



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

This course will examine construction incidents that occurred in New York City in 2013 and discuss lessons learned.

The course will describe changes to 2008 NYC Building Code for Chapter 33 that deals with Construction Safety and describes how these code changes mitigate risk and will be enforced by the Department of Buildings.

Lastly, the course will discuss safety program initiatives established by the Department of Buildings to uphold public safety.



Learning Objectives

- Participants will review construction incidents that occurred in the past 12 months and will be able to describe inadequacies & strategies for prevention.
- Participants will be made aware of Code changes to Chapter 33 of the 2008 NYC Building Code related to construction safety and be able to determine appropriate usage on projects.
- 3. Participants will discuss and be able to identify specific regulations that contribute to on-site safety.
- 4. Participants will gain knowledge of safety initiatives and programs in order to educate on the potential risks construction projects pose to adjoining property and public.



Topics

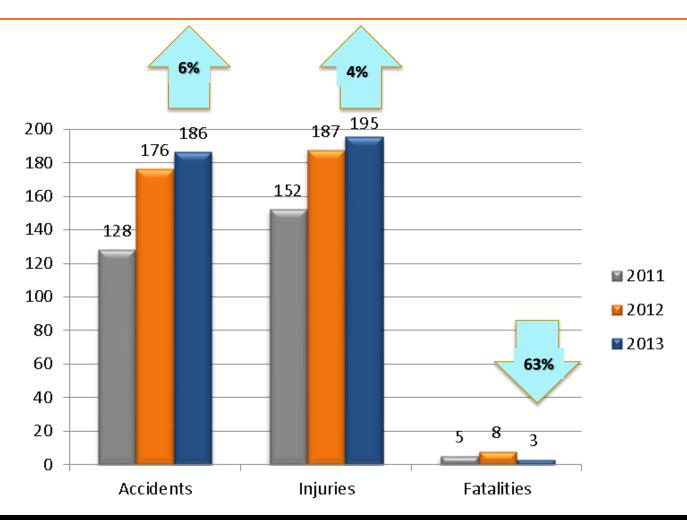
Construction Accidents Overview

2013 Construction Fatalities

Accident Prevention

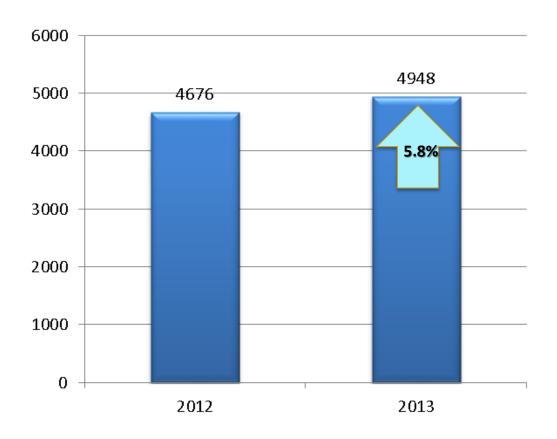


CONSTRUCTION ACCIDENTS OVERVIEW



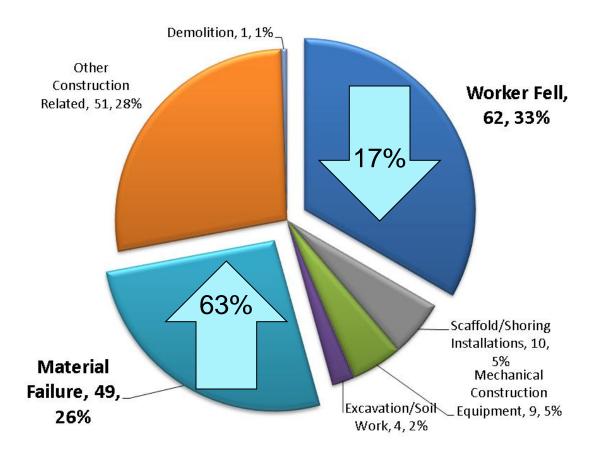


Permitted NB and A1 Jobs





2013 Construction Accidents by Cause





2013 Construction Fatalities

Worker Fell

Worker Fell

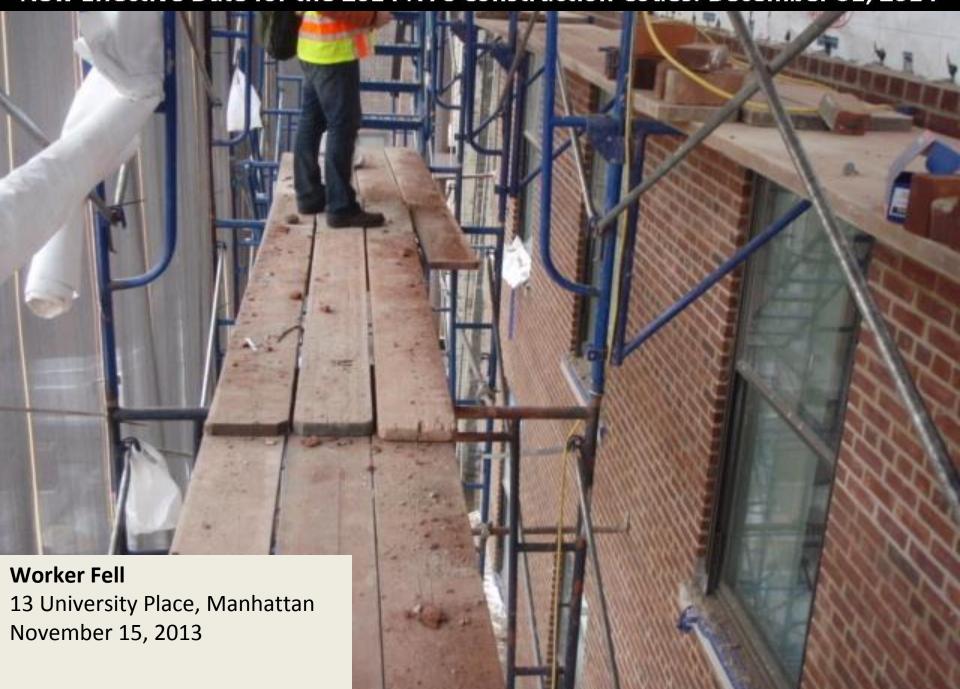
Worker Fell



New Effective Date for the 2014 NYC Construction Codes: December 31, 2014 Location of Fall Worker walked along oundation wall **Worker Fell** 45-11 Broadway, Queens

January 24, 2013





Worker Fall: Contributing Factors

Worker Error

Not wearing or improper use of fall protections

Distracted

Contractor Error

Improper or no pre-task planning

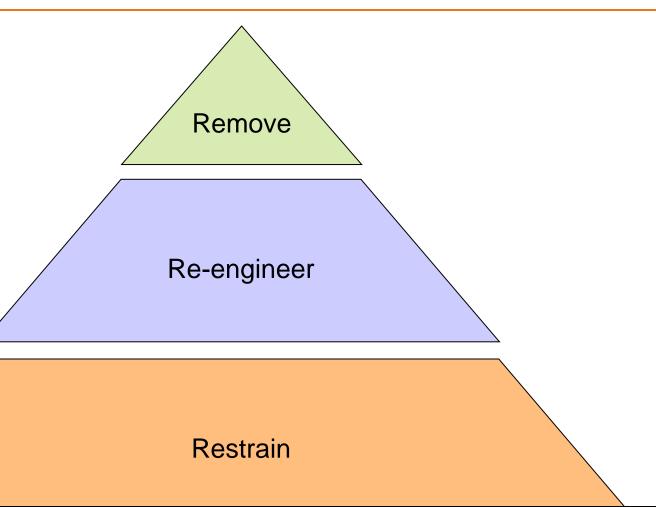
Lack of, or inadequate temporary protection

Inadequate or improper tools for the task

Shortcuts/unsafe work practices



Fall Hazard Prevention

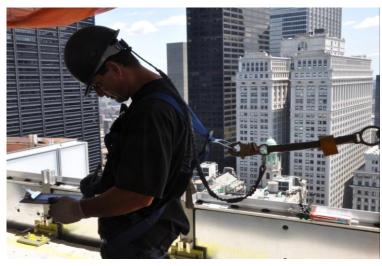




Fall Hazard Prevention









Shaft Safety







Material Failure / Fell: Contributing Factors

Worker Error

Distracted from task

Carelessness

Taking shortcuts

Contractor Error

Poor housekeeping

Lack of or inadequate temporary protection

Inadequate supervision

Shortcuts / unsafe work practices

Material Failure

Improper or lack of planning

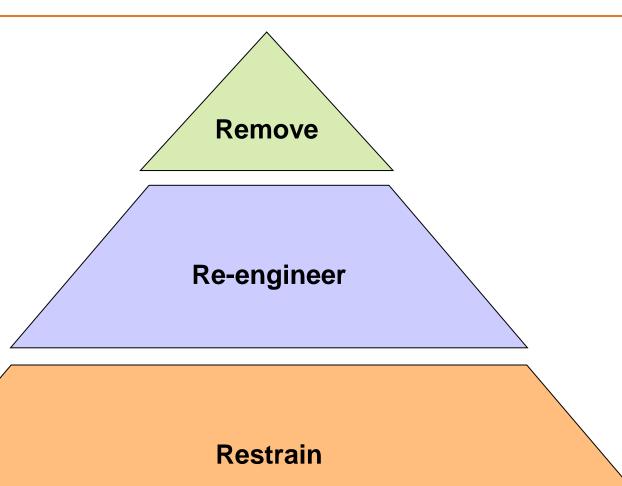
Overloading

Design-related

Special Inspection-Related



Material Fell Hazard Prevention





Material Fell Hazard Prevention



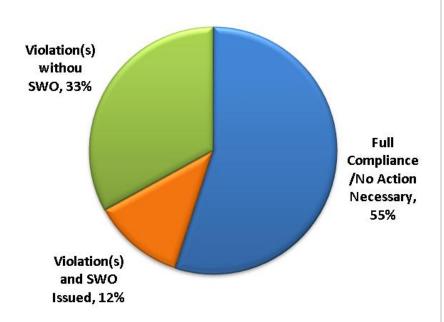




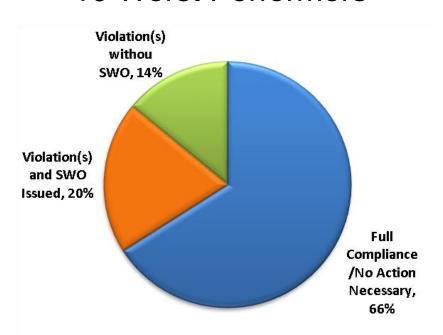


Low-Rise Safety Sweep

Phase 1
920 Sites
360 Contractors



Phase 2129 Sites10 Worst Performers





Netting Safety









Opening Safety





Opening Safety



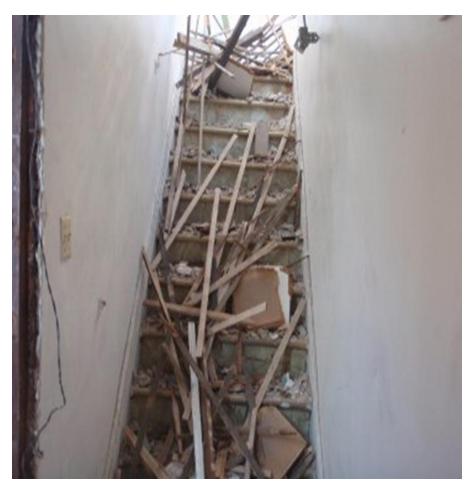


Opening Safety





Housekeeping Safety







Housekeeping Safety





Housekeeping Safety





Material on Edge Safety



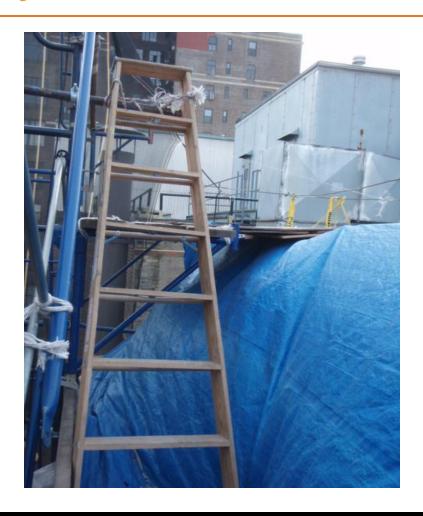




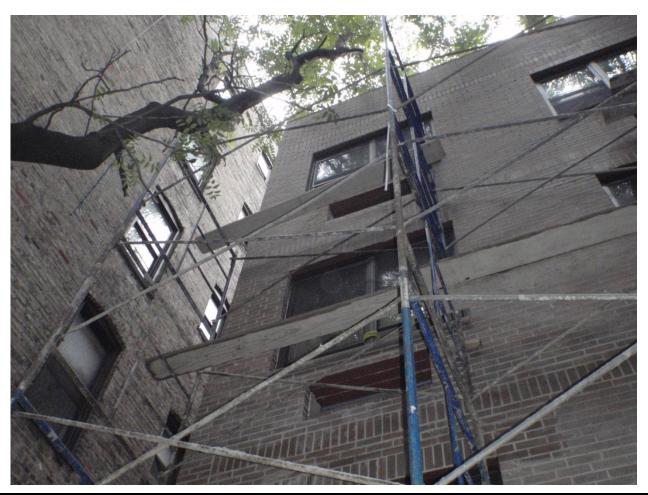
Edge Safety

























Scaffold Safety











































































Building Code, Chapter 33 Revision Process

Review and Revision - over 24-Month Period

27 Committee Members From Industry

9 Committee Members From Department of Buildings

34 Committee Meetings Held



Revision Process Participants

Industry Experts from Design, Contracting and Safety Fields

DOB Experts From Technical and Enforcement Units

Greater Participation by Industry and Department's Enforcement Units



Goals of Revision

Clarify Ambiguities in Code Language

Consolidate Safety-Related Regulations into Chapter 33

Codify Various Industry Advisories, Bulletins and Rules

Add Requirements to Enhance Construction Safety

Update to Reflect New Technology/Industry Best Practices

NYC

Scope of Chapter 33

Governs All Types of Construction

New Buildings

Alterations

Demolitions

Repairs

Temporary Construction Equipment

Governs All Types of Buildings

Residential, Commercial, Industrial

High Rise and Low Rise

Private Dwellings (1-, 2-, 3-Family)



Applicability: Chapter 33, 2008 vs 2014

Major Buildings Requiring a Site Safety Program

2014 Code if site safety plan was <u>approved</u> on or after October 1, 2014; applies to temporary construction equipment related to project.

All Other Buildings Not Requiring a Site Safety Program

2014 Code if underlying work application was <u>filed</u> on or after October 1, 2014; applies to temporary construction equipment related to project.

Full Demolitions Regardless of Site Safety Program Requirement

2014 Code, if DM application was <u>permitted</u> on or after October 1, 2014; applies to temporary construction equipment related to project.



Engineering & Safety Operations Unit

Assistant Commissioner Michael Alacha, PE

Executive Director Faisal Mohammad, PE

Deputy Director Bill Halkiadakis, PE

Chief Paul Irizarry (Cranes and Derricks)

Senior Executive Director Robert D'Alessio

Chief Eyal Amos (BEST, Hi Rise, Low Rise, Demolition)

Chief Nikolay Veksler (Scaffold Safety)

Chief Gary Grandstaff (Excavation, Gut Rehab)

Chief Engineer Naweed Chaudhri, PE (Excavation, Gut Rehab, Scaffolds)

Director Bernard Ross

Deputy Director Joseph Ventour (Major Projects Program)





Chapter 33 Revisions: BC 3301.2

3301.2 Safety measures and safeguards.

Contractors, construction managers, and subcontractors engaged in construction or demolition operations shall institute and maintain all safety measures required by this chapter and provide all equipment or temporary construction necessary to safeguard the public and property affected by such contractor's operations.



Chapter 33 Revisions: BC 3301.1.3

3301.1.3 Manufacturer specifications.

All equipment shall be used in accordance with the specifications of the manufacturer, where such specifications exist, and the requirements of this code. Where there is a discrepancy, the stricter requirement shall apply.



Chapter 33 Revisions: BC 3302.1 Definitions

3302.1 Definitions. The following words and terms shall, for the purposes of this chapter, have the following meanings.

ACCIDENT. An occurrence directly caused by construction or demolition activity or site conditions that result in one or more of the following:

- 1. A fatality to a member of the public, or
- 2. Any type of injury to a member of the public; or
- 3. A fatality to a worker; or
- 4. An injury to a worker that requires transport by emergency medical services or requires immediate emergency care at a hospital or offsite medical clinic; or
- 5. Any complete or partial structural collapse or material failure; or
- 6. Any complete or partial collapse or failure of pedestrian protection, scaffolding, hoisting equipment, or material handling equipment; or
- 7. Any material fall exterior to the building or structure.



Chapter 33 Revisions: BC 3301.8

3301.8 Accidents and damage to adjoining property. The department shall be notified immediately by the permit holder, or a duly authorized representative, of an accident at a construction or demolition site, or of any damage to adjoining property caused by construction or demolition activity at the site.



Chapter 33 Revisions: BC 3301.8.1

3301.8.1 Use and tampering prohibited.

Following an accident, no person shall permit any of the following without the permission of the commissioner, or without a lawful order from the New York City Police or Fire Department:

Use or operation of any equipment or structure damaged or involved in the accident; or

Removal or alteration of any equipment, structure, material, or evidence related to the accident.

Exception: Immediate emergency procedures taken to secure structures, temporary construction, operations, or equipment that pose a continued imminent danger or to facilitate assistance for persons who are trapped or who have sustained bodily injury.



Chapter 33 Revisions: BC 3302.1 Definitions

Walkable Floor (Concrete Construction).

A floor where the concrete slab has been poured and the formwork stripped.

Walkable Floor (Precast Concrete Construction).

A floor where the frame is erected and the precast concrete floor is fixed in place.

Walkable Floor (Steel Construction).

A floor where the frame is erected and the deck is tack welded or fixed in place.

Working Deck (Concrete Construction).

The level where the floor is being formed.



Chapter 33 Revisions: BC 3302.1 Definitions

Working Deck (Demolition).

The level where the floor is being broken up.

Working Deck (Precast Concrete Construction).

The level where the floor is being placed.

Working Deck (Steel Construction).

The floor where the metal decking and steel components are being placed before concrete is poured.



Chapter 33 Revisions: BC 3303.7.1.1

3303.7.1.1 Large footprint construction.

For a building that has a footprint of 100,000 square feet (30 480 m²) or more, regardless of the height of the building, and the building is substantially enclosed, permanent or temporary fire hydrants available for fire department use shall be provided during the course of construction:

Within 50 feet (15 240 mm) of the main entrance; and

Along the perimeter of the building, with the hydrants located so that there is at least one hydrant along every 250 feet (76 200 mm) of building perimeter, and with no hydrant more than 50 feet (15 240 mm) from the exterior wall.



Chapter 33 Revisions: BC 3303.8 (1)

- 3303.8 Standpipe systems during construction, alteration or demolition. During construction, alteration or demolition operations, standpipe systems shall comply with the following:
- 1. When, during the course of the construction of a new building the working deck reaches a height of 75 feet (22 860 mm) or greater above the ground in a building for which a standpipe system will be required, a permanent or temporary standpipe system meeting the requirements of Section 905 shall be kept in a state of readiness at all times for use by fire-fighting personnel. The standpipe system shall serve all floors where the permanent stairs are required per Section 3303.11. No standpipe shall be considered to be in a state of readiness unless it is painted red in accordance with the provisions of Section 905.11 of this code. When freezing conditions may be encountered, the system in whole, or the part of the system subject to freezing conditions, shall be maintained as a dry system.



Chapter 33 Revisions: BC 3303.8 (3)

- **3303.8 Standpipe systems during construction, alteration or demolition.** During construction, alteration or demolition operations, standpipe systems shall comply with the following:
- 3. When, during the course of the construction of a new building which will have a occupiable space at a depth of 75 feet (22 860 mm) or greater below the level of the ground in a building for which a standpipe system will be required, a permanent or temporary standpipe system meeting the requirements of Section 905 shall be installed and shall be kept in a state of readiness at all times for use by fire-fighting personnel. The standpipe system shall serve all stories below grade and shall be installed as soon as a temporary or permanent stair is installed below grade. No standpipe shall be considered to be in a state of readiness unless it is painted red in accordance with the provisions of Section 905.11 of this code. When freezing conditions may be encountered, the system in whole, or the part of the system subject to freezing conditions, shall be maintained as a dry system.



Chapter 33 Revisions: BC 3303.8.1.4.13

4.13 Pressure gauges.

A system of pressure gauges shall be installed at the compressor and at the most remote points of the system from the compressor.



Chapter 33 Revisions: BC 3303.10

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.



Chapter 33 Revisions: BC 3303.12.3

3303.12.3 Deep excavations. Where the proposed lowest level of a building with a footprint of 10,000 square feet (3048 m) or greater is constructed at a depth greater than 75 feet (22 860 mm), a hoist meeting the requirements of Section 3318 shall be available at all times for Fire Department use once such floor has been poured and set. The hoist shall serve the level at grade and all stories below grade.

Exception: Subject to the approval of the commissioner, alternate means available at all times for Fire Department use, including but not limited to a vehicular ramp, shall be provided.



Chapter 33 Revisions: BC 3303.12.4

3303.12.4 Converting elevators.

Where an existing elevator is converted from passenger or freight use the department shall be notified in accordance with the requirements of Chapter 30.



Chapter 33 Revisions: BC 3303.13.2

3303.13.2 Safety monitoring plan.

Where work has been interrupted or abandoned and discontinued for a period of at least three months, a safety monitoring plan shall be prepared and submitted to the department. Such safety monitoring plan shall be specific to the site, shall identify safeguards to be instituted and maintained to secure the site, and shall specify monitoring to be performed during the duration of suspension of work. The site shall be monitored in accordance with such plan.



Chapter 33 Revisions: BC 3303.16

3303.16 Contractors sheds and offices.

Contractors sheds and offices located within 30 feet (9144 mm) of new construction, existing buildings, or another contractor shed or office shall be made of metal or other noncombustible material.

Exception:

Contractor sheds and offices located within a building and protected from weather may use fire retardant treated wood, provided the shed does not exceed one story in height and 120 square feet (36.58 square meters) in area and is at least 30 feet (9144 mm) from another shed.



Chapter 33 Revisions: BC 3304.1

3304.1 Scope.

The provisions of this section shall apply to all soil and foundation work, including but not limited to excavations made for the purposes of taking earth, sand, gravel, or other material, as well as to soil and foundation work related to accessory uses such as garages, pools, and decks, and also to the underpinning or bracing of buildings or structures, in order to safeguard



Chapter 33 Revisions: BC 3305.2.8

3305.2.8 Permanent flooring and steel erection in tiered buildings. The permanent floors of such buildings or other structures shall be installed as soon as possible as the erection of structural steel members progresses. In no case shall there be more than eight stories, floors or equivalent levels or 120 feet (36 576 mm), whichever is less, between the working deck and the uppermost permanent floor.

Exception: Where otherwise designed, in accordance with the approved construction documents, by the registered design professional of record.



Chapter 33 Revisions: BC 3305.3.1.2.1

3305.3.1.2.1 Use of existing structures to support vertical or lateral loads.

The use of existing structures to support vertical or lateral loads imposed by concrete construction operations shall require 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.



Chapter 33 Revisions: BC 3305.3.3.2

3305.3.3.2 Formwork observation.

In addition to the inspections by the contractor required pursuant to Section 3305.3.3.1, visual observations of the formwork for the general conformance with the design intent.



Chapter 33 Revisions: BC 3306.2.1

3306.2.1 Safety Zone.

A safety zone shall be provided around all demolition areas to prevent persons other than workers from entering such zone. Where demolition occurs on the exterior of a building, such zone shall be approved by the commissioner prior to the commencement of demolition. Where mechanical demolition equipment, other than handheld devices, is to be used for the full demolition of a building, the safety zone shall be equal to or greater than half the height of the building to be demolished; such safety zone may be reduced by the same ratio as the building is being demolished.



Chapter 33 Revisions: BC 3306.2.1

3306.2.1 Safety Zone.

Exception: Approval of the commissioner is not required for a safety zone established for demolition on the exterior of a building, provided the work is a minor alteration or ordinary repair and is accomplished without any mechanical demolition equipment, other than handheld devices.



Chapter 33 Revisions: BC 3306.5

3306.5 Submittal documents for demolition.

Full and partial demolition operations shall be conducted in accordance with submittal documents. Such submittal documents shall comply with Sections 3306.5.1 through 3306.5.3.



Chapter 33 Revisions: BC 3306.10

3306.10 Removal of foundations and slabs.

Where a building, or any portion, has been demolished to grade, the floor slab or foundation of such building, or portion, shall be removed and the site backfilled to grade.

Exceptions:

1. Cellar floors may remain provided the cellar floor slab is broken up to the extent necessary to ground drainage and prevent accumulation of water, and also provided that all fixtures or equipment that would cause voids in the fill are removed.



Chapter 33 Revisions: BC 3306.10 Continued

3306.10 Removal of foundations and slabs.

Exceptions:

- 2. Where portions, other than a cellar floor, are to remain and covered with backfill, a waiver approved by the commissioner shall be obtained. Drawings prepared by a registered design professional depicting the remaining buried structure shall be submitted with the waiver request.
- 3. Where a floor slab or foundation is to remain and not be backfilled, a waiver approved by the commissioner shall be obtained. Such request for waiver shall be accompanied by a statement and drawings prepared by a registered design professional demonstrating the necessity for retaining the existing floor slab or foundation for future construction or site remediation, as well as demonstrating positive cellar drainage to an approved place of disposal.



Chapter 33 Revisions: BC 3307.2.3

3307.2.3 Temporary public walkway within the site.

Where authorized by the commissioner, a temporary walkway open to the public may be provided through a site that is otherwise fenced and closed to the public. Such temporary walkway shall be:

Protected by a sidewalk shed, or where acceptable to the commissioner, provided with overhead protection and lighting equivalent to that afforded by a sidewalk shed;



Chapter 33 Revisions: BC 3307.2.3 Continued

3307.2.3 Temporary public walkway within the site.

...Such temporary walkway shall be:

Enclosed along the side facing the site with a solid fence that meets the requirements of Section 3307.7. Where the sidewalk shed or equivalent overhead protection extends beyond the height of the fence, the gap shall be enclosed with a wire screen comprised of not less than number 18 gage wire mesh, or equivalent synthetic netting, with openings in the wire or synthetic mesh no larger than ½ inch (13 mm); and



Chapter 33 Revisions: BC 3307.2.3 Continued

3307.2.3 Temporary public walkway within the site.

...Such temporary walkway shall be:

Enclosed along the side facing the street with a wire screen comprised of not less than number 18 gage wire mesh, or equivalent synthetic netting, with openings in the wire or synthetic mesh no larger than ½ inch (13 mm), or where a special hazard exists, protected in accordance with Section 3307.4.7.



Chapter 33 Revisions: BC 3307.4.7

3307.4.7 Work or storage zones.

Where work or storage related to the construction or demolition of a building or structure is occurring adjacent to a sidewalk shed or equivalent overhead protection, and such area is not closed with a fence in accordance with Section 3307.7 or a permanent facade, a solid barrier extending at least 4 feet (1219 mm) in height from the level of the ground shall be provided. The space between the top of the barrier and the deck of the overhead protection shall be enclosed with a wire screen comprised of not less than number 18 gage wire mesh, or equivalent synthetic netting, with openings in the wire or synthetic mesh no larger than ½ inch (13 mm).



Chapter 33 Revisions: BC 3307.4.7

3307.4.7 Work or storage zones.

Exception:

In the area where a material hoist, personnel hoist, hoistway, or chute is located, the solid barrier shall extend from level of the ground to the deck of the overhead protection.



Chapter 33 Revisions: BC 3307.6.2

3307.6.2 Where required.

A sidewalk shed shall be installed and maintained to protect all sidewalks, walkways, and pathways within the property line of a site, and all public sidewalks that abut the property, as follows:



Chapter 33 Revisions: BC 3307.6.4.2.1

3307.6.4.2.1 Wind and other loads.

The effect of wind and other loads on the sidewalk shed, and any item placed or attached on or to the shed, shall be considered in the design in accordance with Chapter 16.



Chapter 33 Revisions: BC 3307.6.4.2.2

3307.6.4.2.2 Storage.

Storage on sidewalk sheds shall be as follows:

No item shall be stored or placed upon a sidewalk shed designed as a light duty sidewalk shed under Section 3307.6.4.2.



Chapter 33 Revisions: BC 3307.6.4.6

3307.6.4.6 Parapet.

A vertical parapet at least 3 feet 6 inches (1067 mm) high, as measured from the deck of the sidewalk shed, shall be constructed along all edges of the sidewalk shed. Such parapet shall consist of solid plywood, corrugated metal, a galvanized wire screen consisting of not less than No. 16 steel wire gage with a ½ inch (13 mm) debris mesh, or other equivalent material, and shall be securely attached to the shed with braced uprights. Temporary removal of a portion of the parapet is permitted for the handling of material, provided the parapet is immediately restored at the end of the handling operation.



Chapter 33 Revisions: BC 3307.6.4.6 Continued

3307.6.4.6 Parapet.

Exception

3. In lieu of a vertical parapet, angled protection of identical construction to a parapet that inclines outward at an angle of 45 degrees (0.79 rad) may be utilized provided such protection is securely attached to the deck, and provided the angled protection extends to a point that intersects a line drawn 3 feet 6 inches (1067 mm) above the level of the deck.



Chapter 33 Revisions: BC 3307.6.5.2 and 6.5.3

3307.6.5.2 Supervision of installation, adjustment, repair, and removal.

The installation, adjustment, repair, or removal of a sidewalk shed shall be performed under the supervision of a competent person designated by the permit holder for the sidewalk shed.

3307.6.5.3 Responsibility for maintenance and use. Sidewalk sheds shall be maintained and used by the general contractor, or where there is no general contractor, the contractor causing the work to be performed, or where there is no active work, the building owner.



Chapter 33 Revisions: BC 3307.6.5.7

3307.6.5.7 Installation inspection.

Upon completion of the installation of a sidewalk shed, the shed shall be inspected by a qualified person designated by the designer, the permit holder for the shed, or a third party acceptable to both the designer and the permit holder to verify that the sidewalk shed is in a safe condition and has been installed in accordance with drawings and the requirements of this chapter. Following the inspection, the qualified person who inspected the sidewalk shed shall prepare, sign, and date an installation inspection report. A new installation inspection report shall be prepared each time the sidewalk shed is reinstalled at the site.



Chapter 33 Revisions: BC 3307.6.5.8

3307.6.5.8 Periodic inspection.

Six months following the initial installation inspection, and every six months thereafter, the sidewalk shed shall be inspected by a qualified person designated by the designer, the permit holder for the shed, or a third party acceptable to both the designer and the permit holder to verify that the sidewalk shed is in a safe condition and is in compliance with drawings and the requirements of this chapter. Following the inspection, the qualified person who inspected the sidewalk shed shall prepare, sign, and date an inspection report.



Chapter 33 Revisions: BC 3307.6.5.10

3307.6.5.10 Daily inspection.

Sidewalk sheds shall be visually inspected daily by a person designated by the general contractor, or where there is no general contractor, the contractor causing the work to be performed, or where there is no active work, by the building owner to verify:

The lights are functioning;

No brace or rail is hanging unattached at one or more ends;

No portions of the support structure are disconnected;

No section of parapet is missing; and

All legs remain on their support and are supported to the ground.



Chapter 33 Revisions: BC 3307.6.5.10 Continued

3307.6.5.10 Daily inspection.

Exception:

The inspections for a scaffold suspended or supported above a sidewalk shed shall be in accordance with Section 3314.



Chapter 33 Revisions: BC 3307.7

3307.7 Fences.

All sites where a new building is being constructed, or a building is being demolished to grade, shall be enclosed with a fence. Fences shall also be installed to fully or partially enclose sites, as necessary, where there exists an open excavation, an unenclosed portion of a building accessible at grade, or other hazard to the public. Such fences shall be at least 8 feet (2438 mm) high, built solid for their entire length out of wood or other suitable material, and shall be returned at the ends to the extent necessary to effectively close off the site.



Chapter 33 Revisions: BC 3307.7 Continued

3307.7 Fences.

Exceptions: The commissioner may approve the use of a chain link fence to:

1. Secure a site where work has been interrupted or abandoned and discontinued, and a registered design professional has certified that all construction or demolition equipment and material that pose a hazard to the safety of the public and property have been removed from the site or safely secured. Prior to the resumption of work, the chain link fence shall be replaced by a solid fence meeting the requirements of this section.



Chapter 33 Revisions: BC 3307.7 Continued

3307.7 Fences.

Exceptions: The commissioner may approve the use of a chain link fence to:

2. Secure portions of a site where a one- two- or three-family building, or a commercial building 40 feet (12 192 mm) or less in height, is being constructed or demolished and such building is setback at least 15 feet (4572 mm) from sidewalks or spaces accessible to the public and 5 feet (1524 mm) from adjoining buildings or structures.



Chapter 33 Revisions: BC 3308.1

3308.1 Scope.

Safety netting systems and guardrail systems shall be provided as required by this section to protect unenclosed perimeters. Except where this section authorizes the temporary removal of unenclosed perimeter protection, no work shall occur, nor shall materials be stored on any level where required unenclosed perimeter protection is not installed.



Chapter 33 Revisions: BC 3308.2

3308.2 Permit.

A permit is not required for the installation of safety netting systems and guardrail systems that are in accordance with this section. A permit is required for alternative methods granted under Section 3303.8, including but not limited to cocoon systems, climbing formwork, and enclosure panels.



Chapter 33 Revisions: BC 3308.6.1.1

3308.6.1.1 During construction.

When, during the course of new building construction, or during the vertical or horizontal enlargement of an existing building, the uppermost walkable floor reaches a height of six stories or 75 feet (22 860 mm) above the level of the ground or an adjoining roof, horizontal safety netting shall be provided at a level not more than two stories or 30 feet (9144 mm) below:

- 1. In concrete structures: the stripping floor; or
- 2. In steel structures: at the uppermost story where the concrete floor slab has been poured.



Chapter 33 Revisions: BC 3308.6.1.1 Continued

3308.6.1.1 During construction.

Exception:

When tarpaulins encase one or more floors immediately below the finished concrete floor in order to maintain temporary heat, the horizontal netting may be located no more than three floors below the finished concrete floor.



Chapter 33 Revisions: BC 3308.6.1.3

3308.6.1.3 During façade construction, alteration, maintenance, or repair.

Where unique hazards associated with the construction, alteration, maintenance, or repair of a façade exist to the public and property, horizontal safety netting shall be provided as required by the commissioner.



Chapter 33 Revisions: BC 3308.7.2

3308.7.2 Height of railings and toeboard.

Toprails, midrails, and toeboards shall be located as follows:

- 1. The top of the toprail shall be located at a height of 39 to 45 inches (991 and 1143 mm) above the floor.
- 2. The midrail shall be located at a height approximately midway between the toprail and the floor, or where more than one midrail is utilized, each shall be located equidistant from each other, the floor, and the toprail.
- 3. The toeboard shall be at least 3 ½ inches (89 mm) high and shall be installed so that there is not more than a ¼ inch (6 mm) gap between the floor and the bottom of the toeboard.



Chapter 33 Revisions: BC 3308.7.2 Continued

3308.7.2 Height of railings and toeboard.

Exception:

When conditions warrant, the height of the toprail may exceed the 45-inch (1143 mm) height provided additional midrails are installed so that there is no vertical gap larger than 24 inches (610 mm) between any toeboard, midrail, or toprail.



Chapter 33 Revisions: BC 3308.8

3308.8 Modifications and alternative systems.

The commissioner may, based upon a written request from a registered design professional, modify the requirements for safety netting systems and guardrail systems required by this section, including but not limited to the installation of alternative systems, provided such modification or alternative system meets or exceeds the level of safety afforded to the public and property by safety netting systems and guardrail systems installed in accordance with this section.



Chapter 33 Revisions: BC 3308.9

3308.9 Unenclosed perimeter protection inspection, use, adjustment, maintenance, and repair.

Safety net systems, guardrail systems, and alternative systems authorized under Section 3308.8 shall be inspected, used, adjusted, maintained, repaired, and replaced in accordance with the design drawings, manufacturer recommendations, and the requirements of this code.



Chapter 33 Revisions: BC 3309.1.1

3309.1.1 Notification.

Where a construction or demolition project will require access to adjoining property in accordance with this section, written notification shall be provided to the adjoining property owner at least 60 calendar days prior to the commencement of work. Such notification shall describe the nature of work, estimated schedule and duration, details of inspections or monitoring to be performed on the adjoining property, protection to be installed on the adjoining property, and contact information for the project. Where no response is received, a second written notification shall be made no more than 45 calendar days, and not less than 30 calendar days, prior to the commencement of work.



Chapter 33 Revisions: BC 3308.8

3308.8 Modifications and alternative systems.

The commissioner may, based upon a written request from a registered design professional, modify the requirements for safety netting systems and guardrail systems required by this section, including but not limited to the installation of alternative systems, provided such modification or alternative system meets or exceeds the level of safety afforded to the public and property by safety netting systems and guardrail systems installed in accordance with this section.



Chapter 33 Revisions: BC 3309.10

3309.10 Protection of roofs.

Whenever any building is to be constructed or demolished above the roof of an adjoining building, it shall be the duty of the person causing such work to protect from damage at all times during the course of such work and at his or her own expense the roof, skylights, other roof outlets, and equipment located on the roof of the adjoining building, and to use every reasonable means to avoid interference with the use of the adjoining building during the course of such work, provided such person causing such work is afforded a license in accordance with the requirements of Section 3309.2 to enter and inspect the adjoining building and perform such work thereon as may be necessary for such purpose; otherwise, the duty of protecting the roof, skylights, other roof outlets, and equipment on the roof of the adjoining building shall devolve upon the owner of such adjoining building.



Chapter 33 Revisions: BC 3309.10 Continued

3309.10 Protection of roofs.

Adjoining roof protection shall be secured to prevent dislodgement by wind. Where construction or demolition work occurs at a height of at least 48 inches (1219 mm) above the level of the adjoining roof, adjoining roof protection shall consist of 2 inches (51 mm) of flameretardant foam under 2 inches (51 mm) of flame-retardant wood plank laid tight and covered by flame-retardant plywood, or shall consist of equivalent protection acceptable to the commissioner, and shall extend to a distance of at least 20 feet (508 mm) from the edge of the building being constructed or demolished.



Chapter 33 Revisions: BC 3309.13

3309.13 Protection of adjoining equipment and spaces.

Whenever a major building is constructed or demolished, and provided such work requires a site safety plan in accordance with Section 3310, it shall be the duty of the person causing such work to protect from damage, at all times during the course of such work and at his or her own expense, all mechanical, electrical, and similar equipment on the adjoining property that are within 20 feet (508 mm) from an unenclosed perimeter of the major building, and to protect all publically accessible spaces on the adjoining property that are within 20 feet (508 mm) from an unenclosed perimeter of the major building, and also to use every reasonable means to avoid interference with the use of such equipment and spaces during the course of such construction or demolition work, provided such person causing such work is afforded a license in accordance with the requirements of Section 3309.2 to enter and inspect the adjoining property and perform such work thereon as may be necessary for such purpose; otherwise, the duty of protecting such adjoining equipment and spaces shall devolve upon the owner of such adjoining property.



Chapter 33 Revisions: BC 3309.13 Continued

3309.13 Protection of adjoining equipment and spaces.

Exception: Equipment on an adjoining roof shall be protected in accordance with Section 3309.10.



Chapter 33 Revisions: BC 3309.14

3309.14 Protection of windows.

Whenever exterior construction or demolition work occurs, and such work results in an unenclosed perimeter, it shall be the duty of the person causing such work to protect from damage, at all times during the course of such work and at his or her own expense, all windows on adjoining private property that face such work and are 20 feet (508 mm) or less from an unenclosed perimeter, provided such person causing such work is afforded a license in accordance with the requirements of Section 3309.2 to enter and inspect the adjoining property and perform such work thereon as may be necessary for such purpose; otherwise, the duty of protecting the adjoining windows shall devolve upon the owner of such adjoining building. Where the window provides required means of lighting, ventilation, or egress, such protection shall not be allowed to interfere with such required means.



Chapter 33 Revisions: BC 3309.14 Continued

3309.14 Protection of windows.

Exceptions: Window protection is not required for:

- 1. Minor alterations and ordinary repairs.
- 2. Work performed on a 1-, 2- or 3-family detached house or accessory use to such.
- 3.Where all unenclosed perimeters are protected by vertical netting that meets the requirements of Section 3308.5, or an approved alternate system, that extends to cover the full height and width of the unenclosed perimeter; or a supported scaffold covers the full width of the unenclosed perimeter, provided the scaffold is decked and flush against the building at such level where the unenclosed perimeter exists, with no gap between the scaffold and the building greater than 3 inches (76 mm), and also provided that the scaffold is provided with netting and guardrails in accordance with Section 3314.



Chapter 33 Revisions: BC 3309.15

3309.15 Modifications and alternate methods.

The commissioner may, based upon a written request from a registered design professional, modify the requirements for adjoining property protection required by this section, including the installation or use of alternative methods, provided such modification or alternative method meets or exceeds the level of surveying, monitoring, inspection, or protection, as applicable, afforded to the public and property by this section, and also provided the insurance requirements of Sections 103 and 105 of Title 28 of the Administrative Code are satisfied.



Chapter 33 Revisions: BC 3310.4

3310.4 Site safety monitoring program.

For a project that requires a site safety plan, the general contractor shall enact and maintain a site safety monitoring program to implement such site safety plan. The site safety monitoring program shall, at a minimum, comply with Sections 3310.5 through 3310.10.

Exception: Subject to the approval of the commissioner, a site safety monitoring program may be waived, reduced, or modified in accordance with Section 3310.11.



Chapter 33 Revisions: BC 3310.5.2

3310.5.2 Presence at the site.

For the construction or alteration of a building, the primary site safety manager or coordinator shall be present at the site during all times while active work is occurring and through all phases of work, beginning with excavation and continuing until the building is enclosed and the sidewalk shed removed.



Chapter 33 Revisions: BC 3310.5.2

Exceptions:

- 1. The primary site safety manager or coordinator is not required to be present at the site during the following activities, provided no other work is in progress.
- 1.1. Surveying that does not involve the disturbance of material, structure, or earth;
 - 1.2. Use of a hoist to transport personnel only;
 - 1.3. Use of a material hoist that is fully enclosed within the perimeter of the building;
 - 1.4. Finish trowelling of concrete floors;
 - 1.5. When personnel are provided for temporary heat, light, or water;
 - 1.6. Truck deliveries to the site where the sidewalk is closed and the entrance gate is within that closed sidewalk area.



Chapter 33 Revisions: BC 3310.5.2 Continued

Exceptions:

2. Subject to the approval of the commissioner, the requirement for a site safety manager, or where a site safety coordinator is authorized by this code, a site safety coordinator, may be waived entirely, or reduced to a part time basis with such part time basis determined by the commissioner, in accordance with Section 3310.11.



Chapter 33 Revisions: BC 3310.8.2.1

3310.8.2.1 Notification of conditions to the department.

The site safety manager or coordinator shall immediately notify the department directly if he or she discovers any of the following conditions in the routine performance of the job:

- 1. A person is operating a crane, derrick or hoisting equipment on the site without a permit and refuses to desist from operating the equipment;
- 2. A crane is being operated by an unlicensed operator and such unlicensed operator refuses to desist from operating the crane;



Chapter 33 Revisions: BC 3310.8.2.1 Continued

- 3. No flag person is present during crane operation where required by this chapter;
- 4. Sidewalk sheds required by the site safety plan are not in place during construction or demolition activity;
- 5. Permits have not been issued for the sidewalk sheds;
- 6. The designer and/or supplier of sidewalk sheds has not certified that the sheds have been erected in accordance with the approved drawings;
- 7. Any accident as defined by this chapter;
- 8. Required standpipe is not in place at each story below the construction or demolition floor;



Chapter 33 Revisions: BC 3310.8.2.1 Continued

- 9. Required standpipe valves are not in place at each story below the construction or demolition floor;
- 10. Required standpipe is not capped;
- 11. Required standpipe is not connected to a water source or fire department connection;
- 12, Required standpipe fire department hose connection is obstructed;
- 13. Required standpipe fire department hose connections are not marked by a red light and a sign reading, "Standpipe Connection";



Chapter 33 Revisions: BC 3310.8.2.1 Continued

- 14. A breach exists in the required standpipe risers, cross connections, or fire department connections;
- 15. The standpipe alarm activates; or
- 16. When a building over 75 feet (22.86 m) is being constructed or demolished and at least one elevator in a state of readiness or one hoist is not available for FDNY access per Section 3303.12.



Chapter 33 Revisions: BC 3310.8.3

3310.8.3 Inspections.

It shall be the responsibility of the site safety manager or coordinator to inspect personally, on a regular basis throughout the day while active work is occurring, the site to ensure compliance with the requirements of this chapter. At a minimum, inspections shall consist of those prescribed in rules promulgated by the commissioner, with such inspections performed personally by an individual certified by Chapter 4 of Title 28 of the *Administrative Code* as a site safety manager or coordinator.



Chapter 33 Revisions: BC 3310.8.4

3310.8.4 Site safety log.

A site safety log shall be maintained and kept at the site.



Chapter 33 Revisions: BC 3310.11

3310.11 Modifications to the site safety monitoring program.

The commissioner may, based upon a written request from a registered design professional, waive, reduce, or modify the requirements for the site safety monitoring program for a job of a limited scope or duration, provided such waiver, reduction, or modification is not detrimental to the safety of the public and property, or that alternative means of protection for the public and property meeting or exceeding those afforded by this section are provided. A submission under this section may include, but not be limited to, a request to reduce or modify the type or frequency of inspections performed by the site safety manager or coordinator, or to allow a part time site safety manager or coordinator, or to waive the requirement for a site safety manager or coordinator.



Chapter 33 Revisions: BC 3314.1.1

3314.1.1 Height.

For the purposes of this section, the height of a scaffold shall be measured from the base of the scaffold to the top of the uppermost vertical member of the scaffold, with any temporary structure, but not any permanent structure, on which the scaffold rests included in the height measurement.



Chapter 33 Revisions: BC 3314.3.4

3314.3.4 Loads imposed.

Where a supported scaffold sits on a sidewalk shed or other temporary structure, the scaffold drawings shall be accompanied by a loads imposed letter signed, sealed, and dated by a registered design professional. The letter shall detail the loads to be imposed by the scaffold onto the base structure and indicate that the registered design professional has reviewed the adequacy of the base structure to sustain the load imposed.



Chapter 33 Revisions: BC 3314.4

3314.4 Installation, inspection, repair, maintenance, adjustment, use, and removal of scaffolds.

Scaffolds shall be installed, inspected, repaired, maintained, adjusted, used, and removed in accordance with the specifications of the manufacturer, where such specifications exist, and the requirements of Section 3314.4.1 through 3314.4.8.



Chapter 33 Revisions: BC 3314.4 Installation of Suspended Scaffold

Supervision of the <u>Installation</u> of <u>Suspended</u> Scaffold:

- 1. Installation of suspended scaffolds (for all work, except facade work where a Site Safety Monitoring Program is NOT required) can be supervised by **either** a licensed rigger/designated foreman with requisite 32H training for supervisor and 16H training for crew; or by a "competent person" with same requisite training.
- 2. Installation of suspended scaffolds for facade work NOT requiring a Site Safety Monitoring Program (major buildings 14 stories and under), must be by licensed rigger/designated foreman with requisite 32H training for supervisor and 16H training for crew.



Chapter 33 Revisions: BC 3314.4 Installation of Suspended Scaffold Continued

3. In all cases, scaffold designer must designate a qualified person to inspect **before installation** and the designer or his designee must **inspect at completion** of installation and issue a sign-off letter. A safety checklist must be provided by the licensed rigger or registered design professional for conducting pre-use daily inspections.



Chapter 33 Revisions: BC 3314.4 Use of Suspended Scaffold

Supervision of the <u>Use</u> of <u>Suspended</u> Scaffolds:

1. Supervision of the use of a suspended scaffold (for all work, except facade work where a Site Safety Monitoring Program is NOT required) can be <u>either</u> by a licensed rigger/designated foreman with requisite training (32H,16H) or by a "competent person" with requisite training designated by "scaffold controlling entity". Pre-use and daily inspections shall be conducted in accordance with a safety checklist provided by the licensed rigger or registered design professional.



Chapter 33 Revisions: BC 3314.4 Use of Suspended Scaffold

Supervision of the <u>Use</u> of <u>Suspended</u> Scaffolds:

2. For facade alterations NOT requiring a Site Safety Monitoring Program, supervision of the use of a suspended scaffold must be by a licensed rigger/designated foreman with requisite experience (32H, 16H). Pre-use and daily inspections shall be conducted in accordance with a safety checklist provided by the licensed rigger.



Chapter 33 Revisions: BC 3314.4.1.5

3314.4.1.5 Notification of adjustable suspended scaffold installation and removal.

Prior to the initial installation of the adjustable suspended scaffold at a site, and prior to the final removal of the adjustable suspended scaffold at a site, the department shall be notified at least 24 hours, but not more than 48 hours, prior to such installation or removal. Such notification:



Chapter 33 Revisions: BC 3314.4.2.2

3314.4.2.2 Supervision of supported scaffold use.

The use of a supported scaffold shall be supervised by a competent person designated by the scaffold controlling entity.

Scaffold controlling entity:

The contractor or other entity that exercises responsibility for the site where scaffold is located.



Chapter 33 Revisions: BC 3314.4.4.5.3

3314.4.5.3 Training for suspended scaffold supervisors.

Individuals who exercise supervisory responsibility in accordance with the requirements of Sections 3314.4.1 through 3314.4.4 for the installation, adjustment, repair, maintenance, use, or removal of a suspended scaffold shall, at a minimum, have completed a departmentapproved training program or course that is at least 32 hours long and, four years following completion of the 32hour program or course, and every four years thereafter, complete a department-approved 8-hour refresher program or course.



Chapter 33 Revisions: BC 3314.4.4.5.4

3314.4.5.4 Training for suspended scaffold installers, adjusters, repairers, maintainers, users, inspectors, or removers.

Individuals who install, adjust, repair, maintain, use, inspect, or remove a suspended scaffold shall, at a minimum, have completed a department-approved training program or course that is at least 16 hours long and, four years following completion of the 16-hour program or course, and every four years thereafter, complete a department-approved 8-hour refresher program or course.



Chapter 33 Revisions: BC 3314.4.9.4

3314.9.4 Supported scaffolds at the edge.

Supported scaffolds located on a floor, working deck, or roof and located within a distance from the edge of the roof or an unenclosed perimeter that is equal to or less than 1.5 times the height of the scaffold shall:

1. Be positively anchored or tie-backed, and with all wheels or rollers secured by rope, cable, or chocking at the wheels in order to prevent movement; and



Chapter 33 Revisions: BC 3314.4.9.4 Continued

- 2, Have all sides of the scaffold facing an unenclosed perimeter or the edge of a roof within a distance that is equal to or less than 1.5 times the height of the scaffold provided with guardrails and debris netting in accordance with Section 3314.8; or
- 3. Have all material and equipment susceptible to dislodgement, and not being actively held by a person, secured in a manner to prevent dislodgement by wind or accidental impact.



Chapter 33 Revisions: BC 3316.9.3

3316.9.3 Industrial rope access.

Any person using industrial rope access methods to descend or ascend outside a building, including the individual supervising such, must be certified by either the Society of Professional Rope Access Technicians ("SPRAT") or the Industrial Rope Access Trade Association ("IRATA"), or an equivalent acceptable to the department. Only hand tools, securely attached to a person, may be carried by such person during the use of industrial rope access methods. Any other tools or equipment must be separately hoisted or lowered.





Major Projects









Introduction

The Department of Buildings recognizes that large scale construction projects can often times be highly complex and in most cases present significant safety challenges both to the public and itself; as such they require an increased coordination effort between developer, general contractor and City government.



Major Projects Program

In response, the agency has created the Major Project program, a more focused construction safety and oversight unit whose mandate is simple:

Leverage construction safety oversight on largescale, construction projects through open discussions, and problem resolution with industry professionals and developers.



Major Projects Past

The Major Projects program was first introduced in 2008 and was directly involved with the construction safety oversight of three Major Projects.





Major Projects Present

Today the program has grown to more than 125 projects throughout the five boroughs with projects ranging in cost from \$10 million to well over \$2 billion.





Key Components:

The Major Projects program seeks to accomplish this mandate though four key components:

Periodic meetings with developer/project owner, general contractor and safety coordinators.

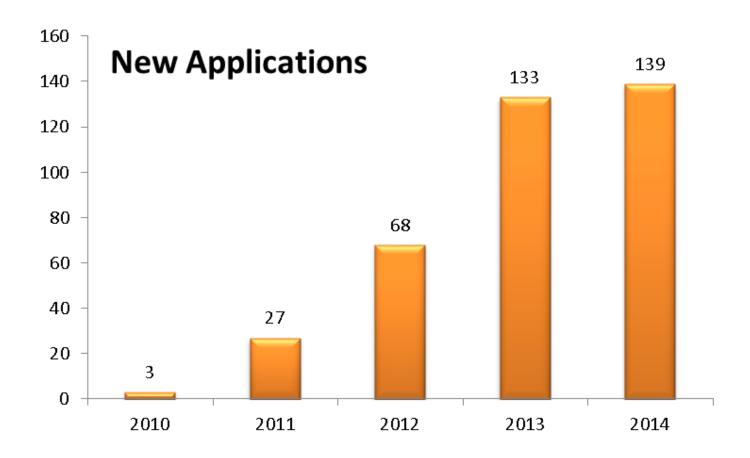
Single point of contact within the agency for problem resolution and or direction.

More focused enforcement actions.

Coordinated oversight across all specialty units within the Department.



Major Projects Program Statistics:





Enrollment Process

Enrollment in the major projects program is currently on a voluntary basis and affords the developer and general contractor substantial benefits, which include but are not limited to:

- Coordinated site safety logistical planning.
- Coordinated application processing.
- Single point of contact for Stop Work Order resolution under the SWO program.
- Single point of contact for coordination between departmental units.



Enrollment Process Continued

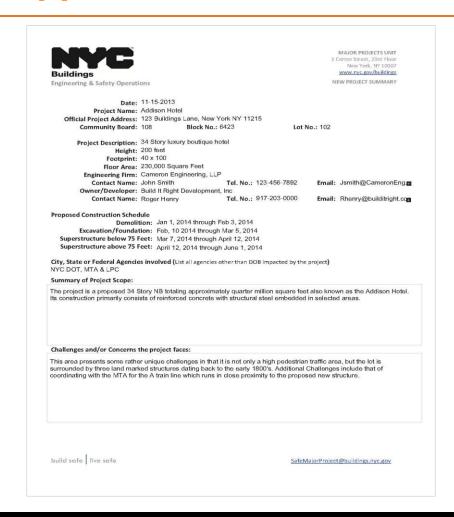
To enroll in the Major Projects program, an owner, developer or contractor must submit a request for an application to the Major Projects Unit via the following email address:

SafeMajorProject@buildings.nyc.gov

The Major Project summary application must be fully completed before being submitted for consideration.



Enrollment Application





Enrollment Application Continued

102210368	Appl. Type NB	Date filed 02-16-2013	Status Approved	Description 34 Story NB totaling approximately quarter million
List all Cranes	associated with the	Project (This incl	udes a wish list of all d	esired Cranes)
Crane Typ	e CN No.	CD No.	Anticipated Date of Delivery	Comments
тс	34216	20314	March 6, 2014	



Qualification Criteria

Any "Major Building", as defined in the 2008 Building Code 3310.2 as 10 or more stories; 125 feet or higher; 100,000 sq. ft. or more lot coverage; or designated by the Commissioner; or

Projects that present a "Heightened Safety Challenge" such as congested areas; high-risk construction, such as demolitions or excavations; work during occupancy; or high-occupancy load; or

Projects that require "multiple City, State and/or Federal regulation".



Review process

Each new enrollment application goes through a two part review process.

- 1. The MP summary application is first reviewed to determine if a project meets the general criteria on paper.
- 2. A kick off meeting is scheduled with the Project Team and Major Projects Team to discuss the project in detail.

Based on the information gathered, a determination is made on acceptance or denial of entry into the program.



Next Steps

If a project is denied entry, the project team will be notified via letter of such denial inclusive of a reason for the denial.

If a project is accepted, that project will then be placed on a cyclical Inspection schedule and assigned a direct point of contact whom the project team will meet with as needed until a TCO has been issued.

All inspections are performed by the West Side Safety Team, composed of personnel BEST, Scaffold Safety Team, Excavations and Cranes and Derricks.



What The Major Projects Program is Not

The program does not:

Absolve responsible parties from any responsibility to comply with all applicable codes, rules and regulations as they apply to a project.

Prohibit a project from being violated when warranted and or stopped when required.



The Vision of the Major Projects Program

Promote innovation.

Share information.

Communicate expectations.

Enforce expectations.

Improve common goals.

Leverage technology.



Questions?

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

AIA Point of Contact:

Allison Ginsburg

AllisonGo@buildings.nyc.gov

212.393.2167

