

Antenna, Cellular + Telecom

Permanent Attachment to Building



Photo: Dante Ramirez

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Alteration Type 2 or 3 (OT-ANT)

Cell towers for cellular and wireless internet networks are essential to modern communications, and are typically installed at high locations to maximize signals for users. Often cell towers are installed on building parapets and rooftops in dense urban environments. Some installations include related equipment, which may be in metal cabinets, or supported by raised rooftop platforms.

New York City Building Code

The 2014 Building Code (BC) prescribes standards for location, access, construction, loads and electrical grounding.

New York City Zoning Resolution

The Zoning Resolution is not applicable to cellular antenna towers; they are considered to be a utility accessory to a building. [TPPN 5/98](#) regulates the size, height and area of cellular antenna and related equipment.

New York City Fire Code

Fire Department access clearances on the roof and restrictions on rooftop obstructions are outlined in the Fire Code (FC).

Monopoles

Monopole installations must comply with use, height and setback regulations and be approved by the Board of Standards and Appeals (BSA). (The Department of Buildings' website includes information regarding [monopole inspections](#).)

This publication is a general overview of the requirements for this type of work. There may be additional, applicable Zoning Resolution, Construction Code, Multiple Dwelling Law or Energy Code requirements.

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FIRST STEPS

- PW1 job description, reason for antenna
- Zoning district, site designations (*special purpose districts, waterfront area or block, flood hazard area or block, fire district, landmark district, little 'e' DEP designated block, wetlands, 200' within MTA infrastructure*)
- Lot diagram, scope and area of work indicated
- Existing legal use of building, independent of antenna support
- Borough commissioner determinations, if applicable (sky exposure planes are not applicable for possible variations from TPPN 5/98, but determinations on a case-by-case basis might consider increased setback from the street.)

ADMINISTRATIVE

DOB Forms

- PW1
- TR1
- PW3

Technical Documents

- [ACP5](#) Asbestos Report (for pipe penetrations)

Related Applications

- MH (Mechanical) work type for related mechanical equipment

BIS Required Items

- Height and floor area exemption per [TPPN 5/98](#) in all zoning districts

ZONING

Communication equipment structures (applicable if the equipment does not meet the criteria of TPPN 5/98) – ZR 22-21

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NYS MULTIPLE DWELLING LAW

- No radio, antennae or other wires shall be attached to fire escapes, or soil or vent lines extending above the roof - Section 62, item 2.

NYC FIRE CODE

Rooftop Access, Rooftop Obstructions, Telecommunications Installations

- Note provided certifying compliance to required rooftop access, rooftop obstructions and telecommunications installations (FC 504.4) and related FAQ with FC 504.4, which represent interim updates to the FC (10, 11, 17, 18, 19, 20, 23, 31, 33)
- If not in full compliance, a variance from FDNY must be obtained per FC 104.8

NYC BUILDING CODE

Radio, Television and Telecommunications Towers and Antennas – [BC 3108](#)

Location and Access – [BC 3108.2](#)

- Access for inspection purposes shall be provided by step bolts and ladders
- Guy wires or other accessories shall not cross or encroach upon any street, public space, over above-ground electric utility lines or upon privately owned property without written consent of the owner of the encroached-upon property

Construction – [BC 3108.3](#)

- Constructed of corrosion-resistant noncombustible material.
- Minimum Type IIB construction for isolated radio towers up to 100' in height

Loads – [BC 3108.4](#)

- Designed for dead load plus ice load – BC 3108.4.1
- Designed for two times the calculated wind load – BC 3108.4.2

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- Further requirements, including those of other departments, agencies, and authorities may be triggered based on the energy source to be used (e.g. oil storage tank, fuel cell, gas supply pipe).

NYC ELECTRICAL CODE

Communication equipment – Article 810

- Installation work must be performed by a New York City licensed Electrician.
- Applicants must file an [ED16A Electrical Permit Application](#) for the installation of power sources for antenna and related equipment. Note, this work is subject to Department inspection.

Grounding

- Permanently and effectively grounded per the [NYC Electrical Code](#), Article 810 ([BC 3108.5](#))

NYC ENERGY CONSERVATION CODE

- N/A (Unconditioned space – ECC 101.5.2)

APPLICABLE BULLETINS, DIRECTIVES, PPNS, MEMOS

- [TPPN 5/98 Cellular Antenna and Related Interpretations](#)

Zoning Exemption

Attached to a building or other structure that has a use independent of supporting the antennas

- Antennas are permitted obstructions with a maximum height not extending more than 6' above the height of the roof or parapet on the roof, or 6' above any penthouse or bulkhead (if mounted on such)
- Antennas shall each have an area no more than 8.45 sf or 1 meter in diameter
- Related cellular equipment shall not occupy more than 5% of the floor area on a zoning lot or 400 sf, whichever is less for the aggregate of all installations
- Avoid exceeding combined coverage issues by checking in the Buildings

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Information System (BIS) to determine if there are other antenna applications

- Any canopies or protective enclosed structures over outdoor telecom cabinets must comply with the TPPN 5/98 requirements for height and area

Public Utilities and Related Equipment

- Cellular and telecom antennas and related equipment (including, but not limited to optional standby power generators) are given the same deference afforded to other public utilities.
- Optional standby power generation systems related solely to cellular and telecom equipment are ***not*** required to support additional building loads.

Plan Requirements

- Location, size and height of all proposed cellular equipment and antennas
- Structural support and mounting details of all proposed cellular equipment and antennas
- A calculation of the cumulative floor area and the dimensions of the room occupied by existing and proposed cellular equipment in the building.
- [Buildings Bulletin 2011-14](#) – Requirements for installation/modification of cell phone equipment using industrial rope access (also known as controlled descent) methods.

OTHER AGENCY APPROVALS

- NYC Art Commission: Approval required for City-owned property
- Board of Standards and Appeals: Approval required for monopoles
- Landmarks Preservation Commission: Approval if in Landmark District