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## BUILDINGS BULLETIN 2019-010

### Technical

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**Supersedes:** None

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**Purpose:** This bulletin clarifies the green roof and solar requirements for new and existing buildings under Local Laws 92 and 94 of 2019 (LL 92/2019, LL 94/2019).

<b>Related Code/Zoning Section(s):</b>	AC 28-101.4.3	BC 1504.9
	BC 1511	FC 504.4
	BC 1502.1	FC 512 FC 318

**Subject(s):** Green roof systems, vegetative roofs, solar photovoltaic systems, sustainable roofing zones.

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### I. APPLICABILITY

Local Laws 92 and 94 of 2019 (LL 92/2019, LL 94/2019), effective November 15, 2019, amend the 2014 Administrative Code and Chapter 15 of the New York City Building Code to require, subject to certain exceptions, new buildings, new roofs resulting from enlargement of existing buildings, and existing buildings replacing an entire existing roof deck or roof assembly to be provided with a “sustainable roofing zone,” 100 percent of which must be a solar photovoltaic electricity generating system, a green roof system, or a combination thereof.

Projects with construction documents approved on or after November 15, 2019 are subject to the requirements of LL 92 and 94 of 2019, unless the construction documents have attained BIS job status K (plan exam partial approval) prior to such date.

### II. REQUIREMENTS

#### A. Definitions

“SUSTAINABLE ROOFING ZONE” is defined as areas of a roof assembly where a solar photovoltaic electricity generating system, a green roof system, or a combination thereof, is installed.

“ROOF ASSEMBLY”<sup>1</sup> is a system designed to provide weather protection and resistance to design loads. The system consists of a roof covering and roof deck or a single component serving as both the roof covering and the roof deck. A roof assembly includes the roof deck, substrate or thermal barrier, insulation, vapor retarder and roof covering.

“ROOF DECK”<sup>2</sup> is the structural surface to which the roofing and waterproofing system (including insulation) is applied.

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<sup>1</sup> As defined in Section 1502.1 of the 2014 New York City Building Code. The definition is limited in applications to the provisions of Chapter 15.

<sup>2</sup> Refer to the NYC Building Code Chapter 15 for the definition for “roof deck”.

## B. Areas to be included in sustainable roofing zone

Roofs at every level shall be provided with a sustainable roofing zone pursuant to LL 92 and 94. Each contiguous roof area shall be evaluated individually and be provided with either a green roof system or a solar photovoltaic electricity generating system, or combination thereof. No roof area, unless specifically excluded per subsection C of section II of the bulletin, is exempt from these requirements.

## C. Areas exempted from sustainable roofing zone

The following areas are excluded from the sustainable roofing zone:

1. Areas required to be set aside for setbacks or access pursuant to the New York City Fire Code, New York City Construction Codes or the Zoning Resolution of the City of New York. For example, rooftop access areas required by Fire Code section 504.4 and 512.3.1 that must be kept clear are excluded from the sustainable roofing zone.
2. Areas occupied by rooftop structures, water towers, greenhouses, mechanical equipment, towers, antennas, parapets, guardrails, solar thermal systems, equipment access pathways and appurtenances.
3. Areas occupied by obstructions related to stormwater management practices including, but not limited to, cisterns, or reuse systems that are installed to comply with site connection or stormwater construction permits issued by the Department of Environmental Protection.
4. Building setbacks including terraces that are existing non-complying pursuant to the New York City Zoning Resolution, or that are voluntarily provided. However, each setback must comprise less than 25 percent of the area of the largest floor plate in the building.
5. Recreational spaces that are integral to the principal use of the building on which the rooftop is located, including but not limited to playgrounds and participant sport areas for sports facilities and schools, Quality Housing recreation spaces, roof terraces and passive recreation areas that are documented on the certificate of occupancy or Department of Buildings approved filing as outlined in Building Bulletin 2018-002.
6. Pitched roofs (roof slopes greater than 17 percent) that would accommodate less than 4kW of solar photovoltaic electricity generating capacity. Supporting documents, including calculations and shading report by a qualified contractor or NYS registered design professional, shall be submitted. See Part D2 below.
7. Areas where site conditions are determined by the Department to be unfavorable to either a solar photovoltaic electricity generating system or a green roof system. For example, in cases where the entire roof assembly including roof deck is replaced, but the building structure cannot support the added weight of a sustainable roofing zone, a statement by a NYS registered design professional shall be submitted to the Department to substantiate the practical difficulty due to structural limitation.

## D. Sustainable Roofing Zone

Once the contiguous areas required to be sustainable roofing zone are determined, compliance with LL 92 and 94 of 2019 shall be as follows:

1. *Low-slope roofs (roof slope <2:12)*
  - a. Contiguous sustainable roofing zone equal or over 200 square feet (100 square feet for Group R buildings five stories or less)

Where a contiguous sustainable roofing zone on a roof is greater or equal to 200 square feet (or is greater or equal to 100 square feet for Group R buildings five stories or less), either a solar photovoltaic system or a green roof system, or a combination thereof, must be installed. If a solar photovoltaic system cannot meet or exceed a capacity of 4kW due to site conditions such as shading, a green roof system shall be provided.
  - b. Contiguous sustainable roofing zone less than 200 square feet (100 square feet for Group R buildings five stories or less)

Where a contiguous sustainable roofing zone on a roof is less than 200 square feet (or less than 100 square feet for Group R buildings five stories or less), a solar photovoltaic system that can

meet or exceed a capacity of 4kW must be installed. If the requirement of 4kW cannot be met, a green roof system shall be provided.

2. *High-slope roofs (roof slope >2:12)*

On a high-slope roof (roof slope > 2:12), a solar photovoltaic system shall be provided. Where the solar photovoltaic system cannot meet or exceed a capacity of 4kW, the roof is exempt.

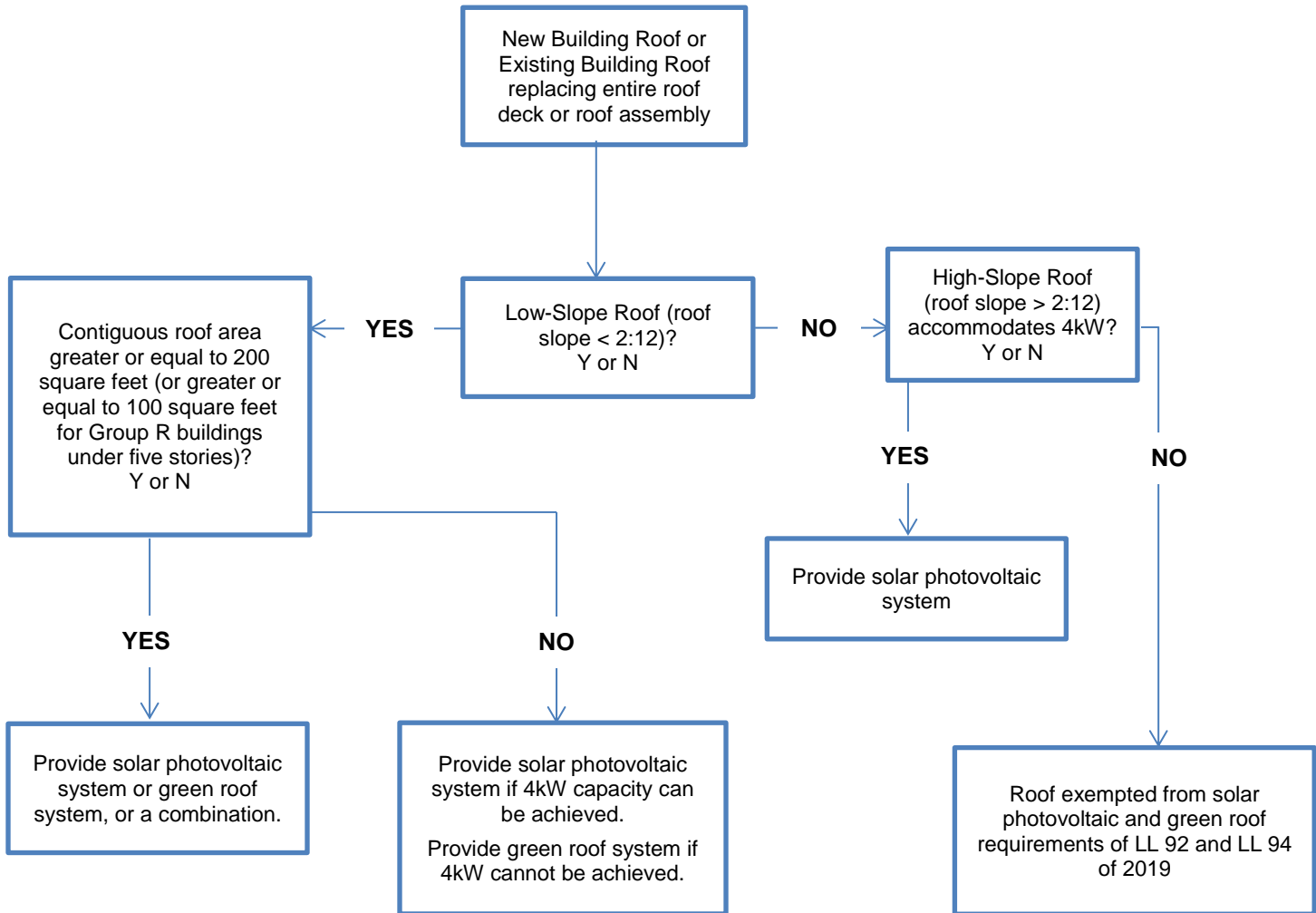
3. *Requirements for supporting documents*

Supporting documents including calculations and a shading report prepared by a qualified contractor or NYS registered design professional shall be submitted as substantiation when the solar photovoltaic system cannot accommodate 4kW in the sustainable roofing zone. The panel efficiency used to determine the potential capacity of a solar photovoltaic system shall not be less than 15 %.

A contractor that has obtained any of the following credentials shall be deemed qualified:

1. NABCEP Certification (North American Board of Certified Energy Practitioners), or
2. IBEW-NECA Electrical Journeyman & Apprentice Training (International Brotherhood of Electrical Workers and National Electrical Contractors Association), or
3. UL (Underwriters Labs) Credential

**See Figure 1 for the compliance path to provide a sustainable roofing zone under LL 92 and 94 of 2019.**



**Figure 1.** Compliance path for sustainable roofing zone pursuant to LL 92 and LL 94 of 2019.

## E. Installation

The installation of solar photovoltaic systems shall be in accordance with the 2014 NYC Building Code Section 1511, the NYC Electrical Code, and the NYC Fire Code Section 512 and 504, the New York City Zoning Resolution and other applicable laws and rules.

Installation of green roof systems shall be in accordance with 2014 NYC Building Code Section 1507.16, the NYC Electrical Code, and the NYC Fire Code Sections 318 and 504, the New York City Zoning Resolution and other applicable laws and rules.

## F. Zoning

Solar energy systems and vegetated roofs (with certain limitations) are permitted obstructions within required open space, yards, courts, and height and setbacks subject to regulations of the Zoning Resolution. Refer to the Zoning Resolution for specific limitations.

## G. Fire Code

Rooftop photovoltaic systems and green roof installations shall comply with the rooftop access and obstruction requirements of the NYC Fire Code Section 504.4. Green roof maintenance requirements shall be in accordance with FC 318 and 504. Photovoltaic system installation and maintenance shall be in accordance with FC 512 and 504.

## H. Historic Structures

For historic buildings subject to the jurisdiction of the Landmarks Preservation Commission (LPC), replacement of an entire existing roof deck or roof assembly would trigger the requirements of LL 92 and 94, and a sustainable roofing zone shall be provided. The proposed work must be approved by the LPC, prior to DOB permit approval.

## III. DOB APPLICATION SUBMISSION

### A. Construction Documents

Applicants shall provide roof plans with a code compliant sustainable roofing zone. Roof plan(s), elevations(s), and drawings of the solar or green roof installation shall be submitted. Roof plan(s) shall show the included and excluded areas of the sustainable roofing zone. Fire Department access areas shall be clearly indicated. Additional information such as drawings showing anchorage, details, diagrams, and tabulation of areas included and excluded (see Part IIC) from such zone shall also be submitted.

A statement by a qualified contractor or NYS registered design professional shall be included on the plan to indicate the anticipated solar generation capacity of the sustainable roofing zone. Where the 4kW capacity cannot be met, evidence such as calculations or shading report prepared by the qualified contractor or NYS registered design professional shall be included on the roof plans.

### B. Filing

Rooftop photovoltaic and green roof projects may be filed as part of another New Building or Alteration permit application. They may also be filed separately through the borough offices or through The HUB Full Service as an Alteration Type-2. All solar electric (photovoltaic or PV) projects must file an ED16A form (Electrical permit application). The following options are available for submitting building permit applications:

- **Full Plan Review** – File a Plan/Work Approval Application (PW1) application in person at a Borough Office (recommended for complex installations) or online through the HUB.
- **Self-Certification of Objections** – File an application in person at a Borough Office.
- **Professional Certification** – File an application in person at a Borough Office.
- **Same Day Review (Directive 14)** – Consult with your borough office for their Same Day Review requirements.

#### **IV. NEW YORK STATE PROPERTY TAX ABATEMENT (PTA)**

Projects with a sustainable roofing zone that choose to pursue the New York State Property Tax Abatement(PTA) for solar and green roof installations, shall also comply with the qualifying requirements as defined by the respective PTA programs.

Solar and green roof projects pursuing a solar or green roof PTA must be filed online through the HUB Full Service using Professional Certification of Objections, as a separate Alteration Type-2 application using the PTA4 form for solar installations, and PTA3 form for green roof installations.

#### **V. ALTERNATE COMPLIANCE TIMELINE FOR AFFORDABLE HOUSING**

Until November 15, 2024, (i) buildings with one or more dwelling units for which occupancy or initial occupancy is restricted based upon the income of the occupant or prospective occupant as a condition of (A) a loan, grant, tax exemption or conveyance of property from any state or local governmental entity pursuant to the private housing finance law or the general municipal law, or (B) a tax exemption pursuant to section 420-c of the real property tax law, (ii) buildings subject to the alternative enforcement program pursuant to section 27-2153 of the administrative code of the city of New York, and (iii) buildings owned by the Department of Housing Preservation and Development (HPD), need only comply with the requirements of LL 92 and 94 of 2019 to the extent determined by HPD.