



BUILDINGS 2021-013 BULLETIN O T C R

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PURPOSE: This document recognizes the use of imaging robots to aid in the critical examination requirements for compliance filings for the Façade Inspection Safety Program.

SUBJECT(S): Innovation Challenge, Façade, Exterior Wall Inspection, FISP, Hoisting Equipment, Rigging, Imaging Robots

RELATED CODE SECTIONS: AC 28-302, 1 RCNY 103-04, BC 3302, BC 3316

I. INNOVATION CHALLENGE

In 2020 the Department of Buildings launched the **Hack the Building Code Innovation Challenge** competition. The competition sought ideas for modernizing the construction process by improving buildings and keeping construction workers and the public safe. The Department's website provides a [list of the winning technologies](#).

One of the competition's winning technologies uses imaging robots to aid in the critical examination requirements for compliance filings for the Façade Inspection Safety Program (FISP). This Bulletin recognizes the use of imaging robots to aid in the critical examination requirements for facades.

II. BACKGROUND

Administrative Code Article 302 requires owners of buildings greater than six stories to submit a written report of a FISP investigation to the Commissioner of the Department of Buildings, which includes the critical examination and inspection of the building's exterior walls as set forth by 1 RCNY 103-04. Qualified Exterior Wall Inspectors (QEWI) must comply with two components of the inspection requirements: a critical examination of the entire building from the ground (often with the aid of binoculars) and a physical (*close-up*) examination conducted from a scaffold or other observation platform. Additionally, as part of the physical examination, a probe is required at all buildings constructed with cavity walls, though there are certain conditions under which a waiver of this requirement can be granted. Imaging robots may be used to aid a QEWI in the critical examination of the building facade for the filing of a FISP report. Use of this equipment does not eliminate the requirements for physical examinations or qualify for a waiver of the probe requirements.

Additionally, Section BC 3302 defines hoisting equipment as *equipment used to raise and lower personnel and/or material with intermittent motion*. Section BC 3316 requires hoisting equipment to be installed under a permit and be operated by (or under the direction of) a licensed rigger. Imaging robots are considered hoisting equipment since they include the use of materials such as cameras.

III. DESCRIPTION

An imaging robot is a machine made up of a frame with multiple cameras that can offer high resolution and zoom photographic and video capabilities, as well as infrared and/or ultraviolet imaging. Imaging

robots are secured to hoisting cables or rails, often with a mechanism for adjustable displacement from the building façade in order to execute vertical drops.

IV. USES

Imaging robots may be used by QEWS to aid in the critical examination that is required for a FISP compliance report. The critical examination requires QEWS to include color photographs of typical conditions on buildings classified as *safe* and photographs of all conditions that are classified otherwise. These conditions must also be mapped. Images collected by an imaging robot may be used to satisfy this requirement and any location data collected may be used to produce the mapping. Images collected by an imaging robot must still comply with the photo requirements of 1 RCNY 103-04 and must be submitted through the DOB NOW: *Safety* portal.

The high-resolution images may be recorded and viewed from a remote location and provide multiple fields of view. Digital and/or mechanical stabilizers allow for usable photos and videos in adverse conditions, such as high winds or irregularly shaped facades. A live camera feed permits the operator on the ground to execute runs.

Imaging robots will be able to assist a QEWS in their critical facade examinations by providing high resolution images of areas that before had only been able to be viewed with binoculars. This will allow them to see conditions from above, such as the top of a cracked windowsill, and help them to better plan for areas in need of required physical examination.

Restrictions:

Information collected from the imaging robot does not replace the requirement for a physical (*close-up*) examination or qualify for a waiver of the probe requirements at cavity walls.

This Bulletin specifically addresses the use of imaging robots as they may relate to FISP inspections, however, imaging robots may be used, in accordance with these guidelines, for other types of building investigations.

V. APPLICABLE CODE PROVISIONS

Permitting and rigging of imaging robots shall comply with the NYC Construction Codes and the following applicable requirements:

A. Permitting

1. Imaging robots shall comply with hoisting equipment permitting requirements in accordance with BC 3316.4.

3316.4 Permit. Permits for hoisting equipment shall comply with the requirements of Sections 3316.4.1 through 3316.4.5.

3316.4.1 Acceptance of equipment. Hoists and all premanufactured runback structures shall be approved for use by the commissioner or other agency acceptable to the commissioner

3316.4.2 Posting of permits. Permits, or duplicates of the permits, shall be posted in a conspicuous location in the car or on the equipment.

3316.4.3 Construction documents. Copies of the written permit application and approved construction documents shall be kept at the site and made available to the commissioner upon request.

3316.4.4 Permit signage. Following the receipt of a permit to install a hoist, the permit holder shall post a sign that meets the requirements of Section 3301.9.6. Such sign shall be clearly visible from the street.

3316.4.5 Other temporary signage. Other than as specified in Section 3301.10, there shall be no information, pictorial representation, or any business or advertising messages posted on the hoisting equipment or runback structure.

2. Where the use of an imaging robot requires the temporary closing of a sidewalk, all required Department of Transportation (DOT) permits shall be obtained.

B. Rigging

1. Rigging of imaging robots shall comply with Section BC 3316.9.

3316.9 Rigging. The attachment and detachment of articles from hoisting equipment used to hoist or lower articles on the outside of a building shall be in accordance with the requirements of Sections 3316.9.1 through 3316.9.3.

3316.9.1 Supervision. The hoisting or lowering of any article on the outside of any building in the city shall be performed by or under the direct and continuing supervision of a licensed rigger.