

DEALING WITH HIGH SNOW LOADS ON STRUCTURES

During the weekend of January 22-24, 2016, the Northeastern and Mid-Atlantic States experienced Winter Storm Jonas. Winter Storm Jonas dropped over 3 feet of snow in some areas. The winter storm is reportedly among the heaviest snow storms in recent history for the Washington-Baltimore Metro area.

SNOW LOADING AND RISK CONTROL

Structures may experience unusually high loading due to large snow accumulation or stockpiles of snow on exposed areas of the structure. TCE recommends that building owners be cognizant of the risks associated with high snow loading on their structures, as well as proper snow removal methods and procedures to prevent unnecessary water and ice buildup from clogged roof drains and scuppers.

UNDERSTANDING THE RISK

Excessive loading is a concern with large snow accumulations and can cause damage to a structure. When snow is plowed or shoveled into large stock-piles on the structure, or if ice accumulates due to clogged drains, the design live load of the structure can be exceeded. Snow piles can become far heavier if rain occurs after the pile is in place. Snow that is compacted by snow removal can easily exceed the design load. Blocked drains at the exposed level of the structure can cause loads to increase as snow melts during warm periods and then re-freezes. Excessive loading can cause permanent damage to the structural elements, and in extreme cases, partial or full structural collapse.

APPROPRIATE RISK CONTROL PROCEDURES

- Determine maximum “safe” snow depth for the structure. Verify structure’s live load capacity (often noted in structural plans and specifications). If live load of the structure is not known, consult a licensed structural engineer to determine the live load capacity.
- Inspect structure for damage or deterioration, and repair or reinforce it as necessary.
- Inspect all drains, overflow drainage, and clean any accumulated debris from the exposed areas to prevent clogging of the drainage system.
- Remove snow from the structure with appropriately sized equipment rather than piling it onto the structure. Heavy snow removal vehicles may not be appropriate for the

structure. If there are questions as to appropriate snow removal method for a particular structure, please consult with a design professional.

DAMAGES RELATED TO SNOW REMOVAL

Snow removal poses several threats to a structure, including structural damage and maintenance issues. Concrete curbs, decks, and columns can be damaged by impact from a snow plow or other snow removal equipment. Snow removal can also damage exposed waterproofing membranes at these areas. These factors can lower the capacity of the building structure and may cause water leakage into occupied areas. TCE is skilled at identifying snow removal related damages and determining the optimal repair solution.

For more information please Contact:

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