

Natural Stone Roofs

The Ultimate “Green” Roof

By Joe Jenkins

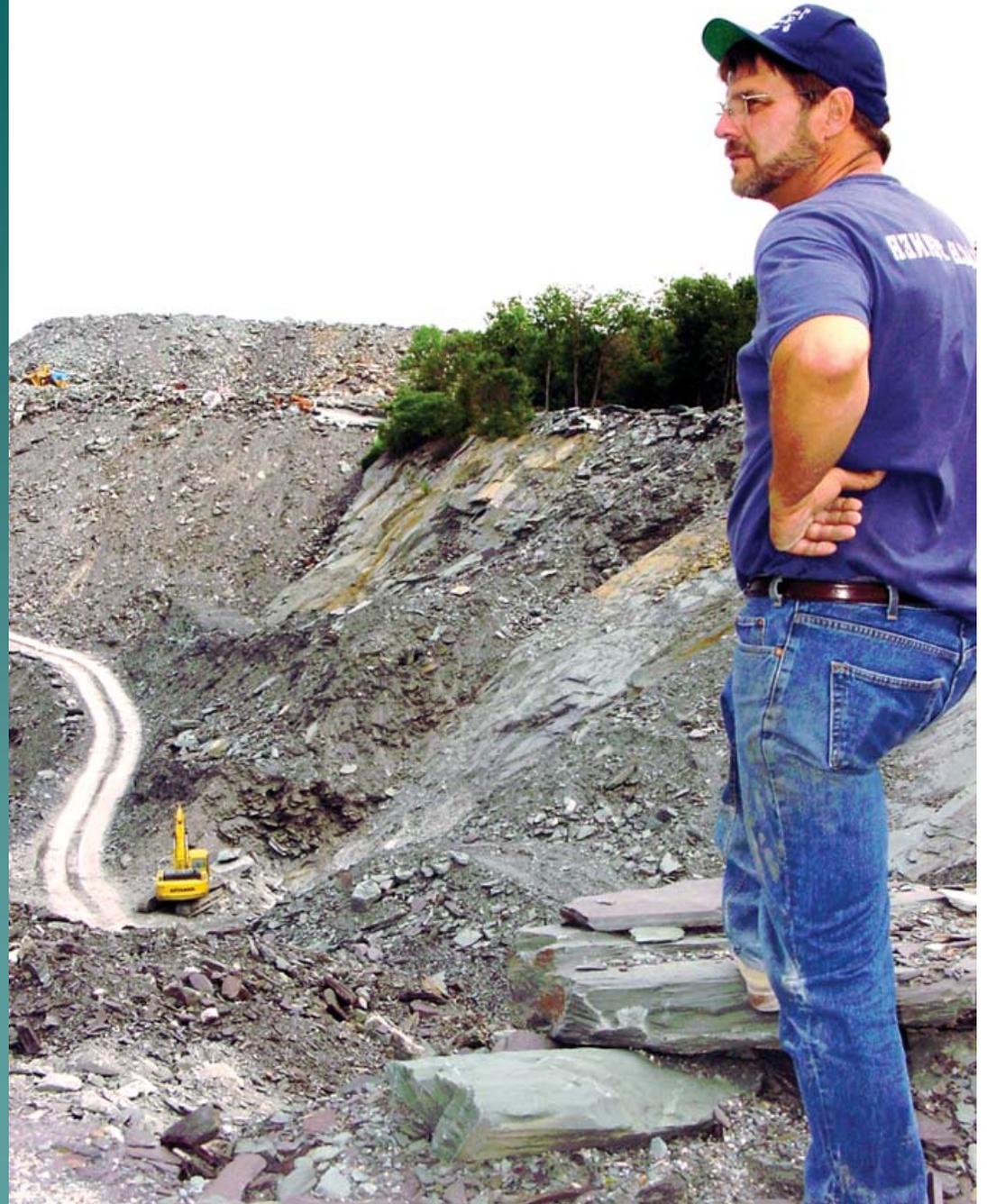
JosephJenkins.com



Slate roofs are made of natural stone. The rock is mined or quarried from the Earth. This is a quarry in Vermont.



This is
another
Vermont
quarry.



A
Pennsylvania
quarry is
carved into
solid slate
rock 350'
deep.



Slate quarries leave holes in the earth that fill up with water. This is an abandoned quarry hole in Ireland.



Another abandoned Irish quarry.



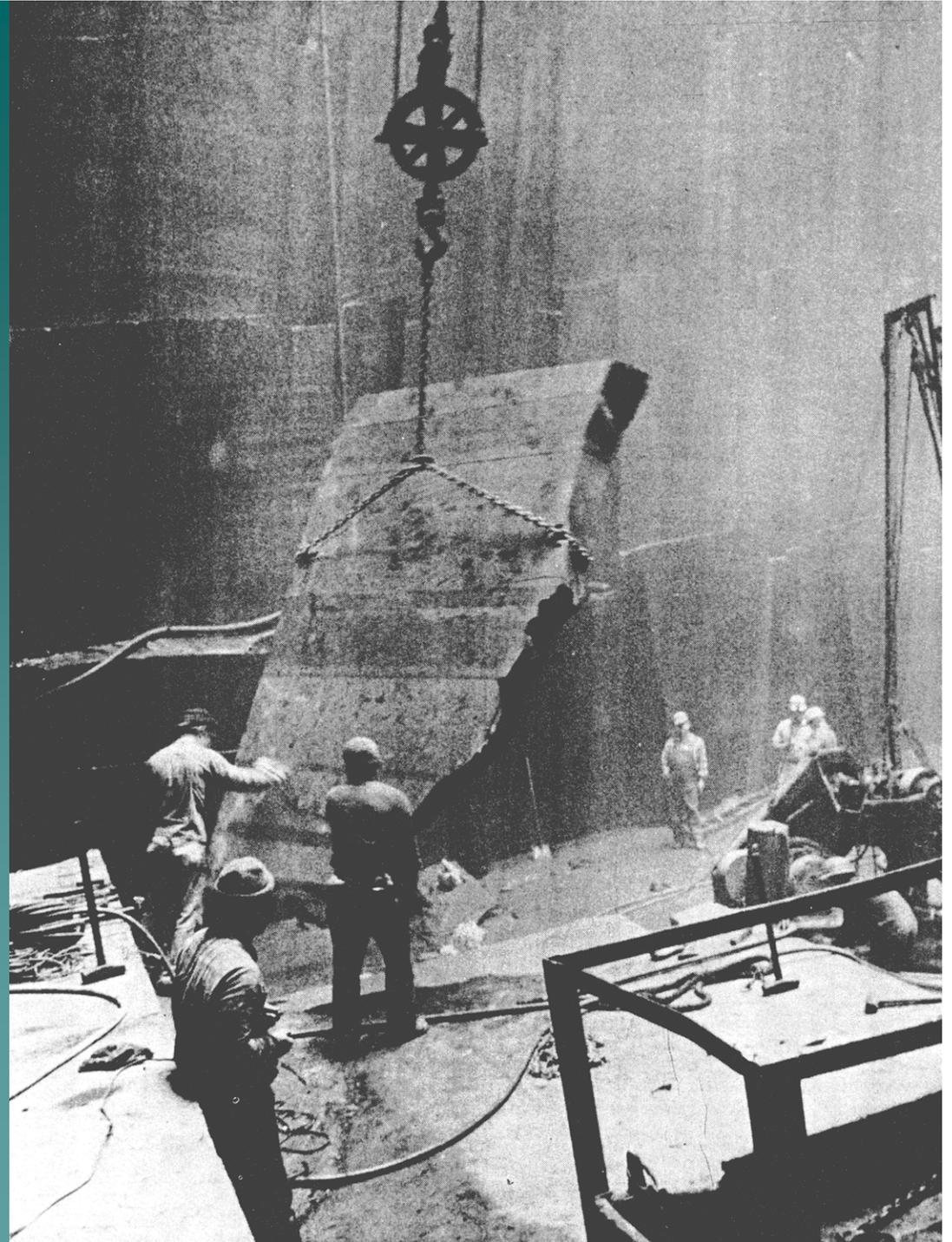
Much slate has been removed from underground mines instead of open-pit quarries. This is in Spain.



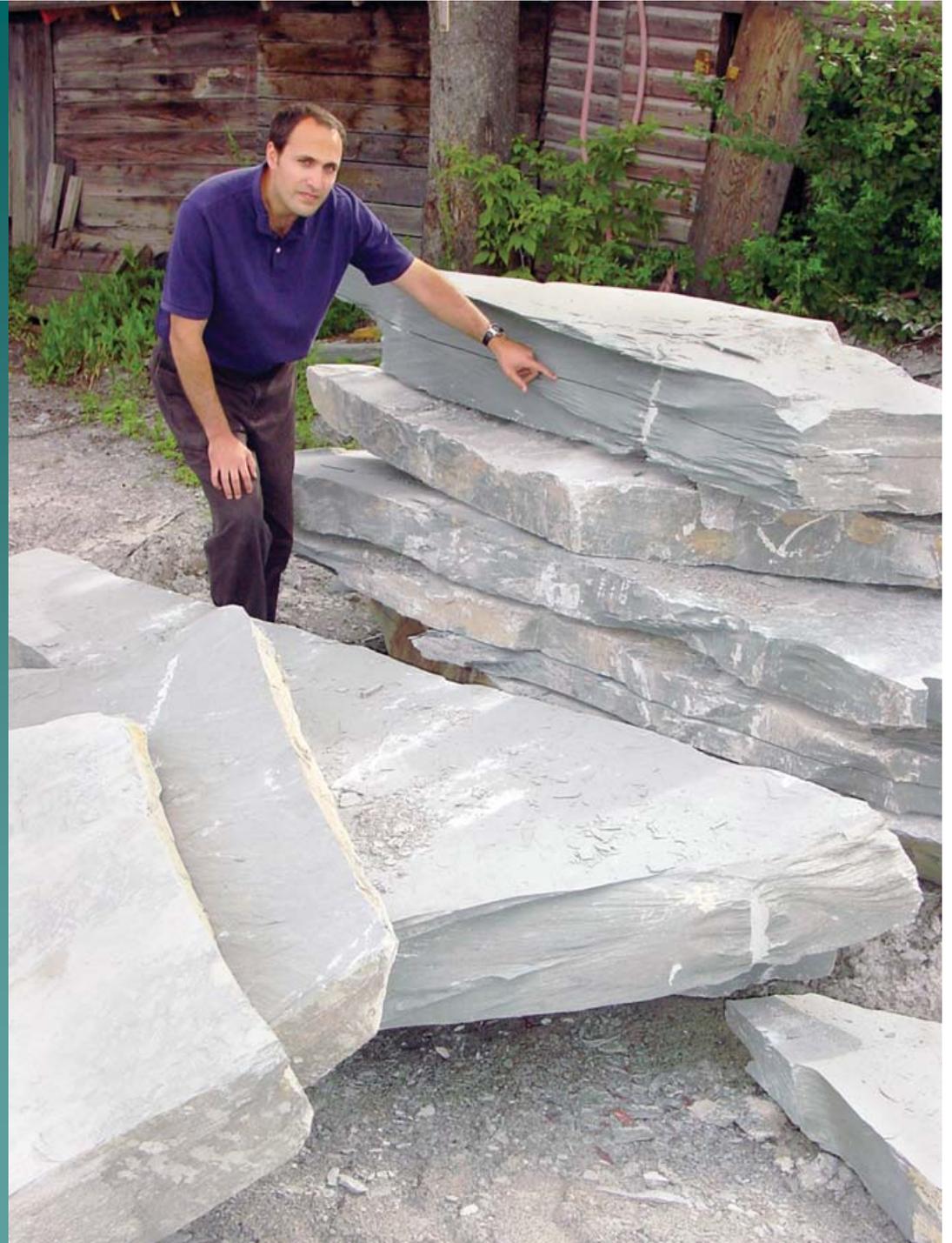
This is an
Irish mine,
still in partial
operation.



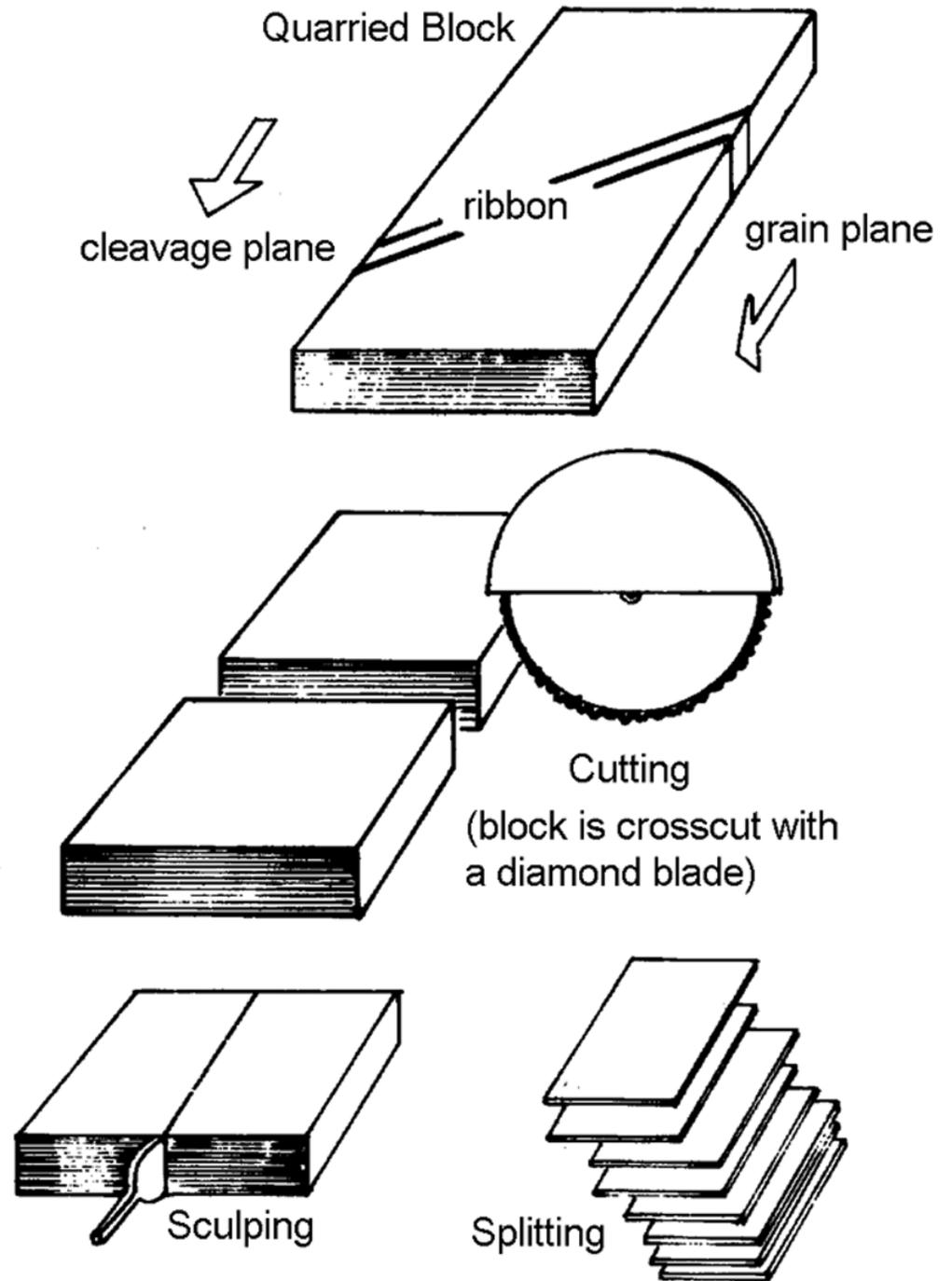
Large blocks of stone are removed from the quarry or mine.



The blocks
are split
according
to their
grain and
“cleavage.”



Smaller blocks are cut using a diamond saw.



These blocks
are ready to
be split into
shingles.



The slate is split into roofing shingles with hammers and chisels.



Another
splitter.



The
edges
are
trimmed
to size.



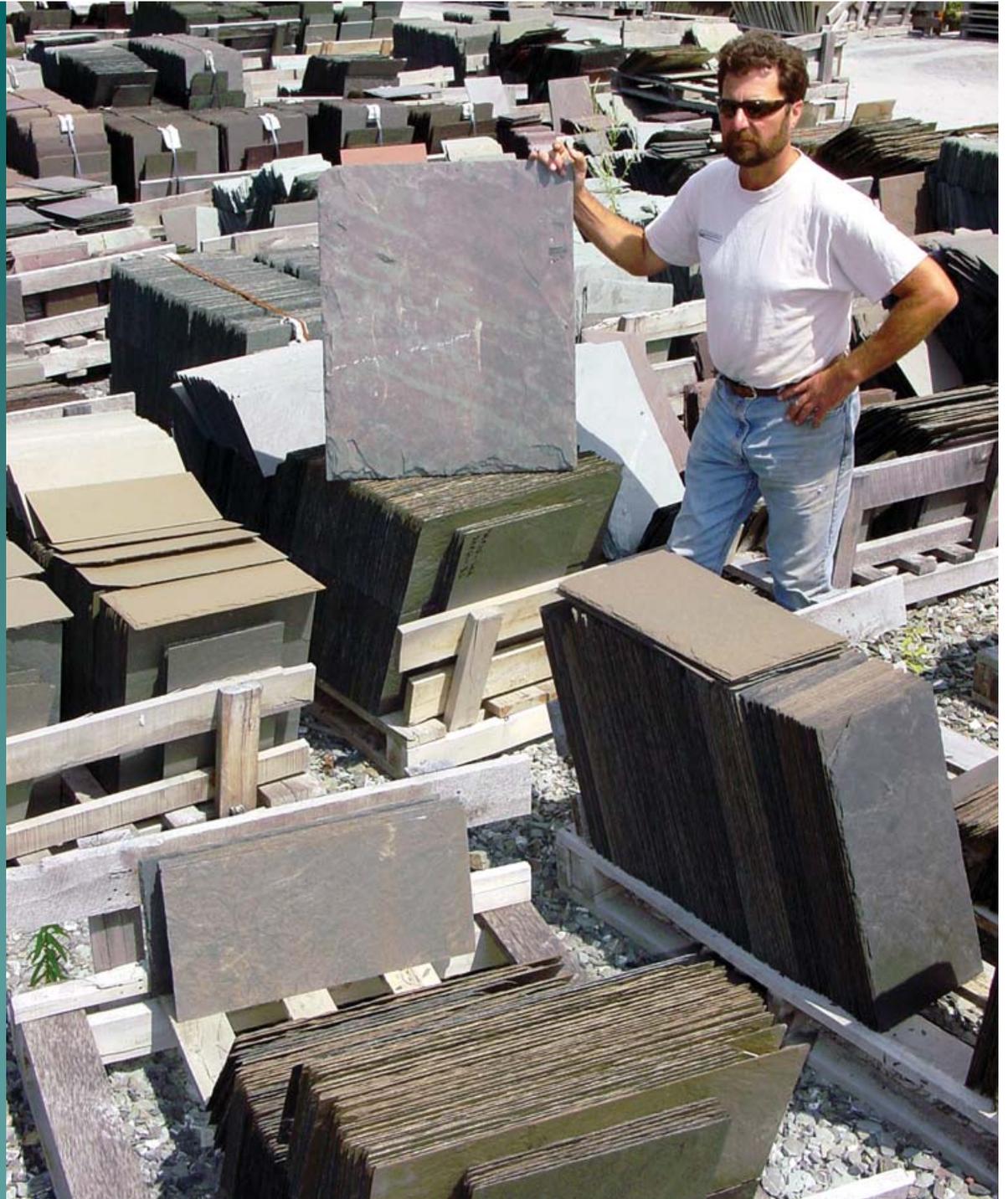
Nail holes
are then
punched
into the
slates
individually.



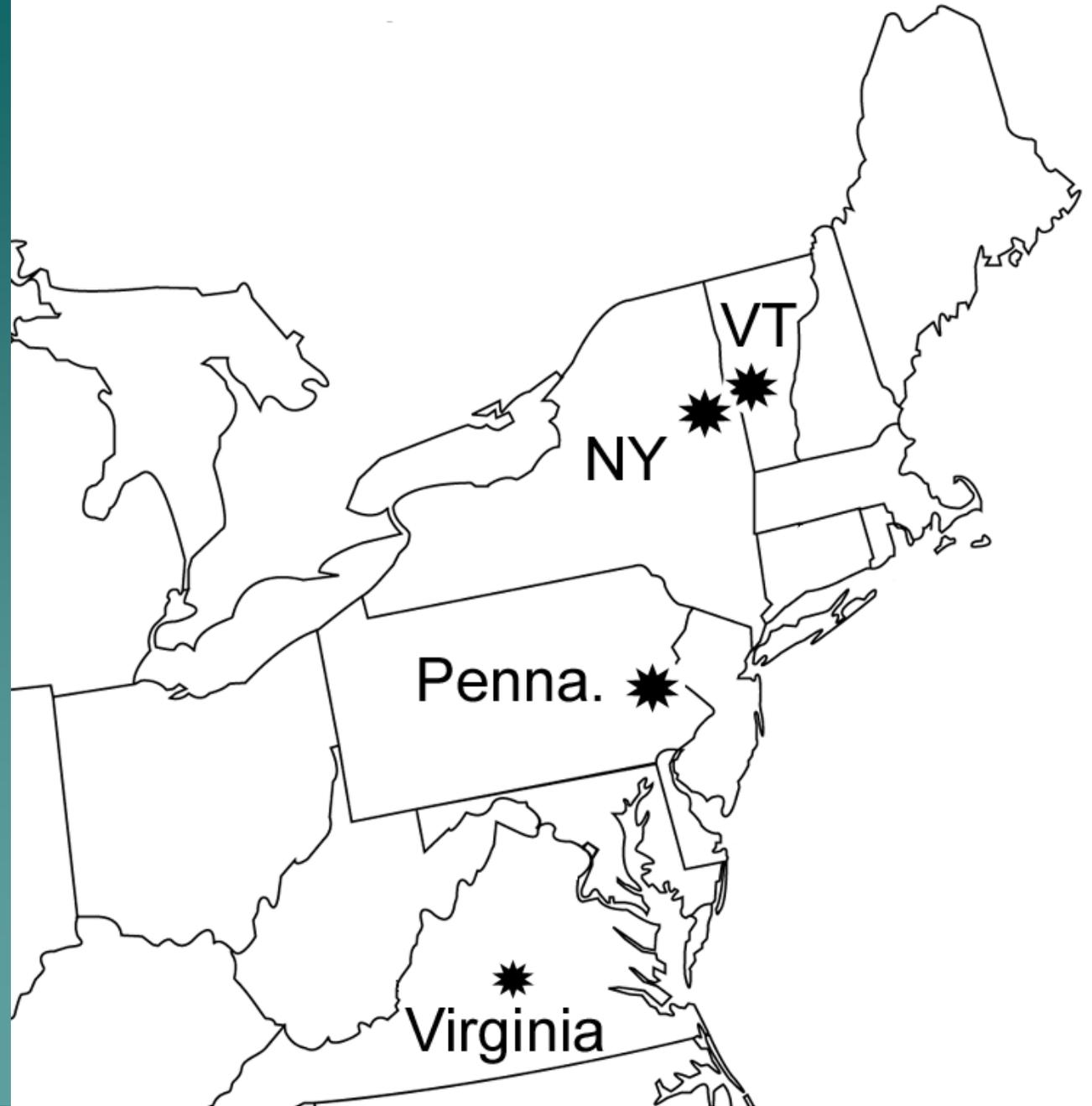
The finished shingles are then sorted, palletted and shipped.



New roofing
slates of all
sizes,
thicknesses
and colors
are
produced in
the USA
today.



Slate is still quarried in VT, PA, VA, NY, as well as in eastern Canada and around the world.



The finished stone shingles are usually fastened to the wood roof deck with nails.

The top edges of the slates follow a chalk line.



Slate roofs can have incredible longevity.



This roofing system can easily be duplicated today using only stone, wood and nails.



Felt underlayment is not necessary on slate roofs. It was never used on barns.



On older buildings, the original underlayment is disintegrated. This old house never had underlayment.



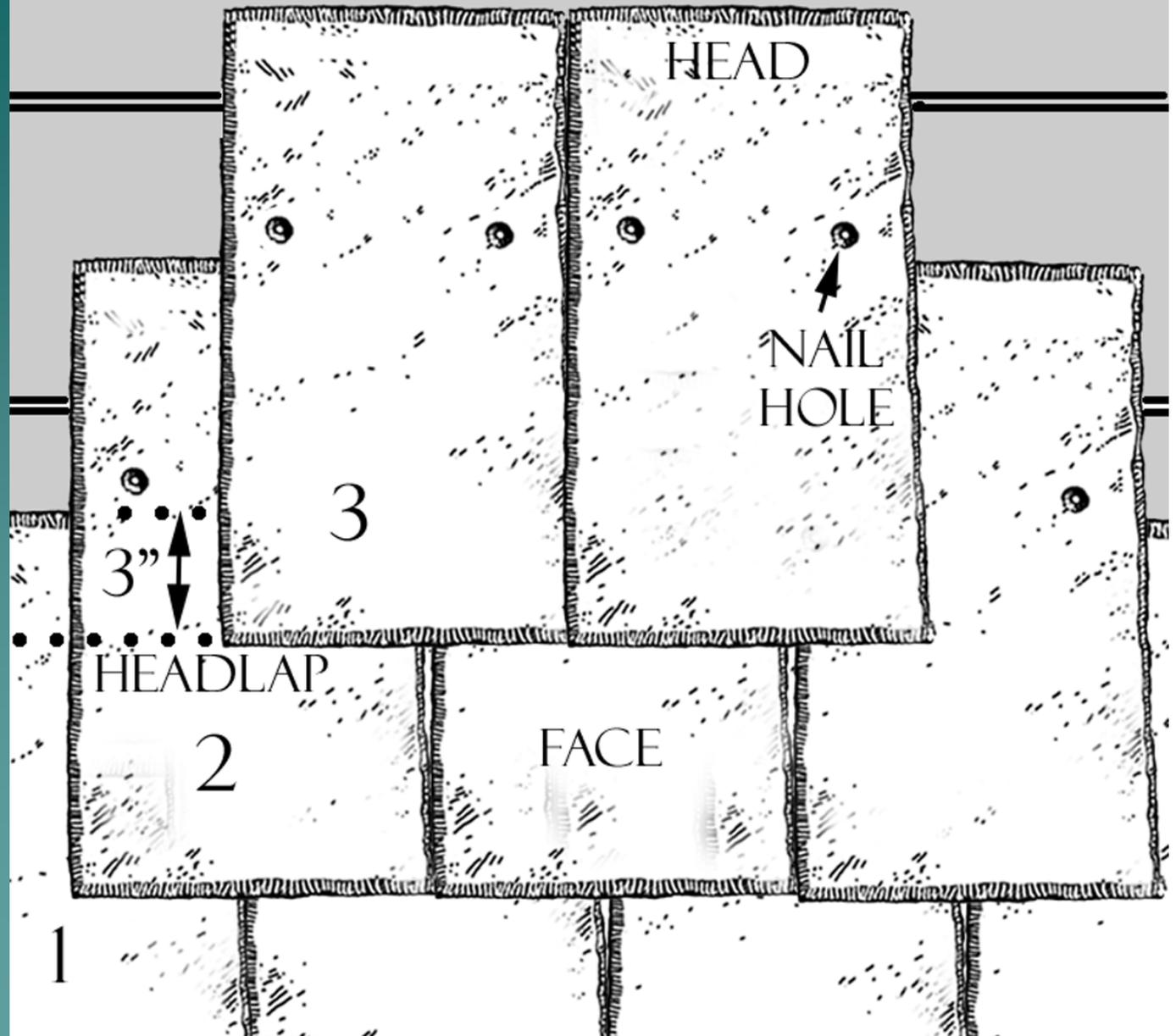
Most American slate roofs are installed in a “standard” installation, with all the slates being the same length and width.



HEADLAP

Headlap is the overlap on the “head” of the slate. The headlap is critical because it keeps the water out.

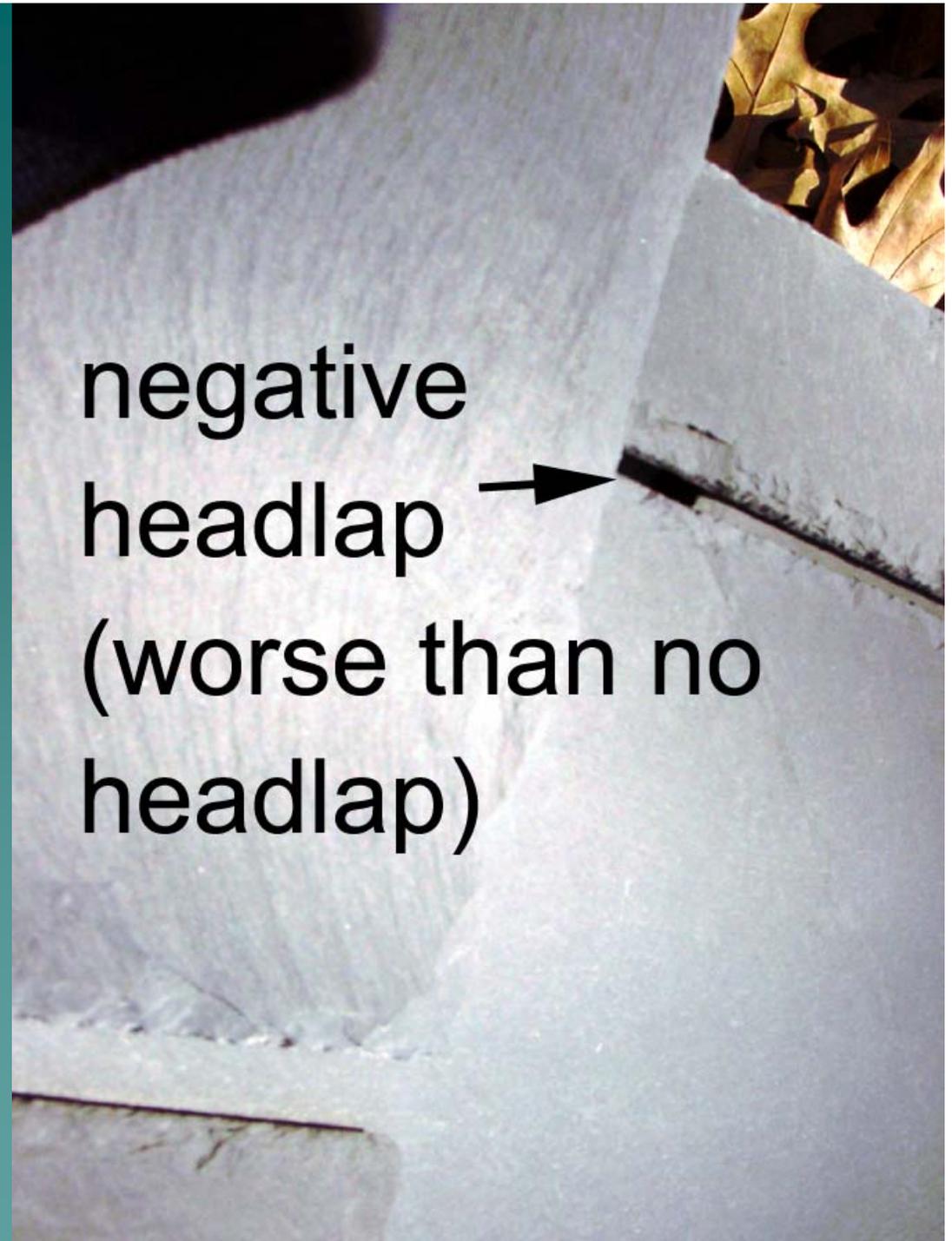
WOOD ROOF DECK



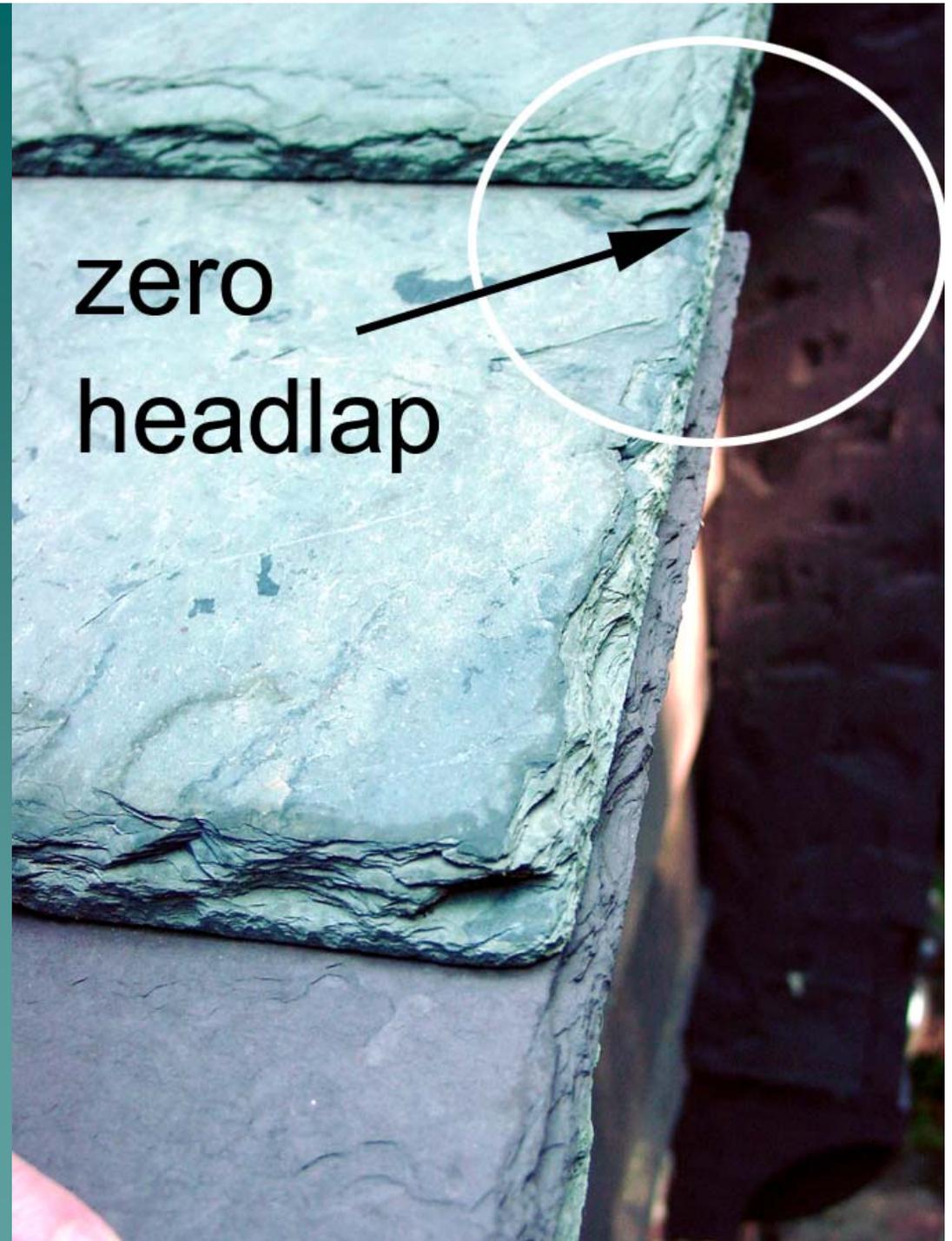
Note the lack of headlap. This new slate roof at a university was installed incorrectly.



Same roof even shows areas of negative headlap. This new slate roof will probably be condemned.



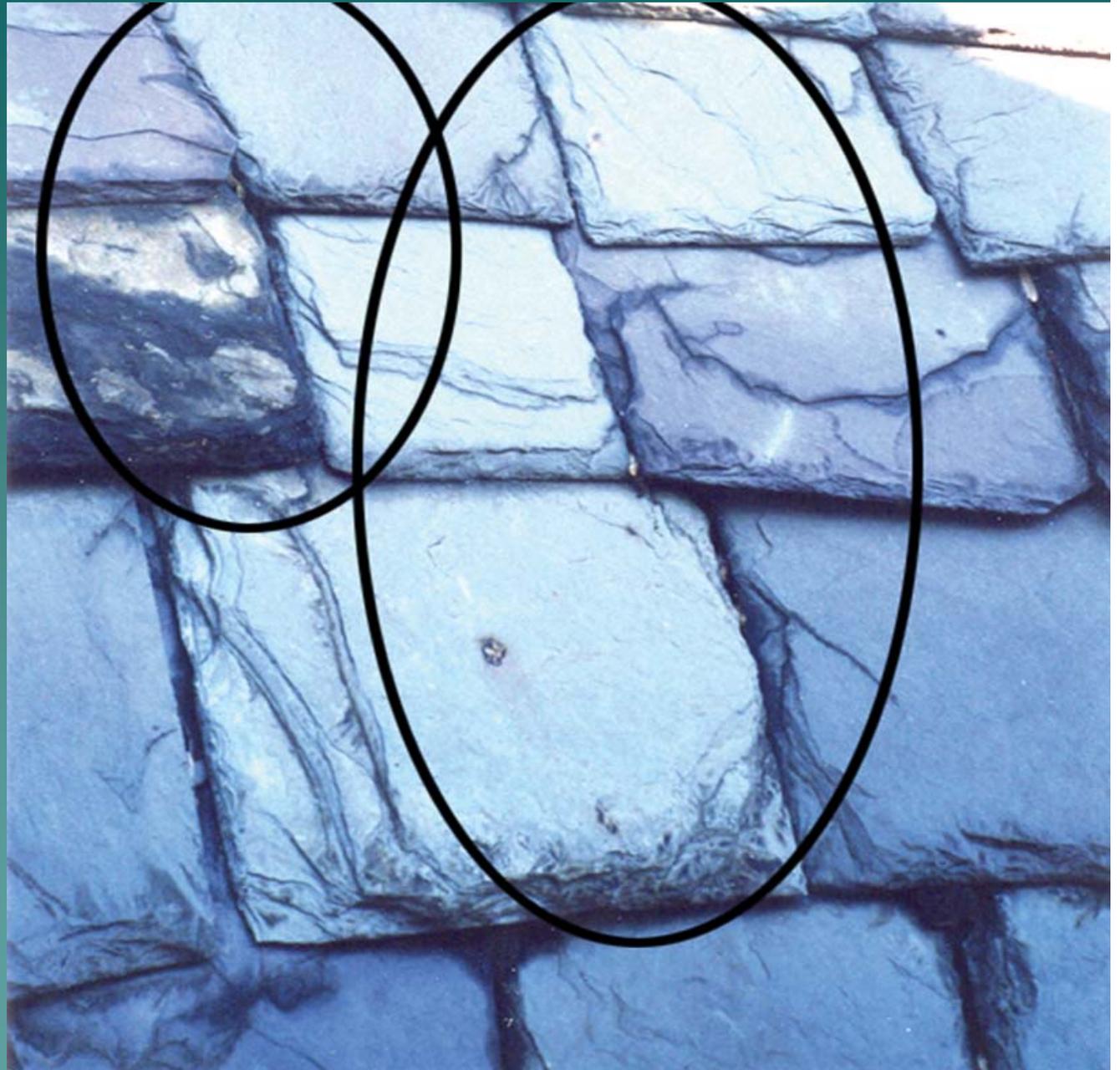
Another case of zero headlap on a large historic building. The entire roof was installed incorrectly and had to be removed and reslated.



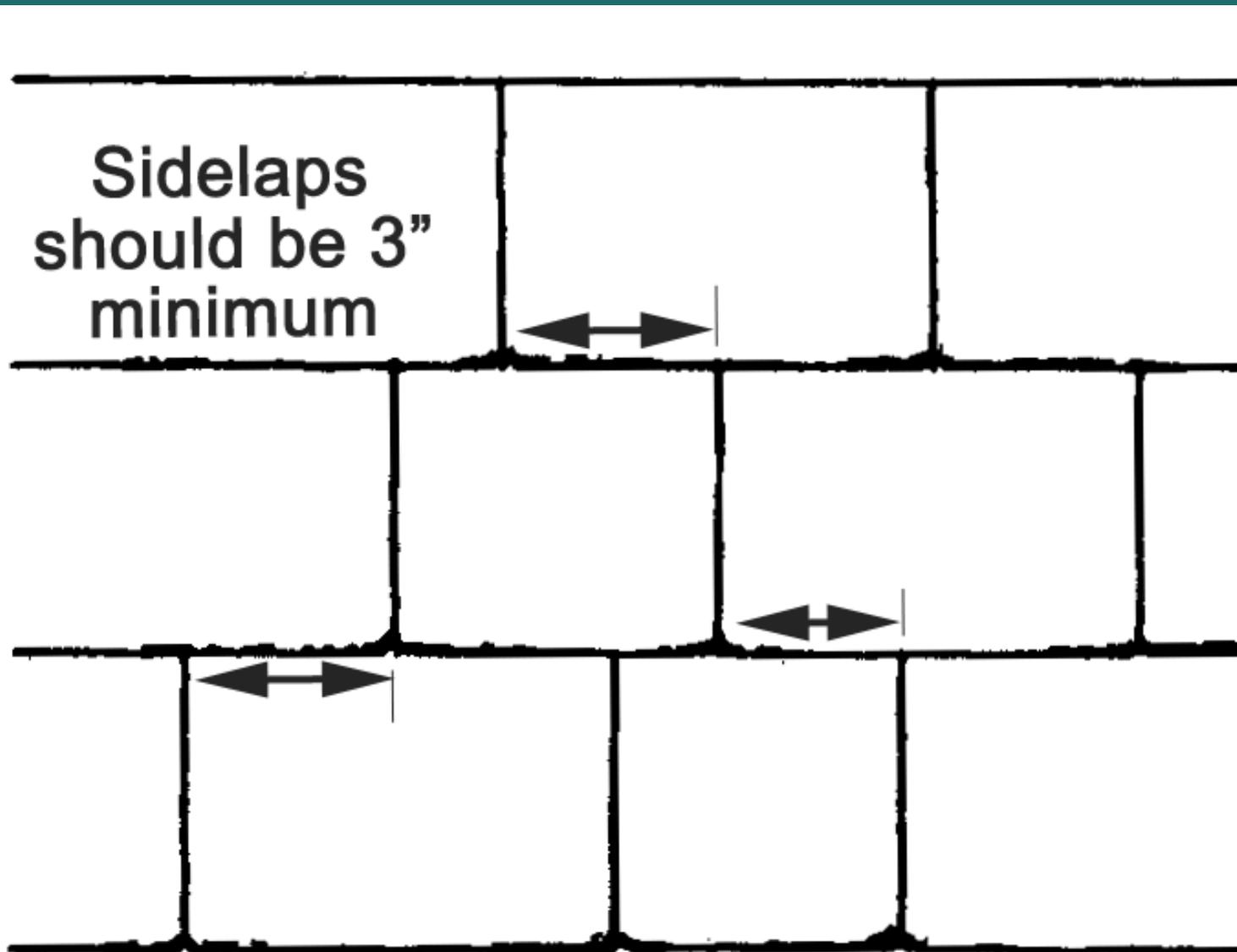
Slates can also be installed using the same lengths, but random widths.



When using random widths, attention must be paid to sidelaps. These are incorrect.



Sidelaps



Slate is versatile and can be installed in many styles. This is a “ragged butt,” random width, mixed color style near Chicago.



A similar slate roof in Pennsylvania.



Slate can also be installed in a “staggered butt” style by varying the lengths.



Staggered butt slating creates a rustic look. All these slates are recycled.



Mixing colors creates a visually appealing effect.
This is a VT green and VT purple slate roof.



Mixed colors, lengths and widths on a slate roof in PA, mostly recycled.



The slates on this roof are 3 lengths, 5 widths, 7 colors.



3 lengths, random widths, mixed colors, all rounded by hand, mostly recycled.



Same roof.



Another view.



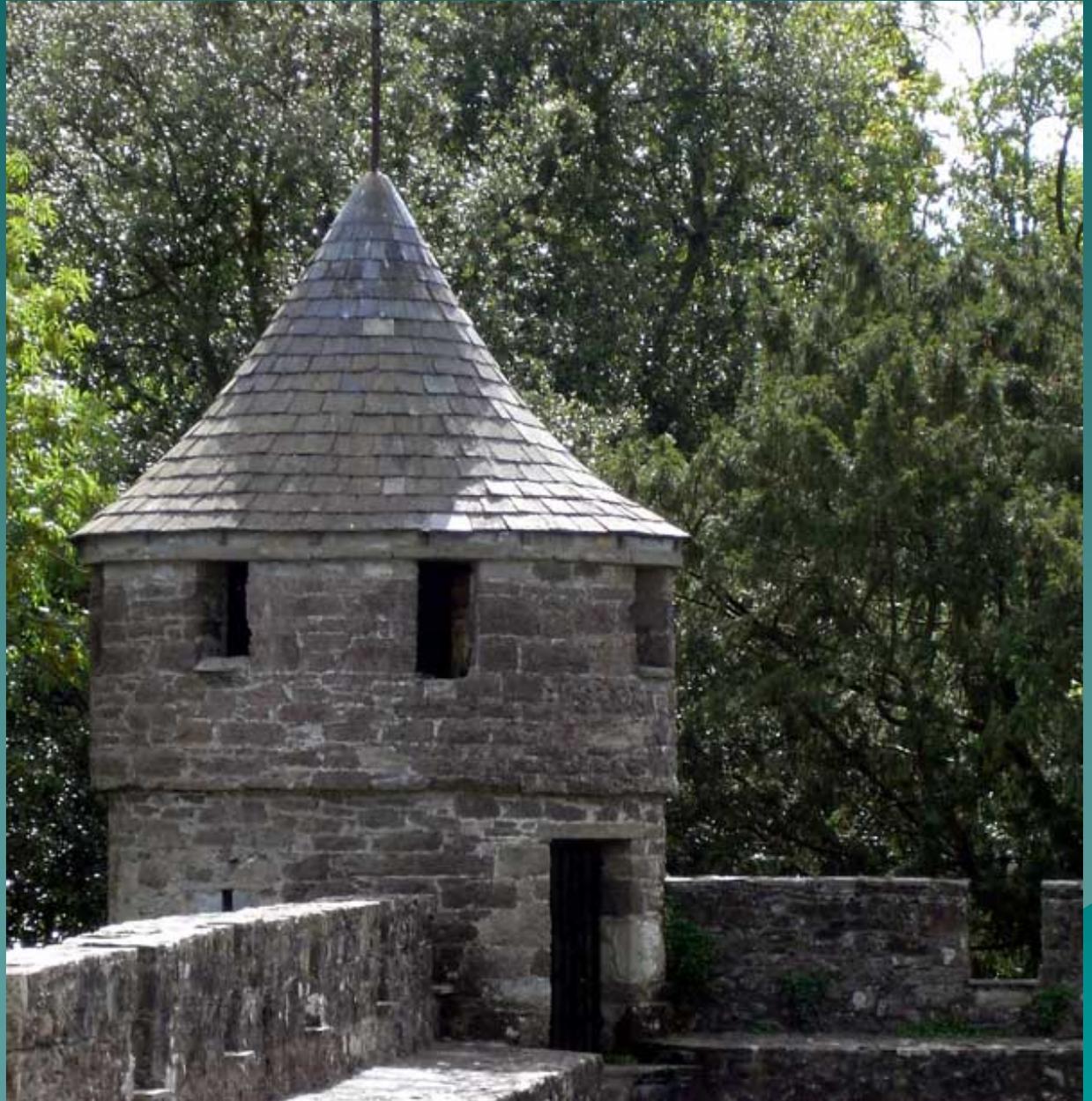
Slate is versatile enough to install on curved surfaces, both concave...



And
convex.



An old
slate roof
in Ireland
showing
a double
curve.



Different shapes can be combined to yield interesting effects. These are all recycled.



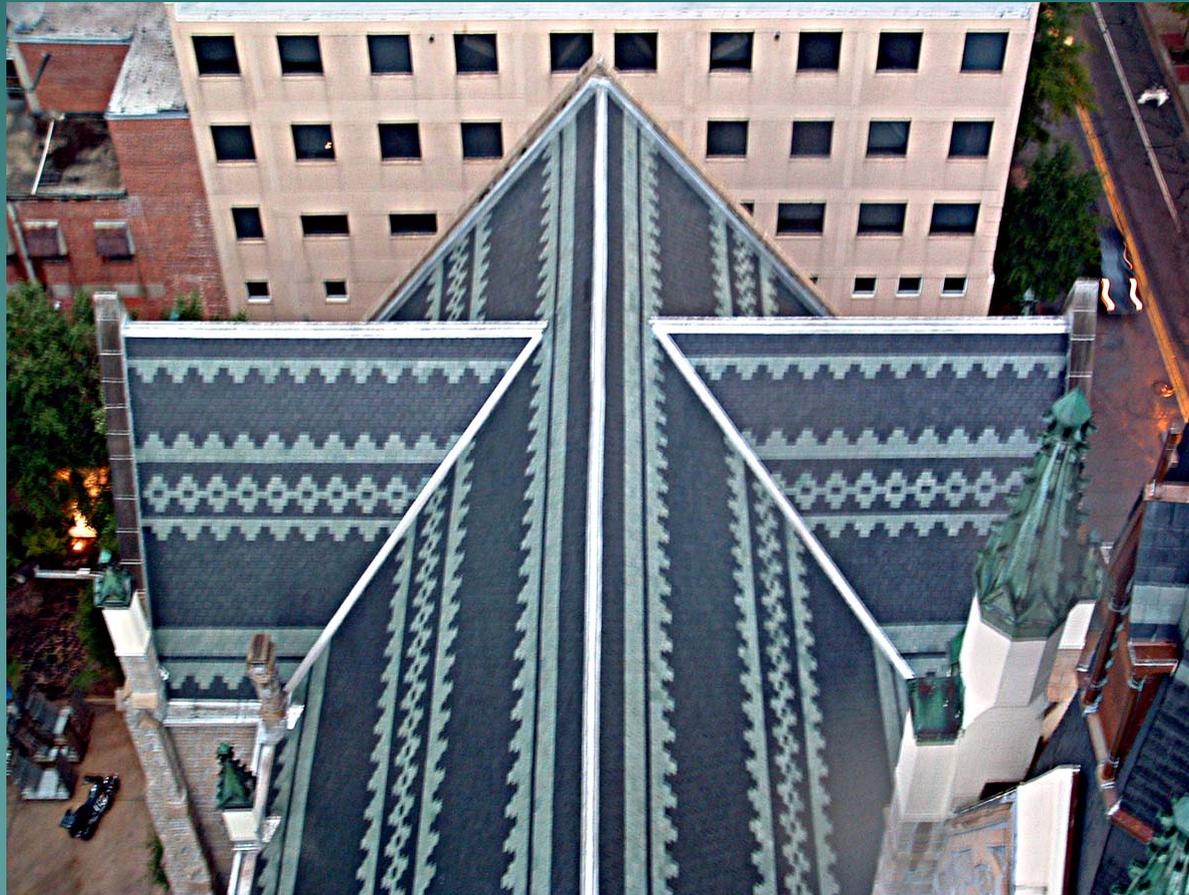
Here's an example of how simply changing the shape of some slates will drastically alter the appearance of the roof.



Combining different colors and shapes can create an artistic roof.



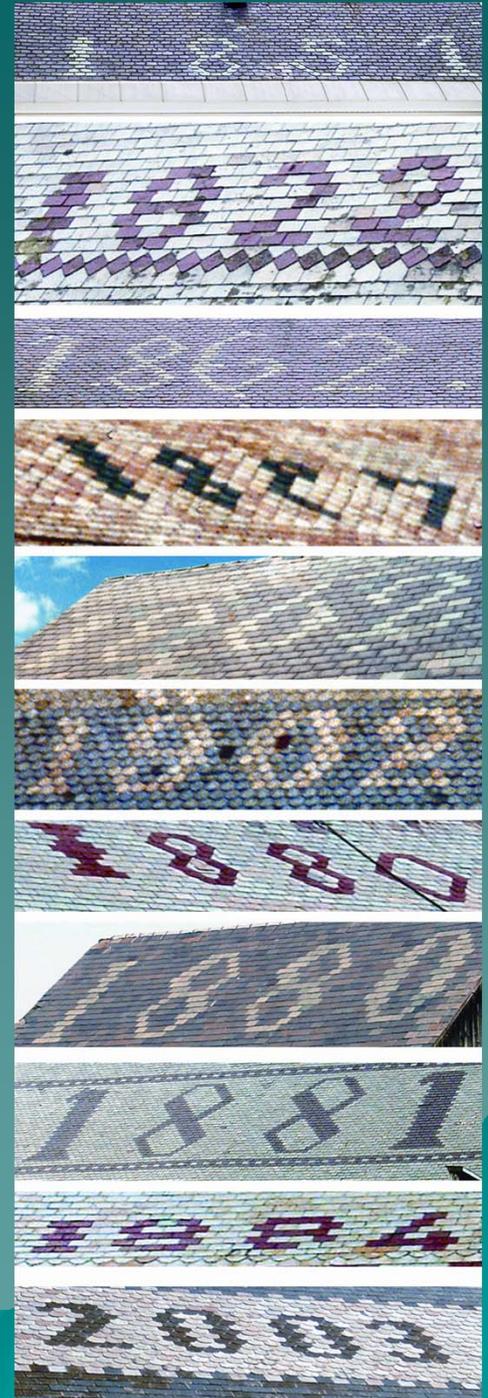
Here's an example of a two color roof. All the slates are the same size and shape.



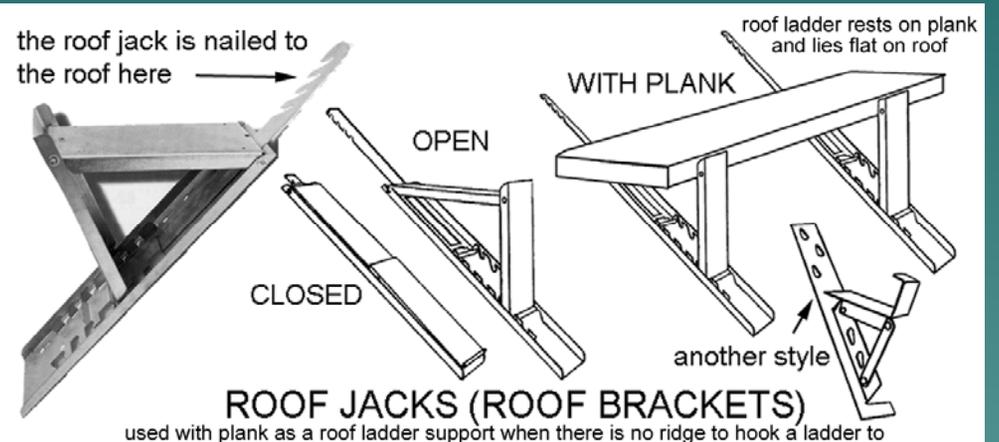
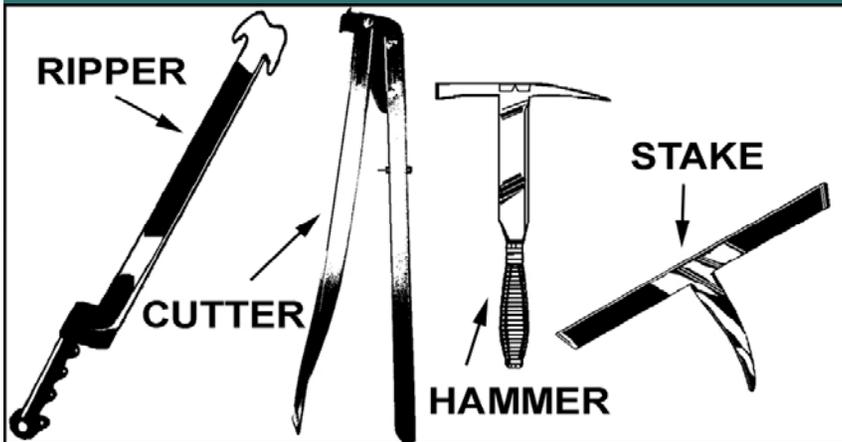
Colors can be combined to inscribe words.



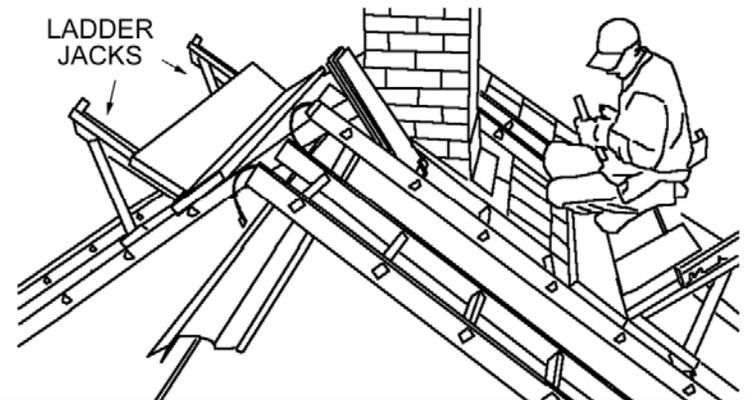
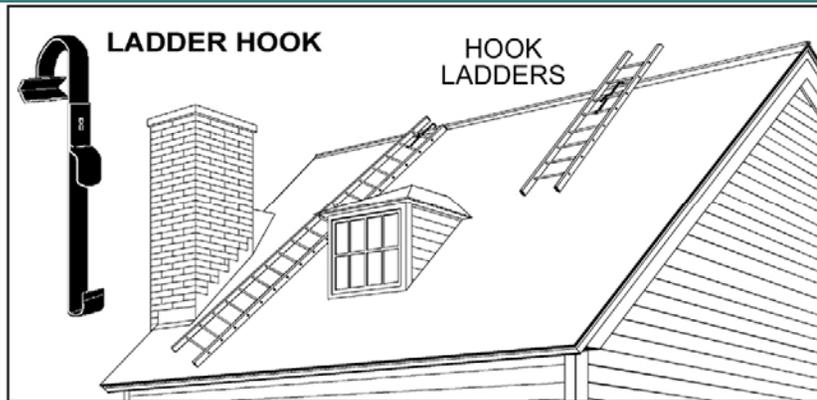
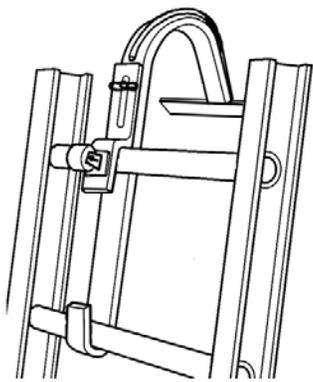
And dates...



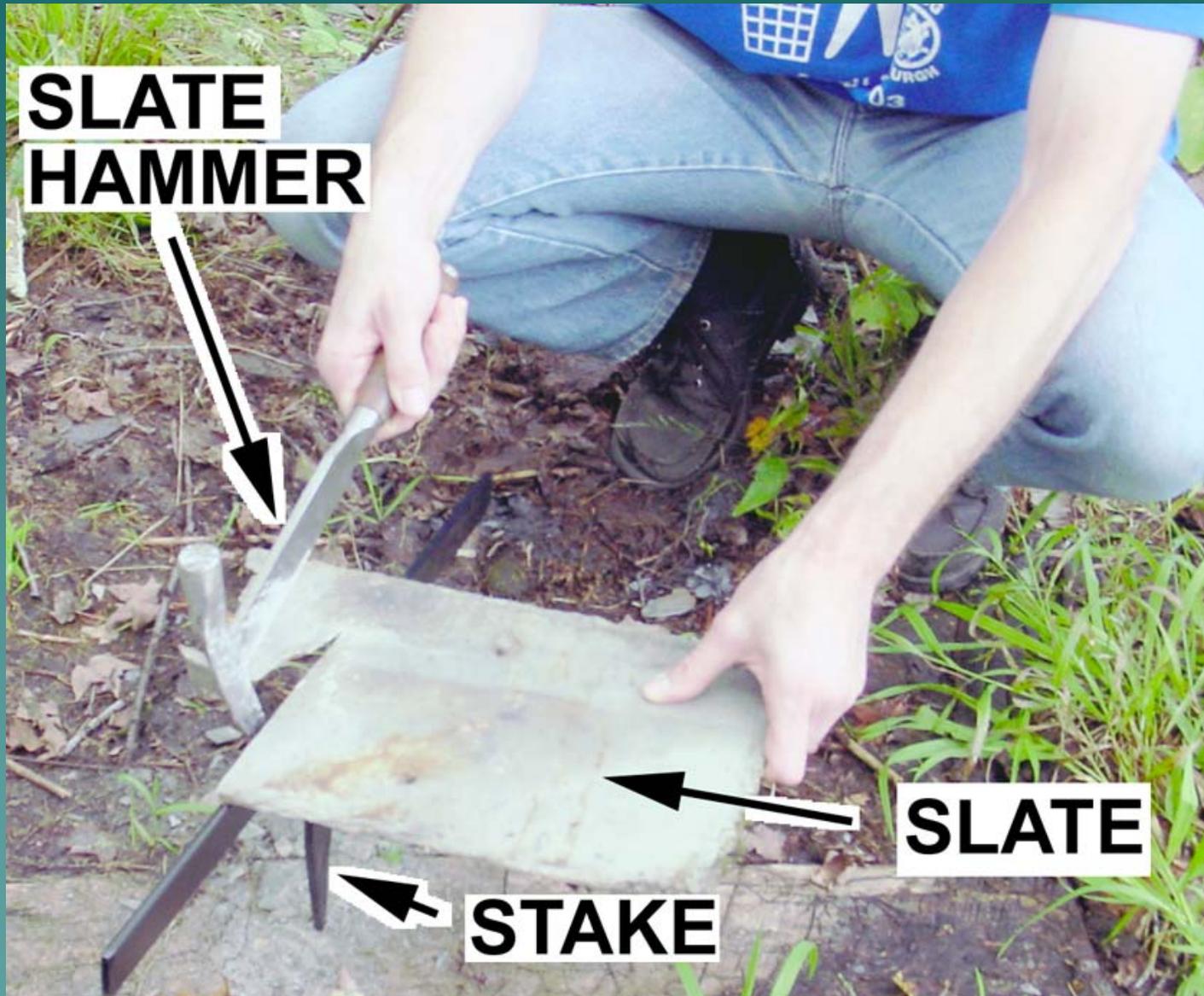
Slate roofing tools:



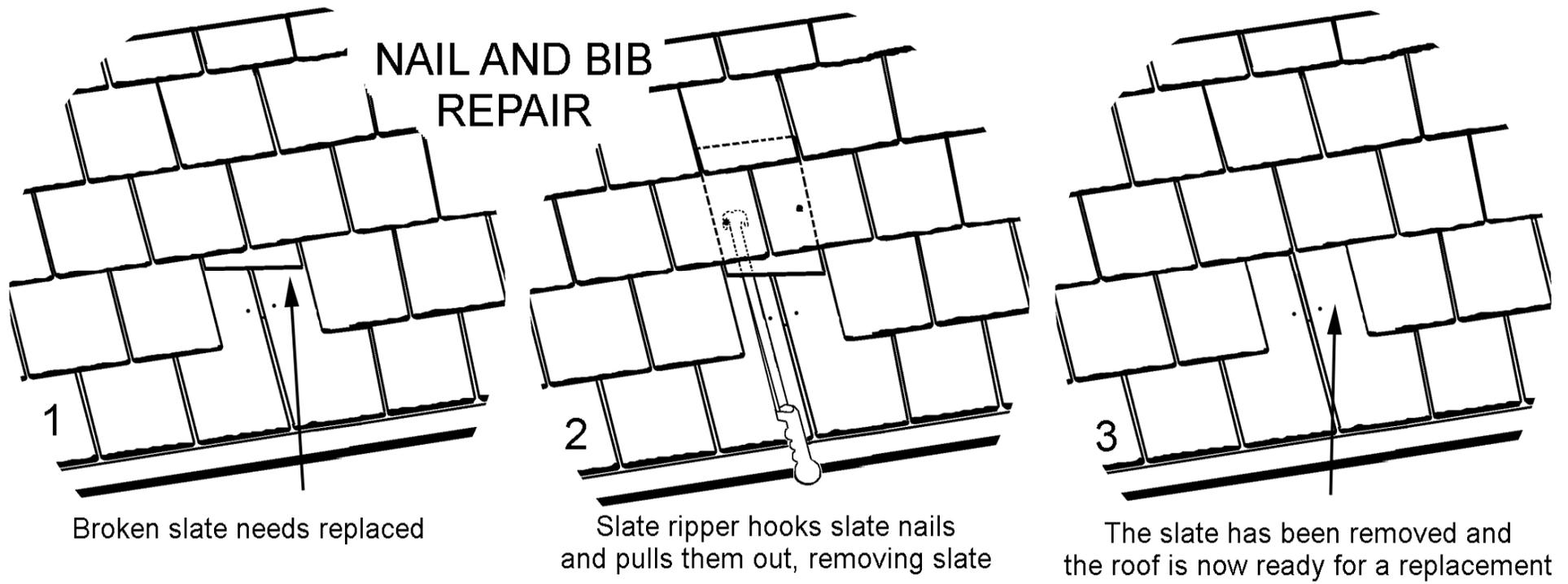
Hook ladders allow access to existing slate roofs.



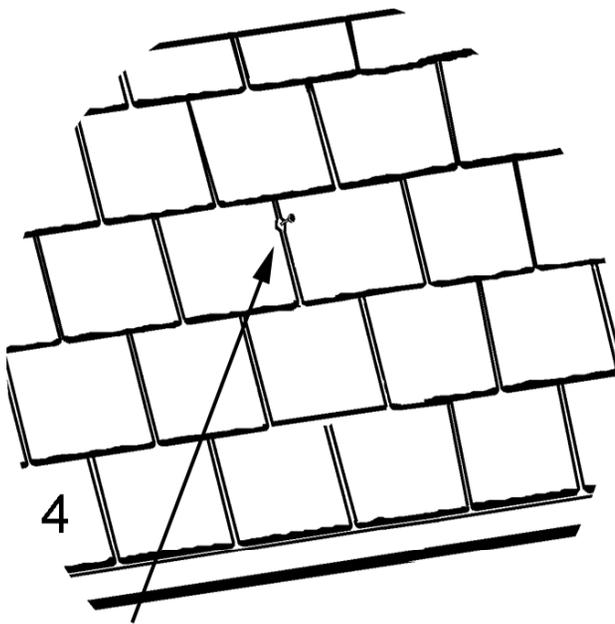
Thicker slates can be cut with a hammer and a stake by chopping them.



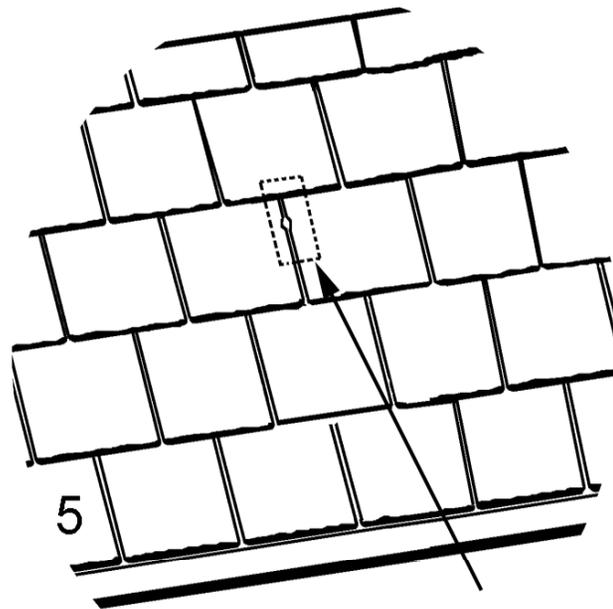
Any individual slate can be removed and replaced.



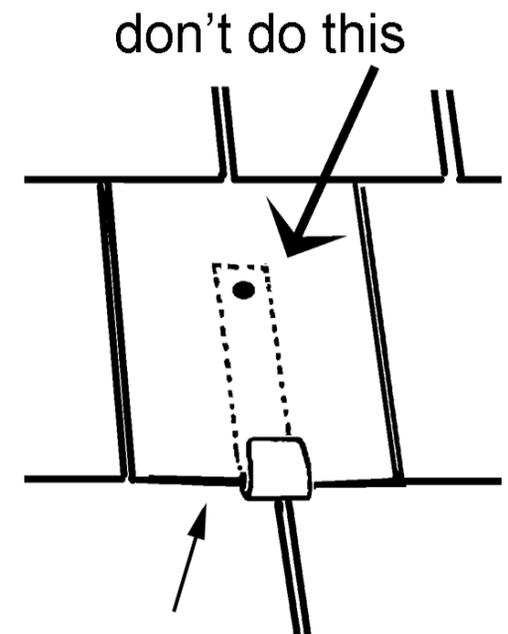
The nail and bib repair is common. Exposed strap hangers are not acceptable.



Replacement slate is slid into place and fastened with a nail in the slot



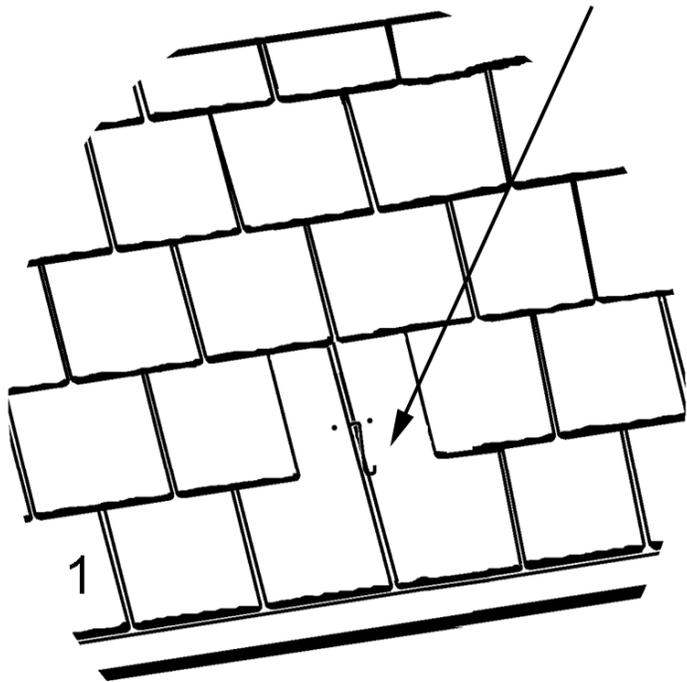
The roofing nail is tapped down and a bib flashing is slid under the slate but over the nail head



The above strap technique is undesirable for two basic reasons: it looks bad and the straps are easily bent open by sliding ice and snow

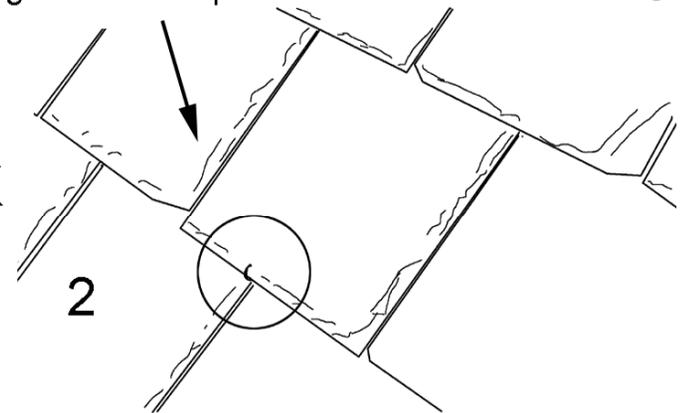
Slate hook repairs are also acceptable.

Alternatively, a copper or stainless steel slate hook can be nailed into place after the old broken slate has been removed



The replacement slate is then slid in place where it is permanently held by the slate hook. The hook can be pushed down between the underlying slates, if needed, in order to make more room for sliding the slate in place.

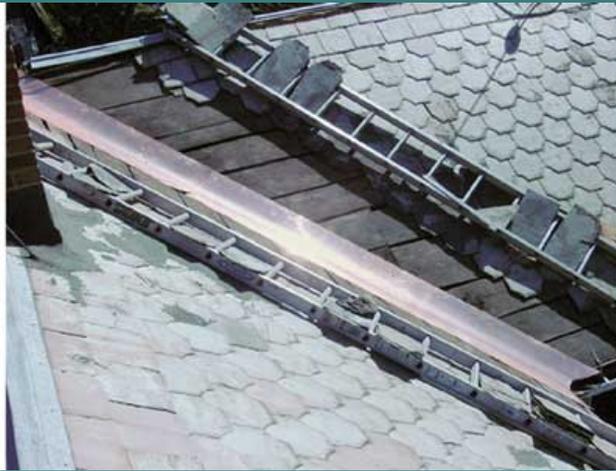
SLATE HOOK REPAIR



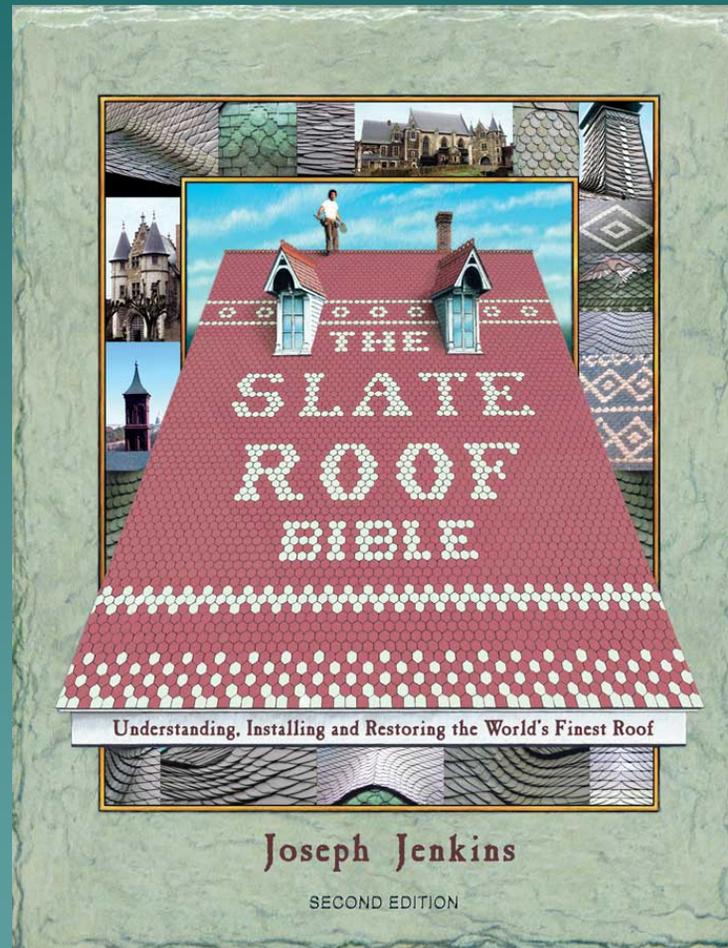
Slate roofs are highly repairable.



If the slate is still good, no matter how bad it looks, the roof can be restored.



There is much more information about slate roofs in the Slate Roof Bible.



For More Information:

- ◆ slateroofcentral.com
- ◆ traditionalroofing.com
- ◆ josephjenkins.com
- ◆ slateroofers.org
- ◆ **The Slate Roof Bible** (available on Amazon.com, bookstores, etc., or slateroofcentral.com)
- ◆ Call us toll free at 866-641-7141