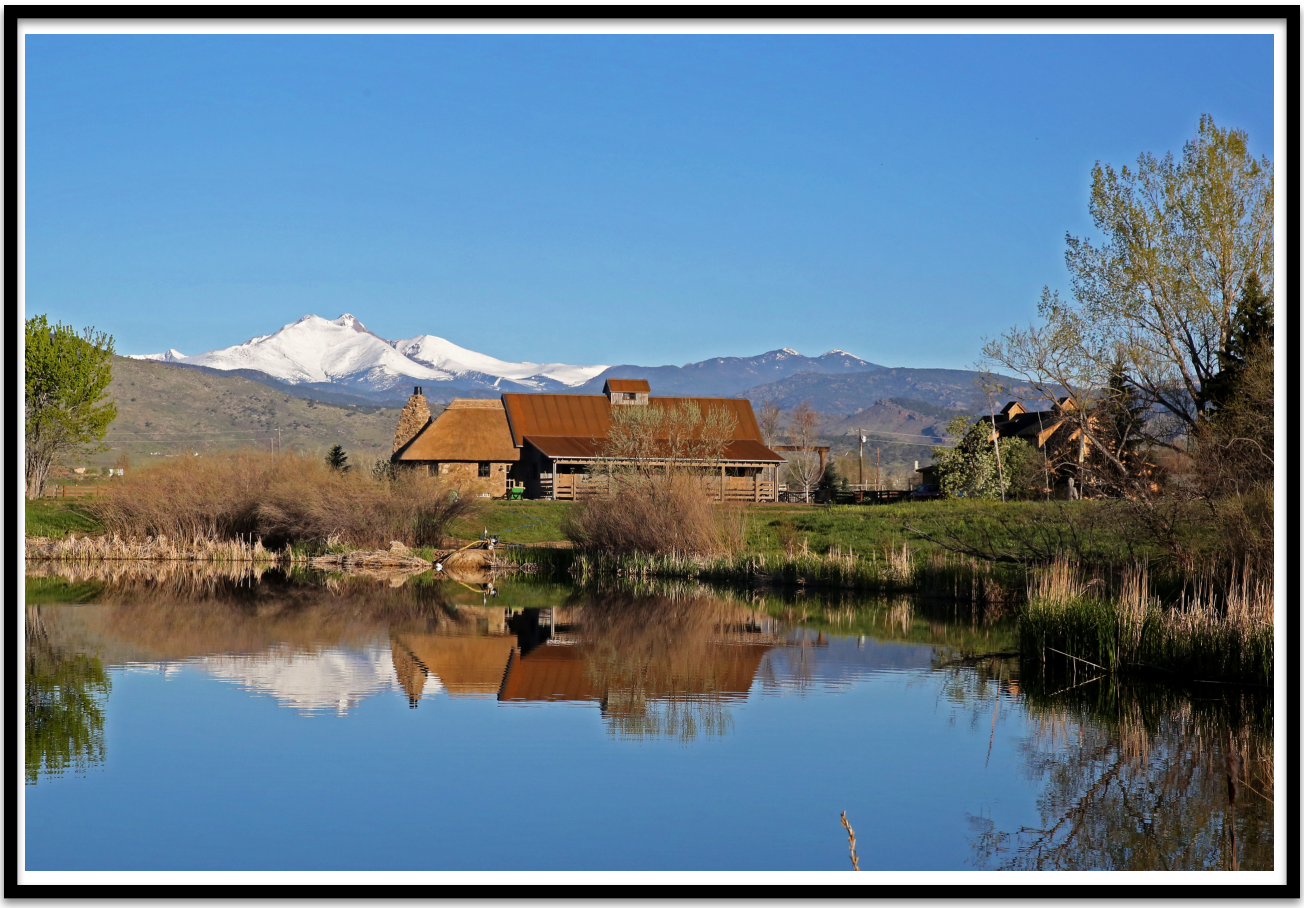

Colorado Roofing Association

Awards 2017

Boulder Roofing, Inc.

Crane Hollow Barn

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Corrugated Metal & Thatch Roof Systems

CRANE HOLLOW BARN
PRIVATE RESIDENCE
Project cost: $83,585

ROOF SYSTEMS

METAL*:* 36 squares, 3/12 & 12/12 pitch

Titanium PSU30 high-temp underlayment over OSB sheathing

7/8" corrugated 22-gauge cold rolled exposed fastener metal roof panels

Fabricated & installed all eave, rake, ridge, sidewall, headwall & pitch-change flashings

THATCH: 11 squares, 12/12 pitch

1" thick turkish water reed secured with wood lath over 2x4 pre-stained wood purlin framing

7/16" OSB decking

1/4" DensDeck gypsum board

TItanium PSU30 high-temp underlayment

14" thick turkish water reed secured with 1/4" steel rod & stainless steel wire fixings @ 8" on every course

Sheet lead for chimney flashing

Prepainted 24 ga. thru-wall base flashing at masonry chimney and wall

Decorative ridge secured with galvanized wire netting

Thatch-Safe fire retardant spray

SAFETY CONSIDERATIONS

Metal roof: Personal fall arrest systems were used

Thatch roof: Scaffolded perimeter of round structure

Utilized telescoping manlift for work above scaffolding as work progressed.

JOB CONDITIONS

This beautiful barn was planned & created to honor the homeowners' love of their unique farm animals and the seasons - the harvest, the solstice, and the gathering and burning of herbs to celebrate the same. So important was this ideal, that one of the eastern windows in the building was aligned to allow the first daylight of the Winter Solstice to shine exactly on the interior tree post - a walnut tree that had been found on the property, then cut and beautified to be the centerpiece of the structure. Affectionately dubbed 'The Witch's Hut', the circular part of the barn was designed to be unique, natural and fun. Thatch was selected for the roof to compliment the rusty metal on the remainder of the barn, the interior wood elements and the massive stone chimney.

With no specific building code related to thatch roofs in Boulder County, it was necessary to provide documentation and specifications related to wind uplift and adequate fire rating in order to obtain the building permit.

Traditionally, this centuries old roof system is installed directly over the purlins or wood framing. Water reed is waterproof by nature. Bundling enough of these water-shedding plants and securing them tightly with steel rods and wire fixings, the thatch roof becomes both wind and water resistant. It is also an extremely thermally efficient roof system, keeping the building cool in summer, warm in winter, and 'breathing' so effectively that no additional attic ventilation is required.

With a wood burning fireplace inside, and situated in notoriously windy Boulder County however, the Building Department required more than the traditional installation. DensDeck was installed over 7/16" OSB, both of which were sandwiched between layers of thatch, so that the thatch was visible from the underside as well as from above. The DensDeck combined with a Thatch-Safe fire retardant spray on the finished product fulfilled the Class A fire rating to meet code.

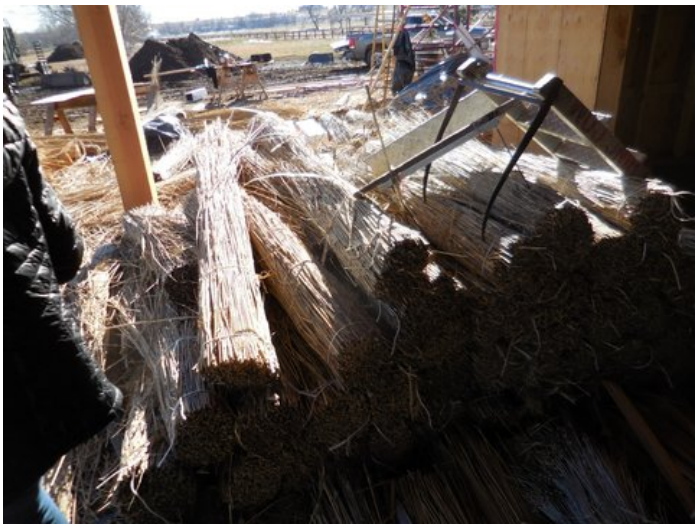
Colin McGhee, Master Thatcher from the UK and currently based in Virginia, provided installation specifications which satisfied concerns from the County related to wind uplift as well. Following ‘manufacturer's installation instructions for high-wind nailing’ didn’t quite pertain to this roof application! Once the permit was secured, it was necessary to order materials well prior to the scheduled roof installation, as we worked around the reed harvest season as opposed to the framing and construction schedule.

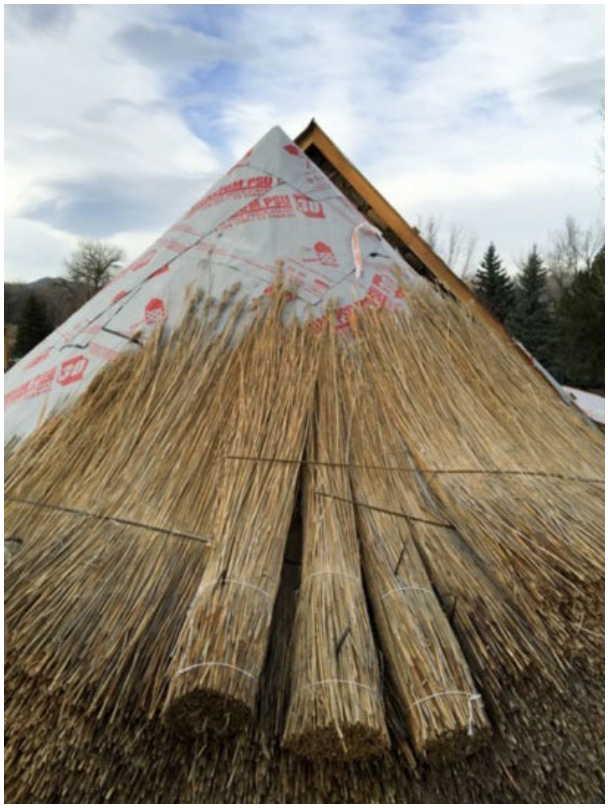
The thatchers, Master & apprentice who traveled from Scotland, enjoyed mild Colorado weather throughout December while installing the thatch in the middle of this very busy and very muddy jobsite. Many subcontractors were present on a daily basis and Boulder Roofing coordinated the installation with the masons and carpenters.

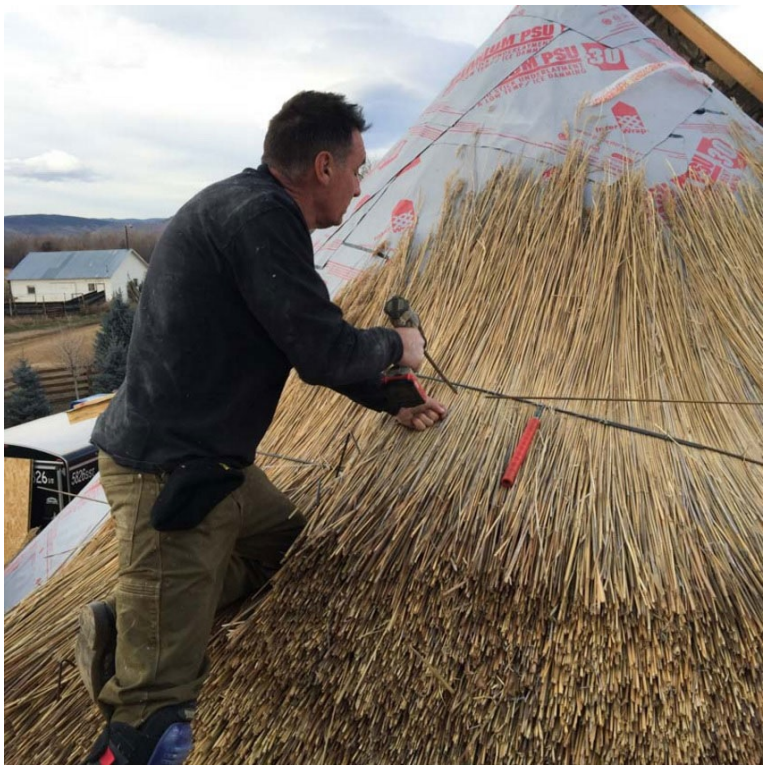
6’ long bundles of thatch were placed on the roof and secured by tightly twisting stainless steel wires around the 1/4” steel rods to hold the thatch in place. The reeds were then driven upward into the rods with a hand tool called a leggett, and further tightened resulting in a very condensed application.

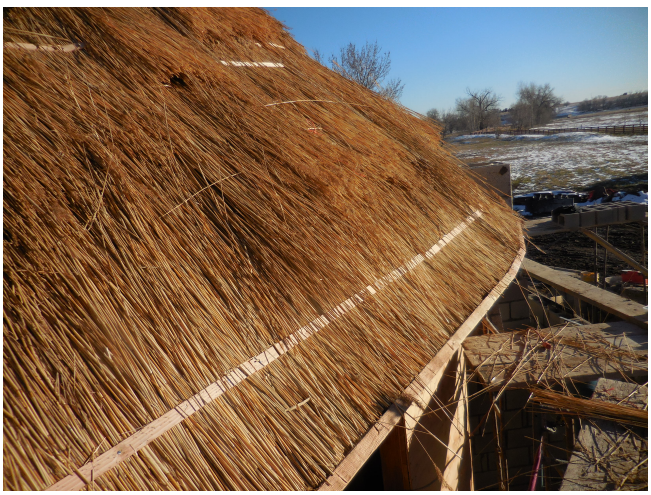
Snow was brushed off only once, as the 5” cut decorative ridge was installed and secured with wire netting for the finishing touch. This beautiful roof should last the homeowner anywhere from 50-70 years in our dry climate with only minimal maintenance required every couple of decades.

The best part about this job was that it was such a learning experience for everyone on site. Although thatch has been used for literally hundreds of years, it was certainly a ‘new’ roofing system to everyone involved in the project, and even perhaps a once in a lifetime job for Boulder Roofing. As such, it was incredibly interesting and satisfying to become familiar with the different tools and techniques of this beautiful trade.

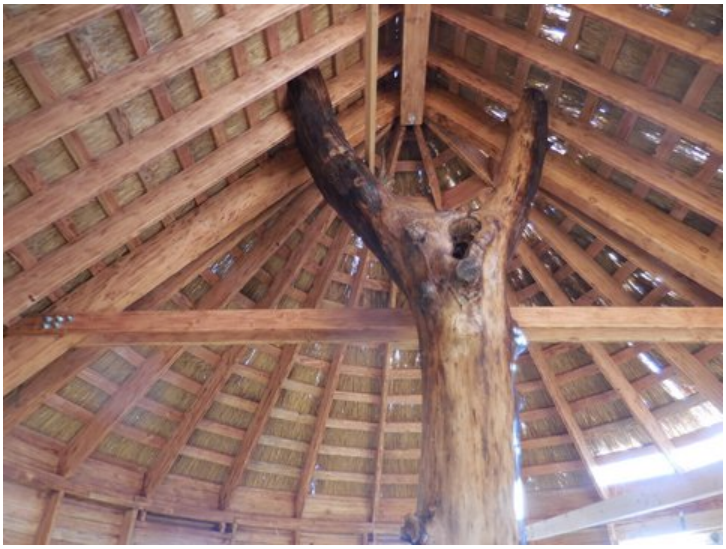




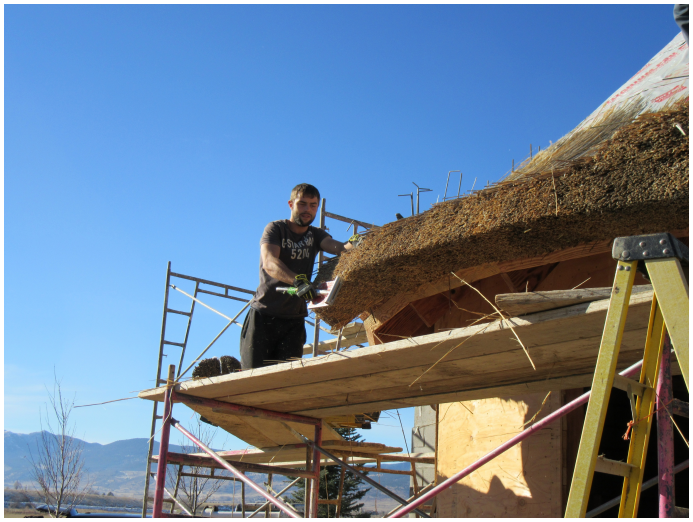




Bundles of reed through installation process over both purlins and solid decking. Hooks & sways (steel rods) are being used by Thatcher McGhee.



Interior view during installation of first layer of thatch.



Using a leggett to ‘dress’ each course upon completion.