

Professional Services

- + Roof consulting
- + Construction documentation and administration
- + Condition assessment reports
- + Leak investigations
- + Cost estimating
- + Hands-on surveys and test probes
- + Historic building restoration and rehabilitation
- + Facilities maintenance plans
- + Materials analysis and selection
- + Preservation planning

Steep-Slope Roofing

- + Slate
- + Wood shingles
- + Clay tile
- + Standing seam and batten seam copper
- + Asphalt shingles
- + Flashings
- + Rainwater conduction systems

Low-Slope Roofing

- + Flat seam copper
- + Built-up roofing
- + Modified bitumen systems
- + EPDM
- + Fluid-applied systems
- + Flashings

Building Envelope

- + Exterior masonry
- + Windows and doors
- + Stained and leaded glass
- + Architectural woodwork
- + Ornamental ironwork
- + Steeples, parapets, and cornices

Competence

- + Expertise in roofing technology and building pathology
- + Holistic approach to identifying and treating deterioration
- + Hands-on, up-close surveys from ladders and high reach equipment
- + Principal involvement in all projects
- + Attention to detail
- + Close client collaboration
- + Frequent site visits during construction to monitor quality
- + Continuously refining our understanding of building technologies

SOLUTIONS FOR THE ENTIRE BUILDING ENVELOPE

Frost Patterns – Survey Aid

Nobody likes to get up early on a cold, frosty winter day to start a building survey. Nobody, except a roof consultant that is! Frost patterns on a low-slope roof can be a no-cost boon to our investigations and understanding of existing conditions.¹

Test openings the previous afternoon at a roof located in upstate New York had revealed warped insulation panels, condensation on the underside of the insulation panels, corroded insulation fasteners, and air movement at the concrete roof deck/insulated metal wall panel interface.



▲ Overall view of the roof on a typical afternoon.



▲ Corroded fastener plate

¹ Other good times to survey a roof are in the middle of a downpour and immediately after a rain event as roof surfaces begin to dry; but, we'll leave these for another edition of Ridgewalker News.



▲ Single layer of polyisocyanurate insulation. The insulation warped as a result of condensation on its underside and fastener corrosion. Source of the moisture – interior air.

As you might imagine, it is hard to photograph the movement of air. Frost brought these, and other, conditions to life in a dramatic way, and helped illustrate the magnitude of the problem.



▲ Frost patterns on the EPDM clad parapet walls formed a perfect sine wave. The distance between the peaks of the non-frosted areas matched the width of the insulated metal wall panels exactly, confirming our earlier observation of air movement from the interior into the roof system, but also vividly showing the degree of heat loss through the joints between panels.



◀ The dark round circles in this photo indicated the insulation’s fastener pattern. The fastener plates are frost-free due to thermal bridging. It is estimated that thermal bridging of fasteners reduces the R-value of insulation by 8 to 10 percent.

To help prevent these problems from recurring, Levine & Company specified several remedies in the bid documents for roof replacement, including drying out of the concrete roof decks, installation of a continuous air/vapor retarder membrane at roof/wall interfaces and parapet walls, and installation of two layers of polyiso insulation plus a cover board, with the first layer of insulation mechanically fastened and the second layer of insulation and cover board adhered using spray foam adhesive. In addition, joints between the layers of insulation and cover board were staggered to further mitigate air movement and heat loss.

PROJECT NEWS

Two of Levine & Company’s projects have been awarded 1st Place in RCI Inc.’s (The Institute of Roofing, Waterproofing, and Building Envelope Professional’s) Document Competition.



Our *Roofing Condition Assessment Report for the Bradford County Courthouse, Towanda, Pennsylvania* won First prize in the Report category. The report combined historical intrigue with detailed technical analyses and recommendations for roof replacement options and further investigations.

Our specifications and drawings for Roof Replacement, McGraw Hall, Cornell University won First prize in the Large Project category. Specified work included new, patterned slate roofing on the building’s Mansard roofs, new flat seam copper roofing at dormer roofs and gussets, and new fluid-applied membrane waterproofing built-in gutter liners (projecting dormers had inhibited thermal movement in the original copper gutter liners; see Ridgewalker News Fall 2012 issue).



Awards will be presented in mid-March at RCI’s 30th International Convention & Trade Show in San Antonio, Texas.

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