

A Plan to Preserve and Restore The St. Vrain Mill in Mora, NM



2015



April 2024

WORKING DOCUMENT

Preface: The St. Vrain Mill Restoration Plan is intended to provide an overview to the work that has to be done to preserve and restore the Mill. The first part of this plan describes what already has been done as of April 2024. The second describes the work that remains to be done.

This plan covers the work needed in order for the St Vrain Mill to obtain an occupancy permit for public access to the first floor. Access to the second and third floors will be a follow-on effort.

About the Mill: “The St. Vrain Mill in Mora, New Mexico was built in 1864 by Ceran St. Vrain. The Mill is 50 feet by 40 feet. It is three stories high with the first two stories made of stone and the third story being wood siding. The stone for the mill is thought to have come from Watrous, New Mexico, a town about 30 miles east and 10 miles southeast of Fort Union. The mill stones were what was called French buhrstones and St. Vrain had purchased them in Wespoint, Kansas in 1850. Power was provided by water brought by a wooden trestle from the Mora River. The original wheel was likely wooden and built locally. The present wheel is metal.” Adapted from “A Brief History of the St. Vrain Mill” by Ray Marchi, available at: http://www.moravalley.com/st_vrain_mill.html

The building itself is all that remains of the working mill as most of the significant equipment was removed decades ago. After restoration, the most practical end use appears to be a Mora Heritage Center which could take the form of cultural displays and an arts and crafts outlet featuring local artists and craft persons on the first floor, possibly an arts teaching space on the second floor, and a Mill artifacts museum on the third floor.

Acquisition: In 2013, the St Vrain Mill Preservation and Historical Foundation was formed with the specific purpose of buying and restoring the Mill. The Foundation is a non-profit Corporation registered in New Mexico with Federal 501 (c) (3) status. After a successful fund-raising campaign throughout 2014, the Foundation received title to the Mill on June 3, 2015.

Restoration Objectives: The objective is to create a useful building, not to recreate a historically accurate reproduction of the Mill at the time of its construction in 1864. Having said that, every attempt will be made to retain the building’s character and appearance as much as possible. There is no significant milling equipment left in the Mill, so a working Mill Museum is not an option.

Part 1: Completed Work

Architectural and Engineering/Structural Assessments

In May 2015, the Foundation received a grant from the New Mexico Historic Preservation Division for a Historic Structures Report (HSR). The HSR documents the historic aspects and architectural characteristics of the St Vrain Mill. In addition, the architect's report provided an assessment of the feasibility of various potential end uses.

The Foundation contracted with Beverley Spears, Spears Horn Architects in Santa Fe, NM, to do the HSR. The work was completed in September 2015. The HSR is on the Foundations website, www.stvrainmill.org under "Reports and Studies."

In June 2015, the Foundation contracted with Engineering Analytics, Inc. of Raton, NM, to conduct a structural evaluation of the north foundation and wall. Funding for this project was from a \$10,000 grant from the New Mexico Economic Development Department and a \$5,000 grant from the National Trust for Historic Preservation

The focus was on the load bearing capability of the soil under the north wall. A bore hole was drilled about 12" from the northeast corner. Soil samples showed that the soil was primarily sand and water with no significant load bearing structure within a 20' depth.

Engineering Analytics evaluated several alternatives including use of micro-piles, helical piers, tensioning cables, and concluded the most practical and cost-effective solution was the use of permeation and compaction grouting. They also recommended the stabilization occur within two years since very little if any of the restoration phase could be completed without stabilizing the building. The complete report is available on the Foundations website, www.stvrainmill.org under "Reports and Studies."

Foundation Stabilization

Completion Date: Completed, January 2018

Cost: \$95,000

In August 2017, the Foundation signed a contract with Hayward Baker, Inc to do the work as specified by Engineering Analytics.. To minimize costs, we agreed that the work could be done any time before March 31, 2018, at HBI's discretion. Engineering Analytics remained under contract to oversee the work and conduct testing.

Engineering Analytics Final Report is available on our website. Note: Follow this link to the Keller Group (formerly Hayward Baker) information sheet on the St Vrain Mill project: <https://www.keller-na.com/projects/st-vrain-mill>.

Gable Repair

Completion Date: September 2019

Cost: \$43,000

The north gables required a complete rebuild of both the frame and the some of the siding while the south gable needed only replacement siding. The Foundation contracted with Spears, Horne Architects to prepare the required architectural and construction drawings. After HPD approval (June 2019) of the architectural drawings, a contract was signed with Knutson Construction for the gable repairs. Approximately one half of the total project was funded by HPD.

Tailrace Wall and Safety Barrier

Completion Date: Spring 2020

Cost: \$3,500

The water-filled tailrace at the rear of the Mill presented a potential safety risk for anyone using the walkway between the tailrace and building. A retaining wall was built with stones matching those of the Mill walls as closely as possible, and a safety fence was added atop the wall.

Window Repair/Replacement

Completion Date: Summer 2020

Cost: \$12,500

There are a total of 11 large windows on the first and second stories. All required replacement of glass and new sashes, but four will require a complete rebuild of the frame and lintel. (This work will be part of the pending wall repair.) The intention was to recreate the appearance of the original windows. All of the recreated sashes were done by Adam Weber, a local woodworker/carpenter. Funds for the sash replacement were raised through the Foundation's a "Adopt a Window" campaign. Those who donated are recognized with name plaques on "their" sash.

Stair Tread Replacement

Completion Date: Spring 2021

Cost: \$3,000

Twelve of the 13 treads of the 1st to 2nd floor stairs were so badly worn and uneven that they were deemed unsafe and needed to be replaced. The replacement treads were carved from old barn floor lumber; their appearance is virtually indistinguishable from the original. The work was also done by Adam Weber. Cost was covered by individual donors and their contributions are recognized by plaques on each new tread.

Loading Platform

Completion Date: Summer 2021

Cost: \$1,500

The loading platform was not an essential repair, but it is a highly visible part of the building, and its reconstruction was an indication of the progress being made in the Mill's restoration. Directed donations covered the cost of the platform rebuild. The rebuilt platform is an exact replica of the original, based on photographs and remnants of the original platform.

Lighting

Completion Date: Summer 2021

Cost: \$7,300

With help of Extreme Power Electric (Michael Martinez), who donated much of the labor, and a grant from USDA Rural Development for material, lighting was installed on both the first and second floors. The first-floor lighting is complete with track lighting in place for illuminating future displays and exhibits, as well as all required emergency exit signs and illumination. The second floor has only general illumination at this time.

Rear/Emergency Exit

Completion Date: Fall 2021

Cost: \$10,600

Public safety regulations require a second or emergency exit for all public buildings. Consequently, a small access door at the rear (north) end of the Mill was enlarged, a replacement door installed, and access steps from the main floor to the exit were built. The Foundation has received a grant from the National Society of the Daughters of the American Revolution (NSDAR) for approximately half of the \$10,600 cost.

Graffiti Removal

Completion Date: Fall 2023

Cost: \$1,800

About 20 years ago, the south and east walls were painted to cover the graffiti that disfigured the Mill. After considerable research and trial and error, the Foundation found a safe and effective chemical paint remover, thus negating the use of more expensive and damaging "sand blasting". However, the paint stripping was a labor-intensive effort. The Foundation was fortunate in that the Highlands University Athletic Department community service volunteers provided nearly 100 "person hours" and did most of the required scragging and stripping.

Part 2: Pending Restoration Projects

Wall Repair

Time Frame – late 2024 mid 2025

Cost \$200,000 - \$250,000

Repairing the east and west walls will be the most extensive and expensive part of the Mills restoration. To repair the large cracks of both walls will require removal of the adjacent stone blocks and resetting those blocks. This will also accomplish the re-aligning of two windows on the second floor and the replacing of at least two lintels on the west wall. Stone blocks have fallen from about half of the top course on the west wall and will need to be replaced.

Since the north wall is nearly 13 inches out of true, in 2021 the Foundation hired a structural engineer to assess the stability of the north wall. His conclusion was that the wall is stable, but there is a danger of collapse in event of an earthquake. While earthquakes are not common in Mora, they do happen on occasion. Part of the wall repair work will include anchoring the north wall to the second and third story floor frames to provide additional lateral support.

Handicap Access Front (South) Entrance

Time Frame: NLT than spring 2025

Cost: \$1,500

Create American with Disabilities Act (ADA) compliant parking and access ramp at the south (front) end of the building.

Floors

Time Frame: 2025

Cost: \$12,000 - \$14,000, material only

Some minor repairs will be required for the first floor in order to qualify for an occupancy permit. However, the second floor will need to be replaced entirely. Depending on use, the third floor may only need partial replacement.

Roof Repair

Time Frame -Indefinite

Cost: \$ 35,000 estimated

The roof structure, especially the rafters, appears to be in good condition, but the metal panels have numerous small holes. The Foundation has already replaced missing metal panels.

So the roof overall is basically sound. The entire metal surface will need to be replaced before the third floor of the building can be used, but the first and second floors should be usable without roof repairs. The intent would be to use Cortan panels that will oxidize to a rusted appearance in a few years. Note that the original Mill had wooden shingles, but it appears that around 1913, the wooden shingles were replaced with metal panels.

Restrooms

Time Frame: Indefinite

Cost: \$10,000 - \$15,000???

The Historic Structures Report, conducted by Spears, Horn Architects, addressed the issue of restroom facilities. They believe, if the end uses requires public facilities, that a separate structure be constructed outside, similar in design to restroom facilities at NM State Parks. The NM Construction Industries Department will dictate the type of restrooms needed.

Adaptive Reuse Considerations

There are several potential end-uses for the Mill. The actual use and layout will depend on the sentiment at the time the restoration phase is complete, three or more years into the future. There is no significant milling equipment left in the Mill, so a working Mill Museum is not an option. Note that the opening of the Mill to the public can be done one floor at a time. At this time, the Foundation has a specific concept for the first floor only.

For planning purposes, the current concept is Mora “heritage center” focusing on Mora’s “generational families” on the first floor along with an arts and crafts outlet featuring local artisans and producers. Providing heat/climate control could be the major expense if year-round operations are planned.

The second floor with its natural lighting and open space could be used as gallery space or teaching area for both performing arts and as well as painting and other arts related skills. Again, lighting and heating would be required. If it were not generally open to the public, handicap access should not be required.

The third floor could be devoted to Mora’s agricultural history and its relationship with Fort Union in the 1860s and 1870s. Two pieces of milling equipment remain in place and are restorable. Both lighting and heating requirements would be minimal. Handicap access would be a problem. However, given the historic nature of the building, alternatives may be acceptable. For instance, a complete video recording of the third-floor displays could be shown in a viewing booth on the first floor. Similar approaches have been accepted in other locations. However, if the above proves too difficult, the third floor could simply be used for storage.

Outside, the Foundation envisions benches, picnic tables and a shade structure/gazebo to add an outdoor aspect to any Mill visitation.

Parking could become a significant limiting factor for larger events. If adjacent land for parking cannot be found, any parking for St Vrain Mill visitors would be several hundred feet away.