

# American Institute of Architects Continuing Education System

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





### **Course Description**

This course will discuss critical building code requirements related to sidewalk sheds, supported scaffolds, construction fences and associated signage as described in the 2014 NYC Building Code. The course will also discuss specific requirements outlined in the recently enacted Local Law 47 of 2013. The emphasis is on protecting the general public through construction site safety and leveraging Hub *Self-Service* to improve safety and save time and money.



### **Learning Objectives**

- 1. Participants will review and be able to apply critical 2014 NYC Building Code requirements related to side-walk sheds to protect pedestrians from falling debris and to ensure the safety and welfare of the building's occupants and the neighborhood.
- 2. Participants will review and be able to apply critical 2014 NYC Building Code requirements related to supported scaffolds to provide safe access to construction workers for work on elevated platforms and to ensure construction phase safety.
- 3. Participants will review and be able to apply critical 2014 NYC Building Code requirements related to construction fences to ensure adequate safeguards for the protection of general public.
- 4. Participants will review LL 47/2013 and be able to apply additional requirements related to side-walk sheds, construction fences and associated signage.



### **Topics**

Critical 2014 Building Code requirements for construction fences

Critical 2014 Building Code requirements for sidewalk sheds

Critical 2014 Building Code requirements for supported scaffolds

Leveraging Hub Self-Service to improve construction safety and save time and money

**Questions and Answers** 



### **Construction Fences**





### **Construction Fences**

When, where and why are they required?

What must be submitted to obtain a permit?

Critical Building Code requirements

Critical construction and maintenance requirements

Relevant Local Law:

Local Law 47 of 2013 (Project Information Panel)



### Where, when and why are they required?

#### BC 3307.7

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.



## **Construction Fence at a New Building Site**





#### BC 3307.7

Construction fence shall be at least **8 feet high**, constructed of wood or other suitable material. It shall be **built solid for its entire length**, except for openings with solid sliding or in swinging gates. The fence shall be returned at its ends to the extent necessary to effectively close off the site.



### BC 3307.7 Exceptions.

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

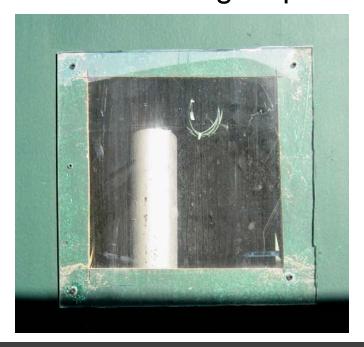
**Secure a stalled site** with certification from PE/RA stating that all equipment and materials that could pose safety risks have been removed, provided a solid fence is constructed when work resumes.

1-, 2-, 3-family or commercial building 40' or less in height, provided it is set back 15 feet from sidewalks/public paths, and 5 feet from adjoining structures or buildings.



### **BC 3307.7.3 View panels.**

View panels (12" x 12") shall be provided at each frontage and **every 25 linear feet** to facilitate site inspection. Panels shall be covered with clear Plexiglas/plastic.





#### BC 3307.7.2 Gates.

Gates shall be sliding or **shall swing into areas not accessible to the public**, and shall be provided only where required for access to the site or to facilitate the work.

Gates shall consist of the **same material** and construction as the rest of the fence.

**Exception:** Where approved by the commissioner, chain link gates may be utilized in a solid fence.

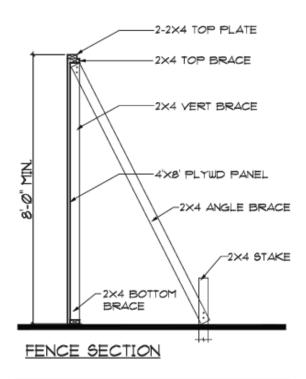


## **Chain Link Gate at a New Building Site**



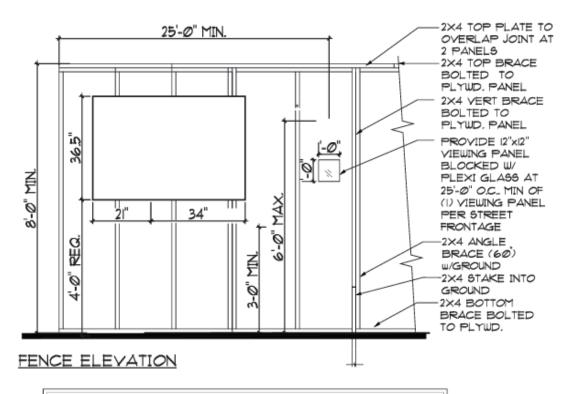


### What documents are required for a permit?





-FENCES SHALL BE AT LEAST 8' HIGH AND CONSTRUCTED OF WOOD OR OTHER SUITABLE MATERIAL. THEY SHALL BE BUILT SOLID FOR THEIR ENTIRE LENGTH AND PAINTED HUNTER GREEN



#### NOTE

-PROJECT INFORMATION PANEL SHALL BE POSTED ON EACH PERIMETER FACING A PUBLIC THOROUGHFARE. WHERE SUCH PERIMETER IS MORE THEN 150'-0", A PROJECT INFORMATION PANEL SHALL BE POSTED AT EVERY CORNER

-PROJECT PANEL DEPICTED IS SPECIFIC TO BUILDINGS WITH STREET FRONTAGE LESS THEN 60LF, REFER TO B.C. 330L9 FOR PANEL DETAILS ON LOTS WITH GREATER THEN 60 LF.



NOTE:

## **Design of Fences**

### BC 3307.7.5

Fence installations shall be designed by a registered design professional.

The effect of wind on the fence shall be considered in the design in accordance with Chapter 16.



### **Design of Fences**

#### BC 3307.7.5

Exceptions to design by a registered design professional:

Fences installed in connection with the construction or demolition of a **one-**, **two- or three-family building**.

Fences that conform to a standard design approved by the commissioner provided the fence is installed at the site in accordance with the standard design.



## What are the Construction / Maintenance Requirements?

### BC 3307.7.7

All fences shall be installed, adjusted, repaired, and maintained in a sound condition, free of protruding or loose nails, wood, or metal, and with posts in an upright position restrained to prevent the fence from leaning or overturning.

**BC 3307.7.8** Fences erected on or after July 1, 2013, shall be painted hunter green.



## What are the Construction / Maintenance Requirements?

### BC 3307.10 Facilitating city work.

In the event a duly authorized city agency must repair, maintain, or install city property such as intersection control signs, electrical equipment, traffic signals, bus shelters, street lighting, fire hydrants, etc. at a location where a fence is located; it shall be removed as directed by the department of buildings as long as the removal is deemed to be safe and, if necessary, suitable appropriate pedestrian protection that does not interfere with the work of such city agency is installed.



#### BC 3301.9

Signs on construction fence are required at a construction or demolition site.

#### BC 3301.9.1

A project information panel is required for all new permits and upon permit renewals on or after July 1, 2013.

Project information panels at government owned or funded sites may be modified per Department rule.

Signs at sites with 1-, 2- or 3-family dwellings may comply with BC 3301.9.3 instead.



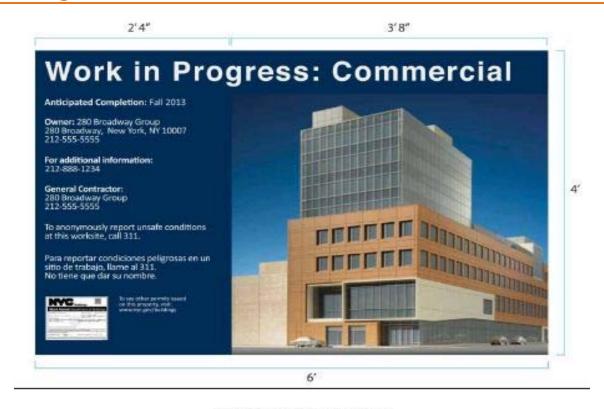
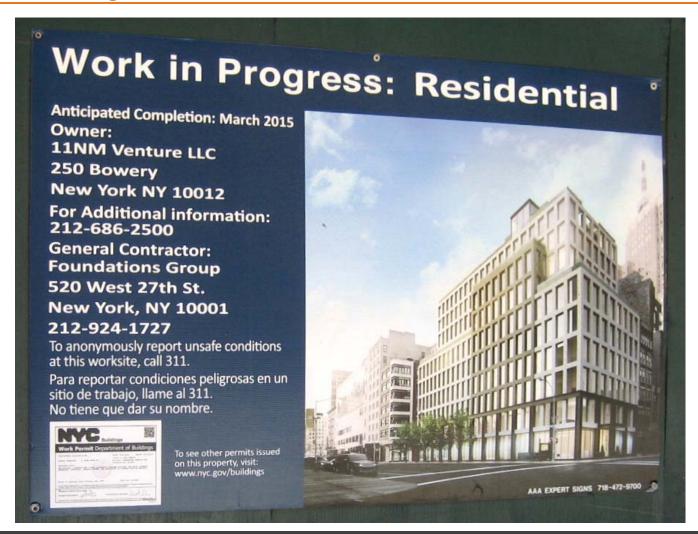


FIGURE 3301.9.1.4(2)
FENCE PROJECT INFORMATION PANEL LAYOUT







### BC 3301.9.1.1

Project information panel shall contain the following:

A rendering, an elevation drawing or a zoning diagram. (Not required for demolition jobs.) No logos.

Title "Work in Progress"

Anticipated completion date

Owner's information

Contact information of owner

Contact information of GC/demolition contractor

Statement regarding "Call 311" in English and Spanish

Primary permit laminated with information on access to other permits.



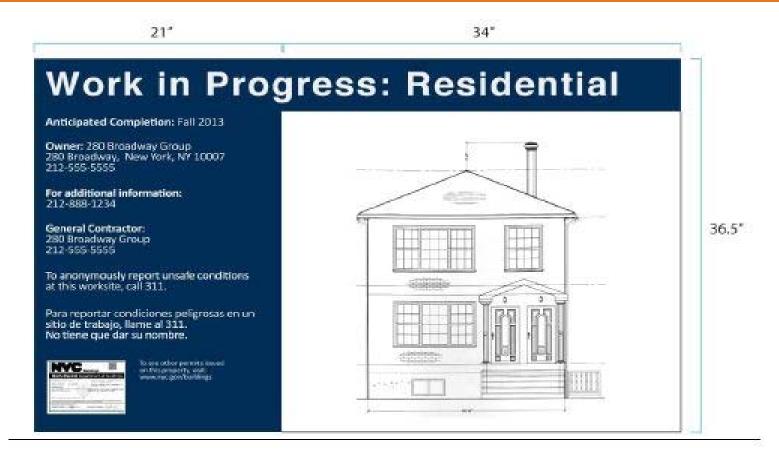


FIGURE 3301.9.1.4(3)
FENCE PROJECT INFORMATION PANEL LAYOUT FOR SMALL LOTS



**BC 3301.9.1.2 Location of information panel**. On perimeter facing a public thoroughfare. On each corner if more than 150 feet in length. Posted 4' above the ground / bottom edge of the panel.

**BC 3301.9.1.3 Information panel material**. A durable and weatherproof material such as vinyl, plastic, or aluminum, and such material shall be flame retardant in accordance with NFPA 701 or listed under UL 214.

BC 3301.9.1.4 6' x 4' high. Minimum 1" high letters Calibri/sans serif. White on blue background. Pantone 296.



# Local Law 47 of 2013: Fence Information Panel 1-, 2- and 3-Family Dwellings

**BC 3301.9.3** Construction or demolition sites for 1-, 2- and 3-family dwellings:

The sign shall be no more than 12 feet above ground, shall be made of  $\frac{3}{4}$ " plywood or of metal, aluminum, vinyl or plastic with equivalent strength, durability and weatherproofing. Signs shall be with black letters on white background. The letters shall be no less than 3" high.

The sign shall contain following information:

Owner information

GC /demo contractor information

Statement regarding "Call 311"



### **Sidewalk Sheds**





### Sidewalk Sheds

When, where and why are they required?

What must be submitted to obtain a permit?

Critical Building Code requirements

Critical construction and maintenance requirements

Relevant Local Laws

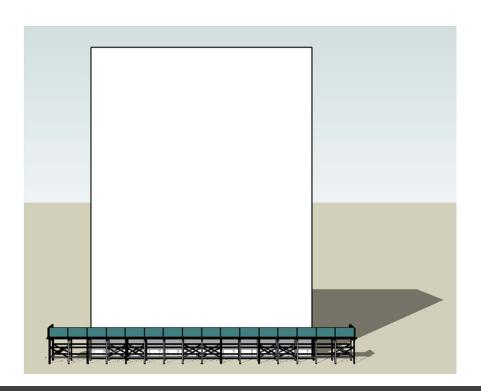
Local Law 47 of 2013 (Parapet Panel)



## When, where and why are they required?

### BC 3307.6

To protect pedestrians from construction or demolition operations and from debris that might fall from work going on above that sidewalk.





### When, where and why are they required?

#### BC 3307.6.2

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:

When a **new building is over 40ft** and the **distance** between the sidewalk and the building is **equal to or less than half the height of the building**.

When a portion of a **façade over 40 feet** above curb level is to be constructed, altered, maintained, or repaired, or a **vertical or horizontal enlargement is to occur** at a height over 40 feet and the building is **equal to or less than half the height of the building.** 

When the structure being demolished is over 25 feet or exterior partial demolition is to occur at a height greater than 25 feet.

When such sidewalk, walkway, or pathway is to be **located immediately** below a scaffold, mast climber, or chute.



## When, where and why are they required?

**BC 3307.6.2 Exceptions** (Unless specifically required by the Commissioner)

Sidewalks that are closed for their full width, to public.

Temporary walkways per BC 3307.2.3

Inspections, provided no work occurs during inspections.

Sign hanging under the supervision of a licensed sign hanger.

Window washing.

Work confined to roof with 42" high solid parapet or vertical safety netting per BC 3308.5

Work of limited scope and duration subject to the approval of the commissioner.









## What documents are required for a permit?

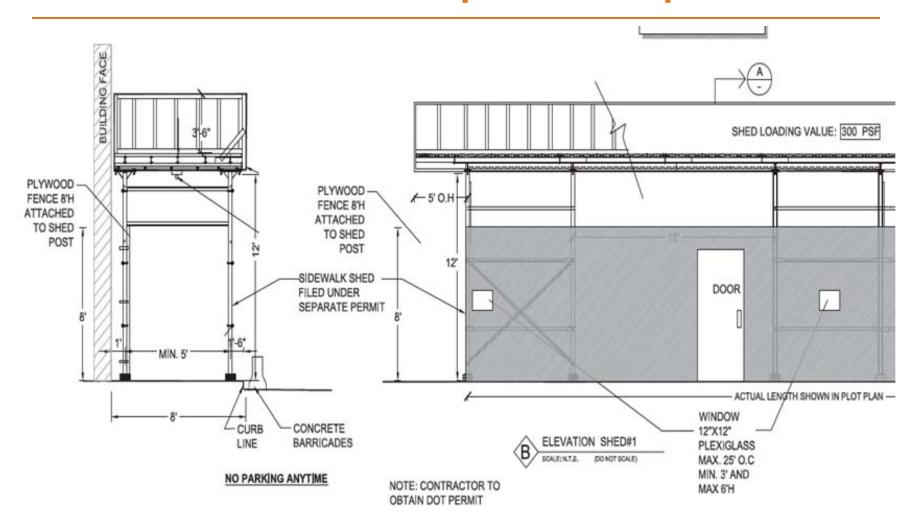
Plot plan showing streets and shed location is required. For buildings that are setback from the street, a shed is required along the path connecting entrance/exit and the sidewalk. The shed must extend five feet beyond the building (for less than 100' high structures), or extend 20 feet past the building (for more than 100' high structures).

Design loads, design drawings, elevations, typical details and notes

Electrical permit from the Electrical Unit



### What documents are required for a permit?





BC 3307.6.1 No sidewalk shed shall be installed without a permit in accordance with the requirements of Chapter 1 of Title 28 of the Administrative Code.

**BC 3307.6.2** If the shed **extends beyond the curb line** into a public street, an **approval from DOT is required**.

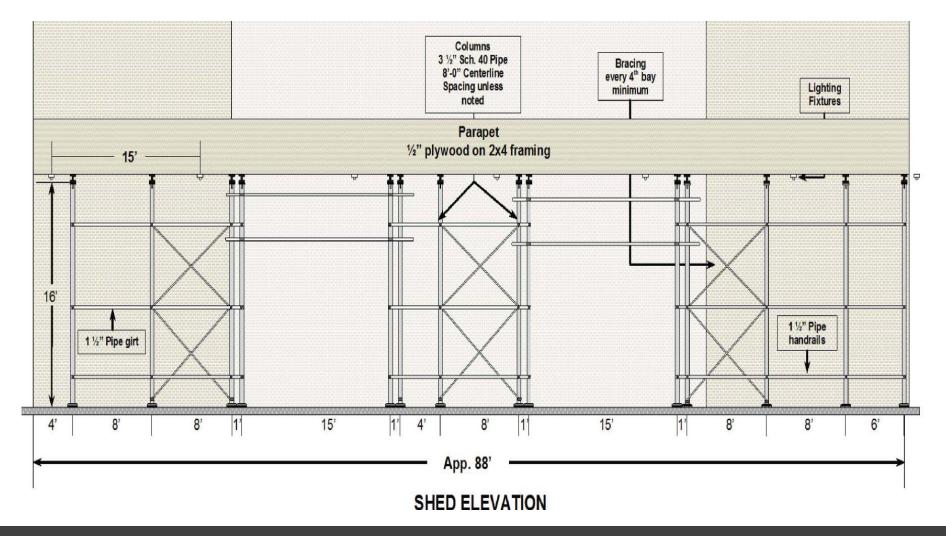
**BC 3307.6.2** A shed cannot obstruct entrances, egress, fire escapes, driveways, show windows, DOT street signs, etc.

**BC 3307.2.6 & 3307.6.4.7** The sidewalk shed must leave a clear path a of **minimum of five feet wide** and a **clear height of 8 feet**.

**BC 3307.6.4** The outer sides and ends of the overhead deck shall be 3'-6" high with either vertical or a 45 degree angle enclosure.



### What documents are required for a permit?





#### BC 3307.6.4 Design and construction of sidewalk sheds.

A sidewalk shed must be designed by a registered design professional or follow a standard BSA approved design.

If the shed is based on a BSA approved design, minimum design loads and specific member sizes, spans and spacing must be highlighted. If the BSA approved sidewalk shed design is utilized, you must verify that the shed is within the scope of the design by ensuring that:

Height does not exceed maximum height

Width does not exceed maximum width

Parapet does not exceed the height limit

Details/connections are in full compliance



#### BC 3307.6.4.2 Design loads and structural requirements.

Sidewalk sheds for buildings 100 ft or more in height shall be designed for a live load of 300 psf (heavy duty sidewalk shed). For buildings under 100 ft in height, the minimum sidewalk design live load shall be 150 psf (light duty sidewalk shed) provided that no item is stored or placed upon the shed.

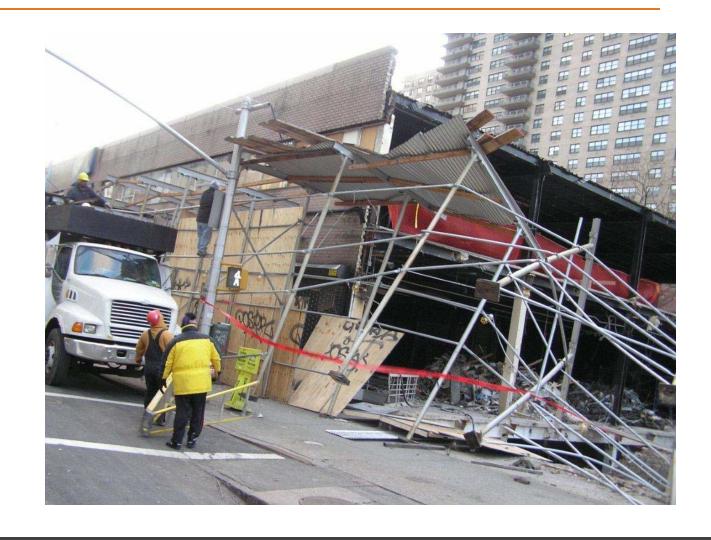
A sidewalk shed that provides a base for supported scaffold cannot use a BSA approved design. Sheds must be designed for live loads in addition to imposed loads from the scaffold.

Members shall be adequately braced and connected to prevent displacement or distortion of the framework.

Free-standing sidewalk sheds must meet code requirements for overturning and sliding.



BC 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.





#### BC 3307.6.4 Materials and construction requirements.

A sidewalk shed can be of wood, steel or equivalent material.

DOT permit is required if it extends beyond the curb line.

The shed must be plumb with a tolerance of L/100.

The deck shall consist of planking that is laid close together and made tight.

The shed must be built solidly against the structure or the side facing the structure shall be sealed solidly with wood for full height of the shed, except for solid sliding/swinging gate as required.

The outer sides and ends of the overhead deck shall be 3'-6" high with either vertical or a 45 degree angle enclosure. Constructed with solid plywood or 16 gauge galvanized wire screen mesh with ½ inch mesh.



# Wheelchair Accessibility Requirements

#### BC 3307.2.6 Accessibility requirements.

Sidewalks, walkways, foot bridges, and pathways that remain open to the public shall be accessible and shall be provided with:

A clear path, free of obstruction, at least 5 feet in width;

A durable walking surface capable of supporting all imposed loads and no less than 150 PSF;

Mirrors at all blind corners;

Where there is a change in elevation along the walkway or footbridge, a ramp with 1:12 slope and a 5 feet long level landing at top and bottom of each run; and

Where slope is greater than 1:20 and a total rise greater than 6 inches handrails are required.

**Exception:** Where a 5 feet clear path is not possible, obtain approval from DOT and also comply with ADA guidelines.









#### **Protection of Public from Hazards**

#### BC 3307.4 Warning signs, personnel, and barriers.

To be provided to protect the public from hazards generated by construction or demolition activity in or adjacent to a public way

Obstructions or openings located in a public way shall be marked and guarded by barriers, flags, or signs in accordance with the DOT requirements

Where special danger exists such as vehicle entrances and exits, hoisting areas, blasting areas, or discharge ends of chutes, warning signs shall be provided per DOT requirements.

A flag person shall be provided whenever intermittent operations are conducted on, or adjacent to, areas open to use by persons other than workers, or when dangerous operations, such as blasting, may affect such areas.



# What are the Construction / Maintenance Requirements?

#### BC 3307.6.5.8 & 3307.6.5.10

All sidewalk sheds must be inspected visually on a **daily basis** and the results of these inspections must be recorded in daily inspection reports. All sidewalk installations must be inspected **every 6 months** for compliance with plans and recorded in periodic inspection reports.

#### BC 3307.6.5

Material and debris shall not be stored on sidewalk sheds unless it is so designed.

#### BC 3307.10

A sidewalk shed shall be maintained in place and kept in good order for the entire length of time pedestrians may be endangered. Upon completion of construction or demolition activity, such temporary protections shall be removed the public property must be returned to its original condition.



# What are the Construction / Maintenance Requirements?

General Information	Permit #
Name of Scaffold Erector	Installation Date Expiration
Renters Name	Phone #
Shed type Light Med HeavyDuty	Drawings on Site for inspection?
Specific Information	Scaffold Height
Number of platforms decked	Are the base plates & mudsills secured?
Are the signs on the parapets?	Are all the Scaffold pins & bolts installed?
Maintenance Information	Are the legs and poles plumb, braced and not displaced?
Are cross braces fully attached, not bent, and not missing?	Are tie-ins correctly spaced, properly secured & the correct amount?
Are pipe clamps tight?	Are window jacks tight?
Are all the planks secured?	Are decking and planks in good condition?
Is deck fully planked?	Are there gaps or open spaces on decking?
Are the guardrails & toe boards secured at all places where required?	Is the netting extension of full length and height?
Is the netting secured?	Is the parapet the proper height and secured?
Are the lights working?	Is the deck clean and free of debris?
Name:	
Signature:	Date:



# **Maintenance and Inspection Requirements**

# BC 3307.6.5 Installation, adjustment, maintenance, repair, use, inspection, and removal of sidewalk sheds.

Maintain in safe condition and used in manner that eliminates hazards to public.

Decks of sidewalk sheds shall be broom swept and cleaned of material daily while active work is occurring at the site.

Installation inspection by a qualified person and inspection report. Periodic inspections and reports every six months. Inspection and report following adjustment or repair. Daily visual inspection by a GC designated person and report, to verify that:

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.

Notify DOB within 2 days of complete removal.



# BC 3301.9.2 Where sidewalk shed is installed, a sidewalk shed parapet panel is required.

#### Exceptions:

Where a permit was issued or renewed prior to July 1, 2013, signs per BC 3301.9.4 are acceptable; however a parapet panel shall be installed upon permit renewal on or after July 1, 2013.

Signs at sites with 1-, 2- or 3-family dwellings may comply with BC 3301.9.4 instead.



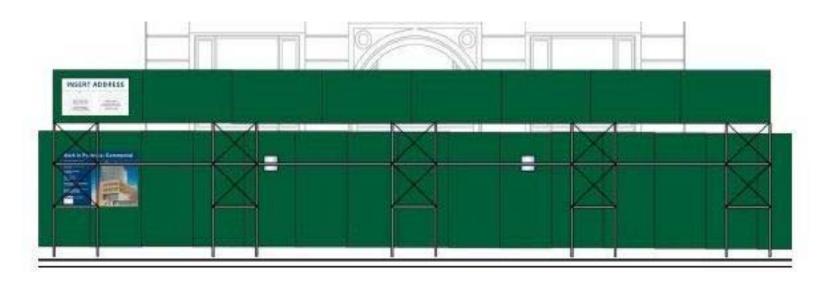


FIGURE 3301.9.2.2
PANEL POSTING ELEVATION DIAGRAM





FIGURE 3301.9.2.1(1)
SIDEWALK SHED PARAPET PANEL LAYOUT



**BC 3301.9.2.3 Parapet panel material**. A durable and weatherproof material such as vinyl, plastic, or aluminum, and such material shall be flame retardant in accordance with NFPA 701 or listed under UL 214.

**BC 3307.1.1** Other than as specified in 3301.9 and 3301.10, no sign, information, pictures, advertisement or business messages shall be posted on a sidewalk shed, bridge or construction fence. No illuminated signs are permitted on any protective structure.

#### BC 3301.9.4 Acceptable signs for 1-, 2- and 3-family

**dwellings.** They must be readily visible from the street and shall be posted on the parapet along its long axis with following information:

Permit holder info

Permit number

Expiration date of permit



# **Supported Scaffolds**





# **Supported Scaffolds**

When, where and why are they required?

What must be submitted to obtain a permit?

Critical Building Code requirements

Critical construction and maintenance requirements

Relevant local laws



# When, where and why are they required?

#### **BC 3314.1**

Scaffolds are utilized in conjunction with the construction or demolition of a building or structure so that the safety of public and property will not be endangered by falling material or equipment, or by collapse of the scaffold.

The supported scaffolds are classified based on the intended load capacity:

<u>Light-duty</u>: 25 PSF applied uniformly over the entire span area

Medium-duty: 50 PSF applied uniformly over the entire span area.

Heavy-duty: 75 PSF applied uniformly over the entire span area.

Extra-heavy duty: Used for loads exceeding 75 PSF.







# When, where and why are they required?

**BC 3314.2** Prior to the installation and use of a scaffold the contractor or licensee who is to install the scaffold, or a designated representative of the installer, shall obtain a permit for such scaffold.

**Exceptions:** A permit is not required for supported scaffolds, provided:

The scaffold is not an outrigger scaffold (thrust out);

No hoisting equipment with a manufacturer's rated capacity greater than 2,000 pounds will be located on the scaffold;

The scaffold will not be loaded, or designed to be loaded, in excess of 75 PSF, <u>and</u>

The scaffold is less than 40 feet in height.



#### What must be submitted to obtain a permit?

#### Submitted drawings for approval must include the following:

Design loads including maximum live load capacity including the design wind load for vertical and horizontal netting

Intended use of scaffold

Drawings must include the following:

**Plans** 

**Elevations and Details** 

Number of planked levels

Number of levels to be utilized simultaneously

Details for tie-back to the building or structure

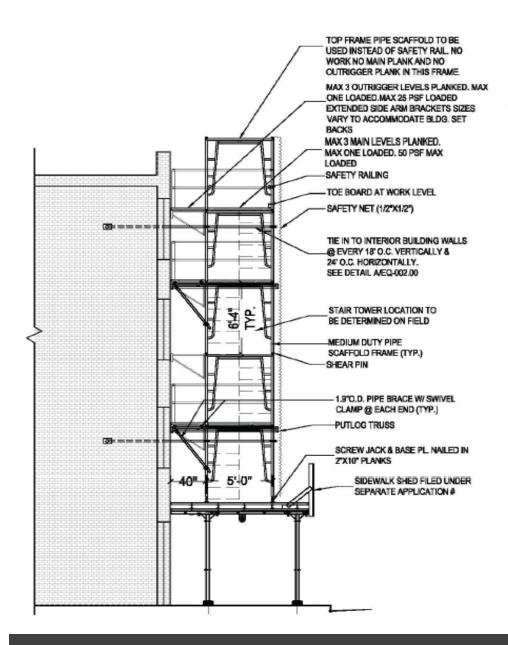
Maximum spacing of ties both vertically and horizontally

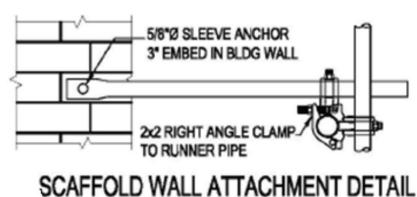
Specifications for equipment to be used

Make and model of scaffold frames

Type and minimum strengths of timber planking





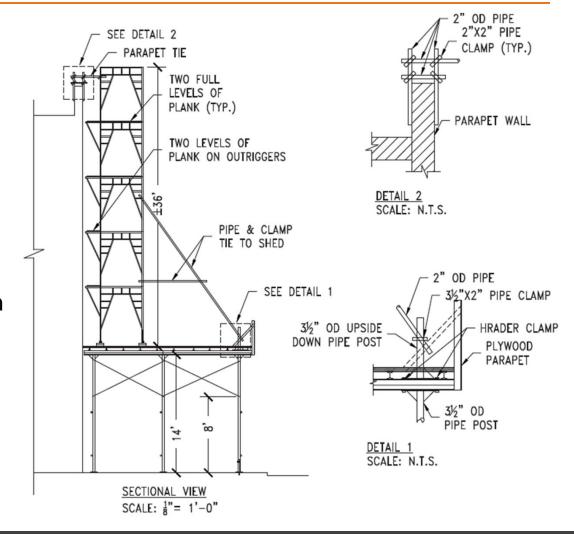




# **How Height Is Measured**

#### BC 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.





# **Expanded List Of Drawings Required**

# BC 3314.3.3 Where design is required, the drawings shall include at a Minimum a plan view and an elevation view with full dimensions, detailing items such as:

The location of the scaffold;

Connections and attachments to the base structure, including but not limited to anchorages, fastenings, tie-ins, tie-backs, and lifelines;

Any structural modifications required to the base structure;

Netting with specific type and manufacturer indicated, overhead protection, or any other equipment attached to the scaffold;

Any hoisting equipment located on the scaffold;

For a supported scaffold, structural members, as well as the foundation for the scaffold, including but not limited to sidewalk sheds, floors, roofs, or ground.



# **Loads Imposed Letter**

#### BC 3314.3.4

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.

**BC 3314.4.4.6** Where sustained winds or wind gusts at the site exceed 30 miles per hour, the use and operation of scaffolds located on the roof of a building, exterior to a building or structure, on a working deck, or in an area with an unenclosed perimeter shall cease.



#### **Design Requirements**

#### BC 3314.3.1 Supported scaffolds.

Supported scaffolds shall be designed by a registered design professional. Where the scaffold is to be located upon a sidewalk shed, the requirements of Section 3307.6.4.2.2 shall also apply.

**Exception:** Design is not required for a supported scaffold, provided:

The scaffold is not an outrigger scaffold (thrust out);

No hoisting equipment with a manufacturer's rated capacity greater than 2,000 pounds will be located on the scaffold;

The scaffold will not be loaded or designed to be loaded in excess of 75 PSF;

The scaffold is less than 40 feet in height;

Side-arm or end-arm scaffold brackets are used exclusively for support of workers; and

The scaffold is a light-duty, medium-duty or heavy-duty scaffold.



# **Critical Building Code Requirements**





# **Inspection Requirements**

**BC 3314.4.1.2** The installation and removal of a supported scaffold shall be supervised by a competent person designated by the contractor installing or removing the scaffold.

**BC 3314.4.1.3** The licensee or competent person supervising the installation or removal of a scaffold shall be present at the site during all installation and removal work and shall have the ability to communicate with all individuals involved in the installation or removal work.

**BC 3314.4.2.2** The use of a supported scaffold shall be supervised by a competent person, who shall be present at the site during all times the scaffold is in use.

**BC 3314.4.3.3** Upon completion of the installation of a supported scaffold, the scaffold, all components of and attachments to the scaffold, and all supports and anchorages of the scaffold shall be inspected prior to use to verify that they are in a safe condition.



# **Critical Inspection Requirements**

#### BC 3314.4

A structural stability inspection is required when a scaffold is restrained either vertically or horizontally.

The installation of post-installed anchors in masonry and/or concrete shall be subject to special inspection requirements, identified as "Alternative Materials" in section 3.0 of the TR1 form.

The contractor shall maintain an evaluation report in the field which shall confirm the applicable acceptance criteria. Field test shall be performed where required by the anchor manufacturer or where the structural properties of the masonry and/or concrete are in doubt as determined by the designer of record. Field test reports shall be forwarded to the designer of record within 3 days of the test.



# **Worker Training Requirements**

#### BC 3314.4.5

Only workers with experience in erecting, repairing, maintaining, modifying, or removing supported scaffolds shall be employed to perform this work. They shall be supervised by a designated superintendent or foreman who shall enforce such measures as necessary for the protection of the public and property.

Any person erecting, maintaining or modifying or dismantling a supported scaffold shall have a Certificate of Completion from an approved training course. 32 hours of training is required for erecting scaffolds over 40 feet in height.

Any person using a support scaffold shall have a User's Certificate from an approved training course. 4 hours of training is required for working on a scaffold.







# Using Hub Self-Service

The applicant of record must be enrolled with DOB

All documents and payments must be processed and the job must be submitted for DOB acceptance within sixty (60) days of entering Hub Self Service

Permits must be processed online through Hub Self-Service

Payment must be made online by credit card or eCheck only

Application must be a Professionally Certified Alteration 2 or 3



#### **Excluded from Hub Self-Service**

Enlargements

Curb cuts

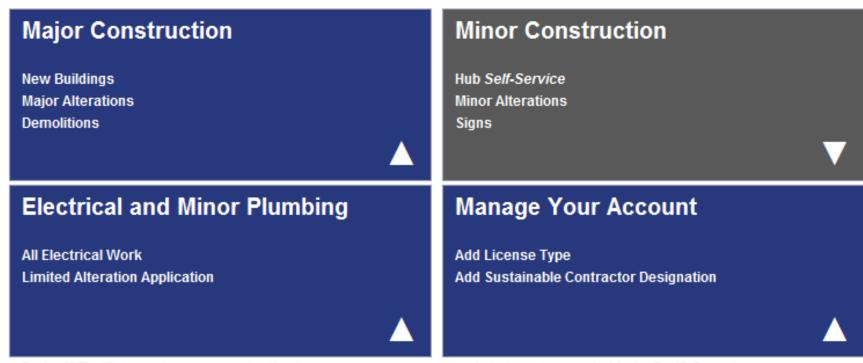
Legalizations

Fire alarms

**Builders Pavement Plan** 

Jobs filed on Landmarks Preservation Commission calendared properties





Only PEs/RAs who upgrade their account can submit jobs through Hub Self-Service.

Hub Self-Service

Other Job Applications

Renew Permits

show

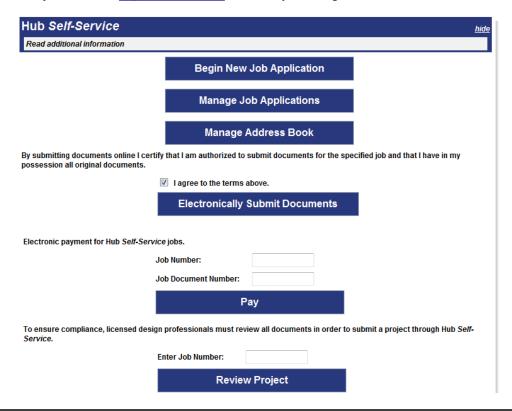
Renew After-Hours Variance Permit

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Only PEs/RAs who upgrade their account can submit jobs through Hub Self-Service.





#### **Questions?**

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

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