



December 7, 2020

Town Manager  
Town of Bowdoinham  
13 School Street,  
Bowdoinham, ME 04008

RE: Current State of Bowdoinham Recycling Building

To whom it may concern,

Calderwood Engineering met with a number of Town Selectmen and the Owner of the building this morning to review and discuss the required improvements to the existing recycling barn. During this meeting it was decided that Calderwood Engineering would provide the following information for the Town and the Building Owner to discuss:

1. The allowable snow loads of the roof, given for both the unreinforced half (North) and the improved half (South)
2. The maximum unbraced length of the existing South side exterior wall studs.
3. The current allowable load for the residential apartment located above areas of Town operation.

The original 5" of allowable snow depth reported in previous memos applies to the North half of the building where the existing roof has not been improved. After verifying field measurements it was determined that the South half of the roof is capable of carrying a roof snow load of 13.8psf (pounds per square foot) or approximately 8" of snow. This amends our previous recommendations to the following: the roof should be cleared if the snow depth on the building exceeds 5" on the North side and 8" on the South side.

It was noted during the site visit that the existing exterior wall studs are 2x6 on the first (2) floors; while the 3<sup>rd</sup> floor is framed with 2x4. Calderwood Engineering used the increased allowable snow load for the South half of the building and determined temporary banding should be provided where the unbraced length of the exterior stud exceeds 5'-6". Where existing sheathing or banding is provided, each stud should be connected.

It was also noted that at the rear end of the building, a number of 2x6 studs on the South wall were found to be improperly spliced or deteriorated. New 2x6 should be connected to the existing studs to allow proper transfer of load from the top of the wall to the ground. These requirements were discussed onsite; if further clarification is required please notify us.



During the onsite meeting, we discussed the apartment loading requirements, and the Owner stated that it may be possible to limit the apartment live load. After reviewing our calculations it was determined that the existing allowable live load of the apartment is 17psf. Per the Minimum Design Loads for Buildings and other Structures, (2) separate design loads could be considered for an apartment. Habitable attics and sleeping areas require 30psf, while Private rooms require 40psf. It is outside of our scope to make any recommendations to for how to resolve this discrepancy.

Should you have any further questions please feel free to contact us directly.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Greg MacAlister". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Greg MacAlister, P.E.