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March 10, 2015

Mr. Jim Rozycki
Director of Facilities
Oyster River Cooperative School District
36 Coe Drive
Durham, NH 03824

RE: Roof Snow Loads
Maintenance Facility Building
Oyster River Cooperative School District
Durham, NH

Dear Mr. Rozycki,

At your request Emanuel Engineering, Inc. visited the Oyster River School District Maintenance Facility located at 33 Coe Drive, Durham, NH on February 18, 2015, to investigate possible roof problems due to snow loads on the roof. Dave Emanuel and I met with you on site. This report summarizes our observations and recommendations.

Dave Emanuel, P.E. and I performed a visual site inspection of the wood framed office area and maintenance facility. The building was visually inspected from the interior office space and garage, and attic above garage bay 2nd floor storage area. There were no reported problems or noted cracking or obvious signs of deformation, displacement, distress, or failure at the time of the inspection. There were some minor signs of water damage in the office area. The attic area above the office area was not accessible due to the absence of a scuttle. Access is a code requirement.

There was no apparent over burdening snow load on the 1½ story building at the time of the inspection. Building plans of the building were not provided by the School District nor reviewed for design loads.

The current ground snow load for the Town of Durham, NH per the ASCE 7-05, "Minimum Design Loads for Buildings and Other Structures", is 55 PSF. It is our understanding that Durham currently prescribes a ground snow load of 55 PSF.

The ground snow load is converted to a flat or sloped roof design load using several adjustment factors. Using the present day 55 PSF ground snow load, translates to a 42 PSF for flat and includes roof slopes up to 30°. Depending on elevations between adjacent roofs, the flat roof snow load increases due to snow drifts and sliding snow onto low roofs. Unbalanced snow loads occur for gable roofs.

Based on engineering calculations for the unit weight of snow, it is estimated that approximately 24 inches of snow represents the roof design load of 42 PSF.

Recommendations

Without further additional review, calculations, or inspections, we recommend that snow depths on the maintenance building roof not exceed 24 inches. Based on the day of the visit, snow depths appear to be within allowable depths.

It is recommended that the attic space above the garage be checked for proper bracing of the wood trusses and potential damage. Also, the attic space / rafters over the office space should be made accessible and inspected to check for rafter / truss damage due to unbalanced snow load and sliding snow conditions. Add a scuttle for access to attic above the office area.

Please see attached photographs. Should you desire further evaluation of the roof or have further questions, we are available to assist you.

Very Truly Yours,

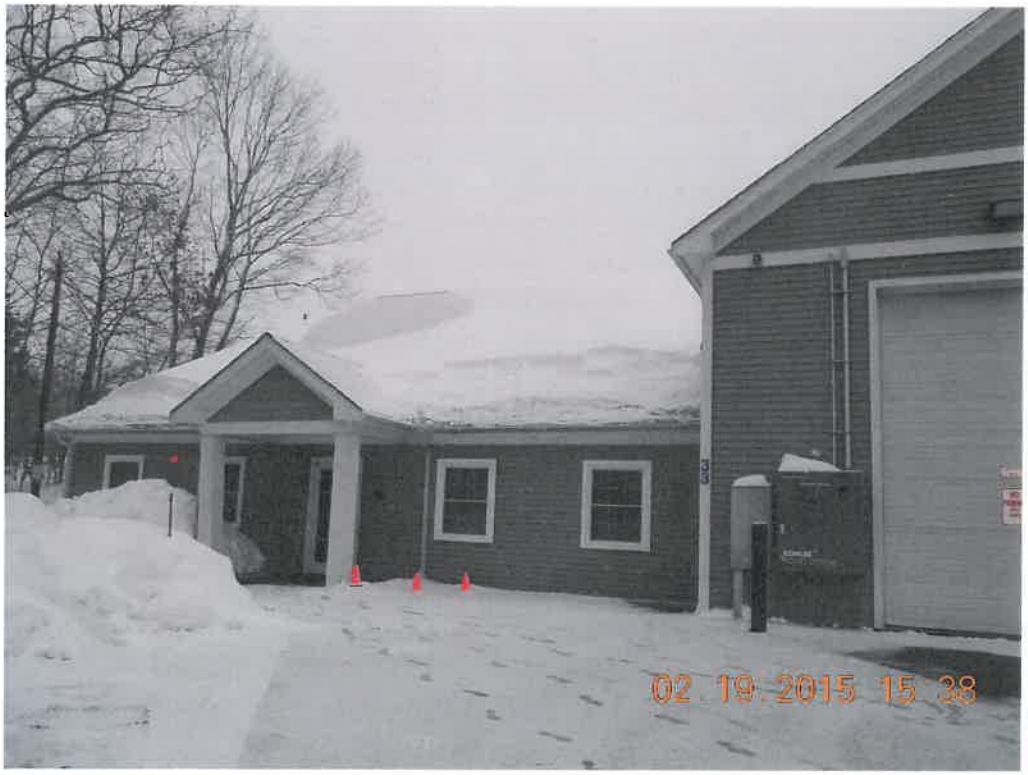
Fred Emanuel

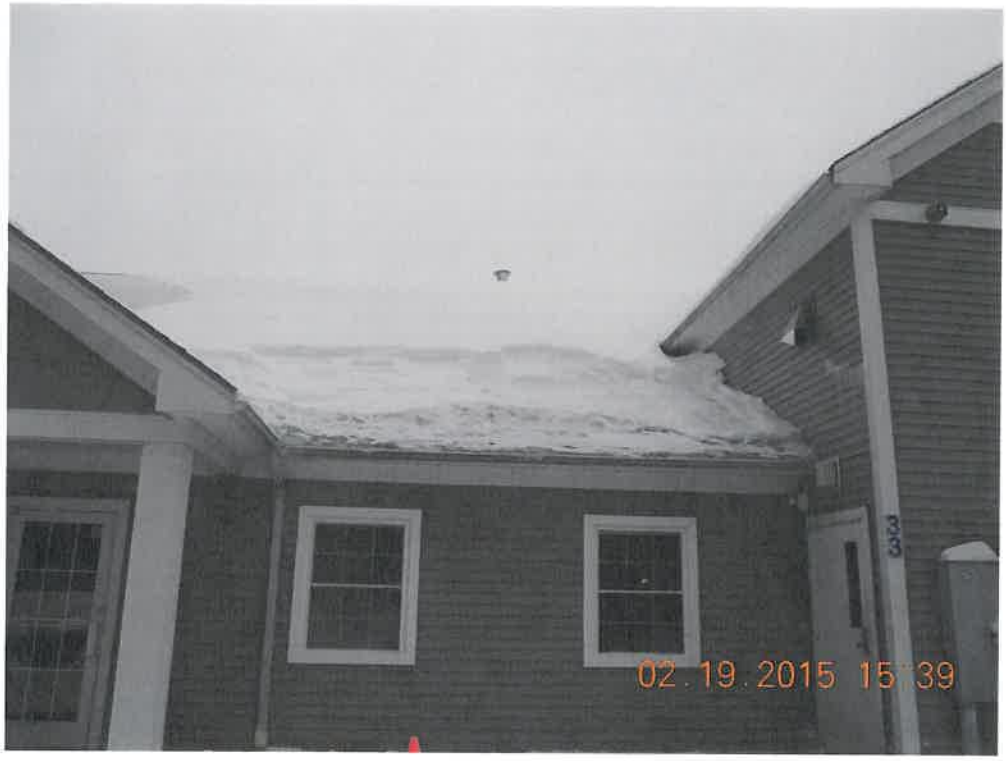
Fred Emanuel, P.E.

Attachments: Photographs (2 pages)

File: P:\2015 JOBS\15-015 Oyster River School District - Snow\ORSD Snow Report - SAU Maintenance Facility - dated 3-13-15.docx

Maintenance Facility Building

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