3.4 Trusses spanning 60 feet or greater

- Requires a registered design professional for the design of the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing for trusses with clear spans 60 feet (18 288 mm) or greater

1704.3.4 Cold-formed steel construction

- Special inspections for prefabricated and site built cold-formed steel light-frame construction and assemblies
- The special inspector shall verify the size, quality, framing, erection, and both temporary and permanent bracing.



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS: COLD-FORMED STEEL

TABLE 1704.3.4
REQUIRED VERIFICATION AND INSPECTION OF
COLD-FORMED STEEL LIGHT-FRAME CONSTRUCTION

Verification and inspection	Continuous	Periodic	Referenced Standard	Code Reference
1. Material Verification:				
a. Verify that identification markings conform to AISI S200 and as specified in the approved construction documents.		X	AISI 200, Section A5.4	
b. Verify that material is clean, straight and undamaged.		X		
2. Inspection of general framing:				
a. Verify that member sizes conform to the approved construction documents.		X		
b. Verify that member layout conforms to the approved construction documents.		X		
c. Verify that proper bearing lengths are provided in accordance with approved construction documents.		X		
d. Verify that punched holes and sheared or flame cut edges of material in members are clean and free from notches and burred edges.		X		



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS: COLD-FORMED STEEL

3. Inspection of framing connections and anchorages:				
a. Verify that screws, bolts, and other fasteners conform to approved construction document requirements for diameter, length, quantity, spacing, edge distance, and location.		X	AISI S200, Section D	
b. Verify that manufactured connectors, such as joist hangers, caps, straps, clips, ties, hold-downs, and anchors conform to approved construction document requirements for manufacturer, type, gauge, and fastener requirements.		X	AISI S200, Section D	
4. Inspection of welding:				
a. Inspect welds in accordance with Table 1704.3.		X	AWS D1.3	
5. Bracing:				
a. Verify that temporary bracing, shoring, jacks, etc., are installed, and not removed until no longer necessary, in accordance with the approved construction documents and approved erection drawings.		X		
b. Verify that permanent bracing, web stiffeners, bridging, blocking, wind bracing, etc, are installed in accordance with the approved construction documents and approved erection drawings.		X		
c. Where a cold-formed steel truss clear span is 60 feet (18 288 mm) or greater, the special inspector shall verify that the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the approved truss submittal package.		X		2210.3.4



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 3305.3 Concrete Formwork

- American Concrete Institute (ACI) 318 “Building Code Requirements for Structural Concrete and Commentary”
 - Chapter 6 covers formwork design and construction
- *Other references and guides*
 - ACI 347 “Guide to Formwork for Concrete”
 - ACI SP4 “Formwork for Concrete



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 3305.3 Concrete Formwork (continued)

- 3305.3 General requirements
 - 3305.3.1 Contains general design and construction requirements, including requirement
 - Safe support of loads
 - Vertical and lateral load distribution
 - Bracing
 - Pre-stressing & post-tensioning
 - 3305.3.4.5 Perimeter formwork positive attachment
 - 3305.3.5.1 Removal schedule for forms and shores
 - 3305.3.6 Reshoring requirements
 - 3315 Ramps



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 3305.3 Concrete Formwork (continued)

- 3305.3.1.2.1 Use of existing structures to support vertical or lateral load
 - Requires an evaluation of the existing structure for the loads imposed by a registered design professional
 - The registered design professional shall prepare design drawings documenting the findings of the evaluation, indicate the location of formwork elements, and the interface between the formwork and the existing structure.



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 3305.3 Concrete Formwork (continued)

- BC 3305.3.2.1 Design drawings
 - Site-specific formwork design drawings prepared by a registered design professional required for:
 - Structures classified as a major building
 - Wherever the shore or form height exceeds 14 feet
 - Wherever the total vertical load on the forms exceeds 150 psf
 - Wherever power buggies are used
 - Wherever multi-stage shores are used
 - Wherever the slab thicknesses or beam heights equal or exceed 10"
 - Wherever there are concentrated loads on the formwork exceeding 2000 lbs.
 - Wherever there are loads imposed on existing structure
 - Drawing exceptions
 - Slabs supported directly on grade or footings where such slab or footing does not impart any load on an adjacent structure



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 3305.3 Concrete Formwork (continued)

- **Loads** – NYC specific loading requirements including:
 - Vertical loads
 - Lateral concrete pressure
 - Special loads
 - External lateral loads → BC 1618 Loads on temporary installations
 - Allows for reduced environmental loads with an action plan



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 3305.3.3.1 Inspection

- A qualified person designated by the contractor shall inspect formwork, including shores, reshores, braces and other supports:
 - Prior to placement of reinforcing steel to verify that they conform to the construction documents and form design drawings
 - Periodically during the placement of concrete and after concreting, the elevations, camber, and vertical alignment of formwork systems shall be inspected using tell-tale devices



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 3305.3.3.1 Inspection (continued)

- A record of all such inspections shall be kept at the site available to the commissioner
- The names of the persons responsible for such inspections and the foreman in charge of the formwork shall be posted in the field office
- This is in addition to Special Inspections per BC1704.4 & Observations per BC3305.3.3.2



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 3305.3.3.2 Formwork Observation

- Visual observations of the formwork for the general conformance with the design intent shall be performed by:
 - The formwork designer
 - An employee of the formwork designer under his or her direct supervision
 - A registered design professional retained by the formwork designer or
 - An employee of such retained registered design professional under the direct supervision of such retained registered design professional
- Exceptions:
 - Formwork that does not require design drawings
 - One- two- and three-family dwellings and accessory uses to such buildings



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 3305.3.3.2.1 Intervals

- Observations shall be performed at intervals permitting observation of representative configurations throughout the project duration
- At a minimum, observations shall be made:
 - Immediately after formwork related incidents or violations
 - When concrete construction operations are significantly modified such as changes to form materials, concrete placement cycle, or form and support layout prior to use of the change
- The formwork designer shall maintain a log of such observations at the construction site.



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 3305.3.3.2.2 Discrepancies From The Formwork Design

- Where discrepancies from the formwork design are discovered during observations, such discrepancy shall be immediately brought to the attention of the concrete contractor
 - Site safety manager, site safety coordinator, and concrete safety manager shall be notified of discrepancies that relate to site safety



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 3305.3.3.2.2 Discrepancies From The Formwork Design (continued)

- The concrete contractor shall be responsible for correcting the discrepancy
 - Observations do not relieve contractor of requirement to comply with plans or inspect
- The concrete contractor shall be responsible for correcting the discrepancy



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 3305.3.3.2.3 Hazardous Formwork Conditions

- Where an observed formwork condition hazardous to life, safety, or health is not immediately corrected by the responsible contractor, the formwork designer or his or her qualified designee pursuant to Section 3305.3.3.2 shall immediately report such hazardous formwork condition and such failure to correct the hazardous formwork condition to the commissioner



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 2002 Based on ADM 35 Aluminum Design Manual, ASM Aluminum Sheet Metal Work in Building Construction (Fourth Edition)

- **3305.4.1 Plumb.** All framework shall be carried up true and plumb
- **3305.4.2 Temporary bracing.** Temporary bracing shall be provided to support all loads imposed upon the framework during construction that are in excess of those for which the framework was designed.
- **3305.4.3 Temporary connections.** As erection progresses, the work shall be securely bolted or welded to resist all dead loads, wind, and erection stresses
- **3305.4.4 Alignment.** The structure shall be properly aligned before riveting, permanent bolting, or welding is performed



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MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 3305.5 Masonry

- BC 2104 The Masonry Society (TMS) TMS 602/ACI 530.1/ASCE 6 “Specification for Masonry Construction,” includes:
 - Tolerances
 - Cold weather protection
 - Hot weather protection



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 2104.6 Masonry Construction Bracing

- TMS 602/ACI 530.1/ASCE 6 Section 3.3E – The contractor shall design, provide, and install bracing that will assure stability of all masonry during construction
 - Bracing plan shall be maintained on site during all masonry construction.
 - Bracing plans shall consider wind loads, initial and intermediate masonry strengths, and the contractor's ability to evacuate the site.



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

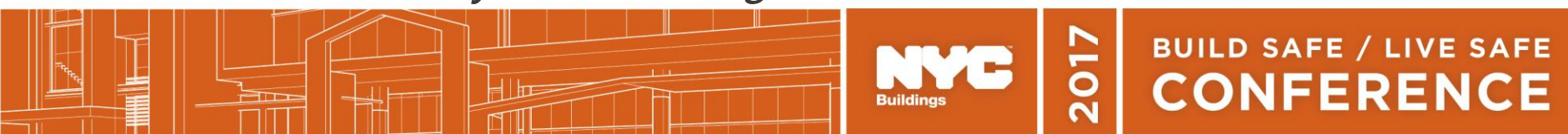
BC 2104.6 Masonry Construction Bracing (continued)

- Construction bracing for walls within a distance less than their height from adjoining properties or other unprotected and uncontrolled areas shall be designed for code prescribed wind loads and the bracing plan shall be signed and sealed by a licensed professional engineer.
- Construction bracing for walls may be designed using reduced loading in accordance with Section 1618.
 - Such reduced loading shall only be permitted when an action plan meeting the requirements of Section 1618.3 is provided and maintained at the site.

MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC 2104.6 Masonry Construction Bracing (continued)

- OSHA 1926 Subpart Q 1926.706 Requirements for Masonry Construction
 - Limited access zone requirements
 - Appendix A non-mandatory References
- Industry accepted standards for bracing design
 - *Standard Practice for Bracing Masonry Walls Under Construction NCMA TEK 3-4B - “Bracing Concrete Masonry Walls During Construction” 2005*
 - *MCAA - “Standard Practice for Bracing masonry Walls Under Construction,” July 2001, developed by the Council For Masonry Wall Bracing.*



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC Chapter 23 Wood

- **2303.4.1.1 Truss design drawings**
 - Required for wood trusses, including metal-plate-connected wood trusses
 - Indicates temporary and permanent member restraint
- **2303.4.2 Truss placement diagram**
 - The truss manufacturer shall provide a truss placement diagram that identifies the proposed location for each individually designated truss and references the corresponding truss design drawing



MATERIAL PLACEMENT & INSTALLATION REQUIREMENTS

BC Chapter 23 Wood (continued)

- **2303.4.6 TPI 1 specifications**
 - Design, manufacture and quality assurance of metal-plate-connected wood trusses

- **1704.6.2 Metal-plate-connected wood trusses**
 - Requires special inspection during the erection of metal-plate-connected wood trusses
 - Temporary bracing, shoring, jacks etc. shall not be removed until the SIA determines they are no longer needed



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

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