



Project Completion Report – Zion National Park

Fiscal Year 2008

Preservation Treatment & Craft Assistance for Grotto Museum & Pine Creek Residence #3

Zion National Park

Start Date: August 2008

Completion Date:

Funding Source:

Cost: \$150,000.00

Partners: WCHP, ZION, & GRTE

GRPA Goals:

Project Leader: Bob Williams

Background Narrative:

Built in 1924 and used as the first Park museum, the Grotto is an excellent example of "NPS Rustic" style architecture, which dominated park construction throughout the 1920's and 1930's. The intent of this style was to design buildings that would not intrude upon the natural scenic beauty and would blend with the specific terrain by using building materials and massing similar to the surrounding landscape. Historic architecture of Zion took its cues from the spectacular geology of the canyon and the local Mormon vernacular building tradition. As a consequence, stone is the predominant building material. Salient characteristics of the NPS Rustic style exemplified in the Grotto include carefully detailed masonry, a shingle roof, use of generally over-scaled elements such as the massive rock walls which seemingly grow out of the earth, and beams, rafters and eaves which extend beyond and break the edges of the roof and wall. Given the antiquity of this structure in the Park and the manner in which it typifies historic NPS national policies of architecture and design, preservation of this treasured resource is a high priority at Zion. The Grotto was converted into living quarters for the park in 1936. Since the conversion, the structure has been used for living quarters and is now commonly referred to as the Grotto residence.

In August of 2008, Craig Struble and Bob Williams of the Western Center for Historic Preservation (WCHP) met on site at the request of the Zion cultural resources staff. Discussions included plans to rehabilitate the structure for use as an "artist in residence" or "Volunteer in the Park" seasonal type of use. In 2008, the park hired MJSA Architecture of Salt Lake City, UT to complete a condition assessment which was used to frame discussions for the structure's future rehabilitation and preservation. Subsequent to this meeting; A & E Architects were retained to guide preservation treatments and provide design layout and construction plans for the project. Based on these discussions, Zion requested WCHP's assistance with the completion of the preservation treatment.

This project was a cooperative effort between Grand Teton National Park (GRTE), Western Center for Historic Preservation (WCHP), and Zion National Park (ZION).

Problem Statement:

The Grotto Residence had been vacant for a number of years. In order to be used as for the Zion Artist in Residence program, various elements of the structure required updating.

Overview of Project:

Project work consisted of providing craft assistance, preservation treatment, and training to park staff in appropriate craft techniques and methods. Assistance was provided as part of a cooperative agreement between WCHP and ZION. WCHP preservation specialists were responsible for overall project coordination, material selection, treatment recommendations, and subject matter expertise. ZION staff members assisted with the project while receiving preservation training.

Summary of Work:

As outlined in the project agreement, the preservation treatment completed on the Grotto at Zion National Park was separated into four components. Phase 1 consisted of transporting the window sashes & doors to the WCHP workshop in Moose, WY for repair and the development of a project proposal. These windows and doors were then repaired or fabricated at the WCHP workshop as Phase 2 of the project. Phase 3 of the project consisted of Grotto Residence preservation treatments and was completed on-site by the WCHP preservation staff. The final phase, Phase 4, involving the installation of utility systems and the completion of interior/exterior finish work was completed jointly by the Zion maintenance staff and WCHP. The completion report was compiled and submitted in September of 2009.

Phase 1

Work commenced on Phase 1 of the preservation treatment in October of 2008 with the labeling and removal of 19 window sashes, 2 window screens, and 3 screen doors from the Grotto residence structure. One window sash was missing and would be completely replaced in-kind. These pieces were transported to the WCHP workshop in Moose, WY by the WCHP staff. The sashes, screens and doors would all be repaired by WCHP staff in Phase 2 of the project which commenced in December of 2008.

Beginning in November of 2008, the Zion maintenance staff worked to complete the remainder of Phase 1. Zion staff began with the removal of the existing floor, floor joists, all interior walls and wall board ceiling for replacement with new in-kind materials. Lead abatement procedures were also completed by the Zion staff for paint that existed on the walls. Beginning in January 2009, the Zion staff adjusted existing or installed mid-span floor framing piers. Following the leveling of the piers, the Zion staff completed installation of the moisture barrier and floor joists before the arrival of the WCHP crew in March 2009. Additionally, in order to prepare for the arrival of WCHP staff in March 2009 to begin Phase 3, Zion park staff began the procurement of the materials necessary for other in-kind replacements.

Phase 2

All Phase 2 work was completed by trained WCHP preservation staff at the workshop in Moose, WY. Work commenced with the construction of 16 new sashes for the Pine Creek Residence #33. Three 24"x36" / 4-light window sashes were constructed for the kitchen and 1st floor bath. Eight 24"x48" / 6-light window sashes were constructed for the dining nook, living room, and first floor bedroom. Two 24"x48" / 8-light windows were constructed for the second floor south bedroom.

The windows that were removed from the Grotto structure were stripped of their lead paint and repairs to their structure were made where necessary. New glazing compound was applied as well.

The existing cabinetry in the Grotto kitchen was beyond repair and needed replacement. The craftsmen at the WCHP drew up plans for new cabinetry that reproduced the existing cabinetry in appearance yet allowed for the installation of modern appliances. The cabinet faces and doors were fabricated at the

WCHP workshop and completed in February 2009. Phase 2 of the preservation treatment was completed in February of 2009.

Phase 3

This phase of the project was a joint effort by the WCHP staff, Zion maintenance personnel and the Point Reyes Preservation crew. While ZION maintenance personnel concentrated on the installation of plumbing, electrical and HVAC systems, WCHP installed some new ceiling joists, king and queen posts, insulation and furring strips in preparation for drywall. WCHP also concentrated on dismantling cutting and reassembling the cabinet face frames and doors due to a change in measurements of the kitchen. The Point Reyes crew worked mainly on the removal of window jambs and the installation of tube steel in openings H1, H2, H3, and H4. When completed they installed epoxy bolts on the top plate wall in ten places to tie the rafters to the masonry wall as depicted in the prints. WCHP then made all necessary repairs to the removed window jambs. WCHP also repaired the plaster where needed at this time, mainly in the kitchen and bath area. The Point Reyes crew then left the site after one pay period. Zion maintenance welded all points of the tube steel as noted in the prints. Due to space restrictions the access panels for the ceiling and crawl spaces were moved into the front bedroom closet. As time permitted WCHP installed 14 casement sash at building 3. WCHP installed blocking where needed in floor joists while putting down the sub-floor. 2x6 plumbing walls and 2x4 interior walls were installed and drywall was installed on the ceiling and walls. WCHP then replaced all the purlins on the gable walls, and installed window jambs, casement windows and hardware. WCHP custom built the cabinet cases at ZION and mounted them to the face-frames. WCHP agreed to fabricate a wooden privacy fence around the HVAC air handler and poured 12 sona tube footings to support the structure which included a gate. WCHP installed a doug fir tongue and groove floor throughout the structure except the bath, utility room and kitchen. Custom thresholds were made for the front and rear doors. Cabinet doors and hardware was installed and the cabinets were hung. A slate countertop was installed by an outside contractor. WCHP fabricated and shipped a false cabinet front to cover the utility room water heater. This was installed by ZION maintenance.

Phase 4

WCHP concentrated their efforts on finishing the exterior and interior mortar work, installing screens, finishing some detail work in the kitchen and fabricating a gate for the HVAC privacy fence. WCHP then began clean up of the area for mobilization back to GRTE. The Zion maintenance crew finished HVAC hook ups and electrical connections. Zion then completed tape and texture, and finishing of windows, doors, walls, floors and cabinets.

Additional Work:

- Insulating the ceiling
- Cut for floor outlets
- Attic catwalk
- Roof vents
- Shop for kitchen countertop
- Change orientation of bathroom window
- Adjust kitchen cabinet faceframe sizes

76 hours regular time WG-9 &WG-10

25 overtime hours WG-9

15 hours comp time WG-10

Financial Summary:

Purchases:	25,765.51
Overhead:	6,835.28
Travel Costs:	18,121.22
Wages with Overtime:	<u>81,155.01</u>
Point Reyes:	16,623.30
Total:	131,877.02

Conclusion for Future Preservation:

WCHP recommends a preventative maintenance schedule to include painting, cleaning of exterior stone work and mortar and mortar repair as needed.

Photographs:



Window in the WCHP shop, prior to restoration.



Window repairs, WCHP shop, Moose, WY



Window in the WCHP shop after repairs and priming

Photographs, Continued.



Existing interior conditions, north wall



Drywall in progress, living room

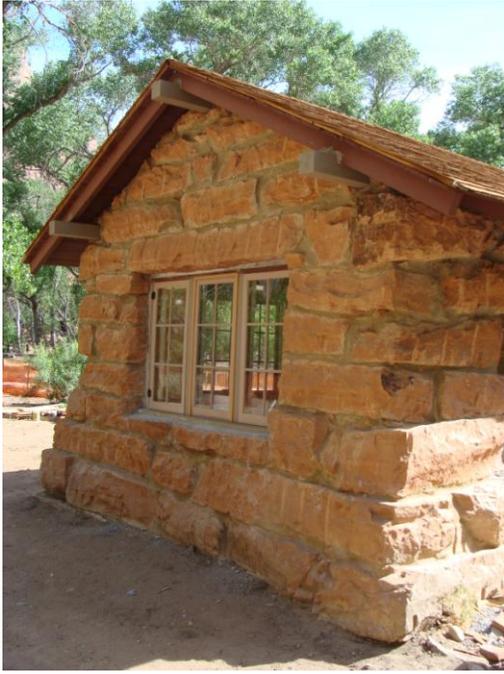


Completed kitchen cabinets



Attic ventilation being installed





Completed Grotto



Completed Grotto



Pine Creek Residence #3 with replacement windows, East Front



Pine Creek Residence #3 with replacement windows, Southwest Corner