

High-Profile: FACILITIES DEVELOPMENT NEWS

Roof Tops

When it comes to a weathertight building envelope it's all about the flashing schedule

by Bryan Kelly

In keeping a building weathertight, roof-related flashing



Bryan Kelly

schedules can help ensure the long-term integrity of the properties you manage and maintain.

New England weather

is notoriously variable, with extremes of temperature and precipitation creating punishing conditions. Even extended periods of mild weather can create hazards: Consider an older, shingle-style roof when exposed to the high temperatures and degrading effects associated with direct sunlight.

Shingles can become brittle, splay, and crack while hip lines separate. Further, what goes unobserved in summer can become a

major problem as the ice and snow of winter penetrate roofing underlayment.

Some mistake obvious failures in roofing construction with siding issues, especially improperly installed vinyl or even fiber cement products. A failing roof can also be a function of improper installation or shabby design. But there are other factors, as well.

Some roofs begin life in New England suffering from built-in issues, including what I like to call "regional deficit disorder."

What's exactly does that mean? Consider this example:

Recently, a large condominium complex in eastern Massachusetts put out an RFP seeking remedial solutions for severe water penetration problems associated with virtually every one of its 54 residential units. A professional engineering firm from southern New Hampshire with long experience in multi-unit housing made a site visit followed by a careful review of property building plans.

Here's what was found:

Without benefit of an engineering analysis the property developer had chosen an architectural design used exclusively in southern states. On examination it was deemed entirely inappropriate for use in New England, where ice and snow build-up are major factors.

Commonly repeated design features, including multiple gable and valley configurations with abutting cheek walls led to excessive accumulation of precipitation; inadequate gutters and downspouts limited carry off. Compounding the error of choosing a design intended for southern climates, internal attic geometry limited proper interior ventilation.

Effectively, the developer had created a perfect storm of design blunders through an overall roofing configuration designed to limit the release of precipitation and promote ice dams.

The result was a group of frustrated and even outraged unit owner and a community association board brought to its wit's end. Significant penetrations of roofs and walls occurred in multiple instances throughout the community, with some units experiencing up to \$30,000 in water-related damage.

An engineering study revealed the unthinkable: short of one, untested expedient, the suggested cure-all required the replacement of all roofs and attic substructure throughout the complex.

Unit owners, who had paid top dollar for units averaging 2,800sf in size when built in 2006, were devastated. The association board was faced with a financial nightmare. A first attempt to remediate the problem through the creation of an impervious roofing membrane failed for reasons familiar to anyone experienced in shingling systems.

Only through the installation of a robust, overbuilt flashing schedule could the inherent failure-points accompanying the original roofing configuration be fully overcome.

First, proper flashing was run up cheek walls and precisely positioned behind fascia and trim. Underlayment water barriers of upwards of a yard in height were used extensively. A commercial-grade gutter and downspout system featuring 6-inch channels was installed.

Additionally, 6-foot ice shields were established around all gable edges featuring Tyvec, which was installed using special adhesives. A total shingle replacement provided uniform shielding across all roof surfaces.

Further, a rubberized ice shield was installed along drip edges and secured with an ultra-high-bond glue product. Outside and inside corners above roof pitches received the 3-foot flashing treatment, too.

Lead flashing was installed at joins as a matter of economy and flexibility. Lead's unique strength and durability make it an ideal product when multiple joins require a readily formed protective barrier. In total, 12 of the 54 affected units received this treatment in a preliminary test.

Human factors played a role in the remediation process as well. While this past season was an exceptionally mild one, unit owners had nothing to look forward to last fall but the misery and expense of one more New England winter. The remediation project was undertaken on the promise of a five-week timeframe, with no punch list on completion.

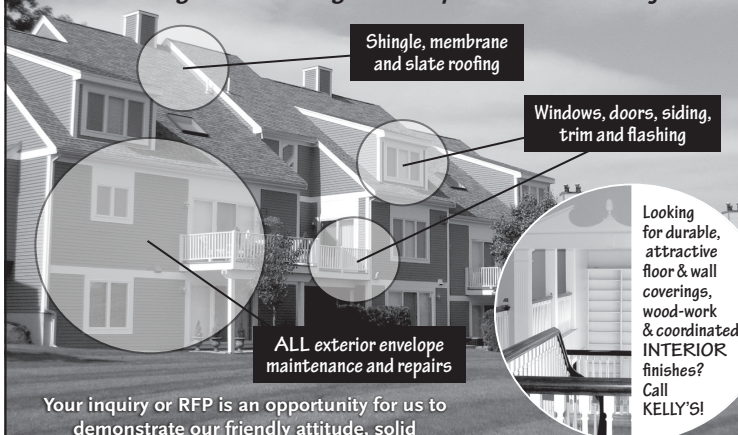
All remaining units in the complex are now under remediation, and a comprehensive solution to what on first consideration appeared to be an unmitigated disaster is well on the way to full completion.

The community association and its owner-members are enjoying the water-free living conditions they deserve while benefiting from significantly less cost than originally anticipated.

Bryan Kelly is president of Waltham, Mass.-based Kelly's Property Services.

HERE'S A TOP-QUALITY, ONE-STOP SOLUTION FOR ALL YOUR ROOFING, PAINTING AND CARPENTRY NEEDS!

Facilities and maintenance managers rely on KELLY'S PROPERTY SERVICES to ensure their buildings are always weather-tight and looking their very best. Call KELLY's for:



Shingle, membrane and slate roofing

Windows, doors, siding, trim and flashing

Looking for durable, attractive floor & wall coverings, wood-work & coordinated INTERIOR finishes? Call KELLY'S!

ALL exterior envelope maintenance and repairs

Your inquiry or RFP is an opportunity for us to demonstrate our friendly attitude, solid craftsmanship and expedited installation skills.

They've made Kelly's a favorite for quality and value since 1989.



KELLY'S PROPERTY SERVICES

508-958-2196 | www.KellysPropertyServices.com

Kelly's Property Services is fully licensed, insured and bonded in New England.