

## Media Relations

### Expert: Roof Collapses Predictable In Record Snowy Winter

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DURHAM, N.H. – A structural engineering professor at the University of New Hampshire is available to discuss two hazards of this season’s record snowfalls: roof collapses and ice dams. Ray Cook, associate professor of civil engineering at UNH, can discuss the science behind this winter’s many roof collapses and give advice for preventing them.

Ray Cook is available at (603) 862-1411 or [ray.cook@unh.edu](mailto:ray.cook@unh.edu).

As near-record snowfalls blanket the northeast, snow and ice loads are threatening the structural integrity of residential and industrial roofs. The Massachusetts Emergency Management Agency has received reports of more than 80 roof collapses or potential structural damage to buildings within the past week; in New Hampshire Sunday, a barn roof collapse killed two cows and trapped a dozen others.

“We have had higher-than-normal snowfall this year, without the melting periods between storms we usually have,” says Cook, who notes that this winter is among the snowiest on record. Further, the high moisture content of the snow, compounded by rain over this past weekend, has made for much denser and heavier snow loads.

When buildings are designed, Cook explains, engineers use a calculated weight of snow on the ground in the particular area and then design the roof so the chance of snow exceeding that limit is one in 50 years. Roof pitch and surface – whether snow is likely to slip off or not – are also taken into account. Most residential structures, however, are not subject to this level of engineering, and industrial structures are usually built exactly to, and not beyond, these specifications.

Cook, whose engineering expertise lets him estimate that he has hand-shoveled 50 tons of snow from his own home on the Massachusetts-New Hampshire border, recommends that homeowners who can safely remove snow from the ground with a roof rake do so regularly, not letting the snow build up. Ice dams, which occur when melted snow runs down the roof to the eaves, where it freezes and causes water to back up under the shingles, can be temporarily addressed by melting the ice with road salt or hot water. When ice damming is a recurring problem, the roof should be inspected and modified to allow for better ventilation.

The University of New Hampshire, founded in 1866, is a world-class public research university with the feel of a New England liberal arts college. A land, sea, and space-grant university, UNH is the state’s flagship public institution, enrolling 12,200 undergraduate and 2,300 graduate students.

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T-hall

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