

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**

Never Too Steep; Sometimes Not Steep Enough

Steepness counts when it comes to the longevity of slate roofing. All other things being equal, the steeper the roof slope, the longer the slate shingles will last.¹

Pennsylvania Hard-Vein (Chapman) slate (see *Ridgewalker News* Vol.9, No.2) has an expected service life of about 100 years. This assumes a typical roof slope of between 8:12 (34°) and 14:12 (49°). Put the same slate on a Mansard roof with a slope of 25:12 (65°), like that the one pictured below (installed c.1895), and the service life shoots up to 120 years and still counting.



The Pennsylvania Black slate pictured on the roof at the top of the next column was installed c.1968. The roof contains a distinct pitch break, demarcated by the arrow. Slate on the upper section of the roof, where the roof slope is 13:12 (47°), is in decidedly better condition than that on the lower section of the roof where the slope is just 6:12 (27°).

The final photo illustrates the condition of the slate on the 6:12-slope section of the roof. It is severely delaminated and contains many cracked and broken slates. It should be replaced now (or, perhaps 5 years ago), whereas the slate on



the upper section of roof has a remaining service life of approximately 10 years. The slate on the 6:12 slope suffered a reduction in service life of approximately 20%.



The International Building Code (and tradition) allows slate shingles to be installed on roof slopes as low as 4:12 (18°), provided that a 4" headlap is used. While permitted, it is often not recommended. Slate laid on slopes ranging from 4:12 to 6:12 is not very visible from grade, relies more heavily on the roof underlayment system (which necessarily must be punctured by fasteners), and will not obtain the full expected service life of the slate. Other materials, such as standing seam or batten seam copper, for example, often are a better choice.

¹ Of course, all other things are never really equal. Climate, orientation/exposure of the roof slope, roof drainage patterns, quality of the installation, shading by trees, etc. – all impact the service life of slate shingles. But, we will leave these for another edition of *Ridgewalker News*.

Slope matters for several reasons: Snow and ice loads tend to be greater on lower sloped roofs. The added weight can cause slates to crack. Snow and ice also tends to push and jostle the slates, further increasing the chance of cracking and breakage over time. Perhaps more importantly, the lower the roof slope, the longer it takes for rainwater to drain off completely (i.e., the longer the slates stay wet) and the wider the angle of creep (the tendency of rainwater which enters the keyways between slates to spread fanwise between the overlapping slates). Lastly, the likelihood of foot traffic on lower sloped roofs is greater and with greater foot traffic comes the inevitability of greater numbers of broken slates.

LEVINE & COMPANY NEWS

Levine & Company recently moved into a swanky new office in Ardmore, PA. Our new digs provide space for additional work stations, ample storage for all those old project submittals, and an ADA-compliant bathroom bigger than my first apartment in Manhattan! Please note that our mailing address and phone number have not changed (though we did get rid of that pesky fax machine). Our new street address is 66 Rittenhouse Place, Ardmore, PA 19003. The next time you find yourself in Ardmore, swing by and say “hi.”



Ridgewalker News

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