



HISTORIC STRUCTURE REPORT

UTAH PARKS COMPANY SERVICE STATION BRYCE CANYON NATIONAL PARK

A Service Learning Project of the
Preservation Studies Program
College of Architecture and Landscape Architecture
The University of Arizona

In conjunction with:
Colorado Plateau/Cooperative Ecosystem Studies Unit (CP/CESU)

November 2005

Recommended by: _____
Chief, Cultural Resources, Southwest Regional Office Date

Recommended by: _____
Chief, Resource Management, Bryce Canyon National Park Date

Recommended by: _____
Superintendent, Bryce Canyon National Park Date

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PROJECT TEAM

This Historic Structure Report was carried out between the National Park Service (NPS) and the University of Arizona (UA) through the Colorado Plateau/Cooperative Ecosystem Study Unit (CP/CESU) and Joint Ventures Agreement. The Report was compiled as part of the requirements in ARC/LAR 4/597j: *Documentation and Interpretation of the Historic Built Environment*, a Preservation Studies service-learning class in the College of Architecture and Landscape Architecture at the University of Arizona and completed under the supervision of the principal investigator.

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MANAGEMENT SUMMARY

EXECUTIVE SUMMARY

The Utah Parks Company Service Station was built in 1947 as a concessioner-operated park amenity reflecting the increased automobile traffic to Bryce Canyon National Park after World War II. Two sister auto service stations of nearly identical design were also built in 1947 by the same architectural firm for Utah Parks Company at Zion National Park and Grand Canyon National Park (North Rim).

The building exemplifies the emerging architectural characteristics of the Modern Movement in national parks as a reflection of the dominance of modern architecture in American culture. Its character defining features (and representing those of many modern buildings) include the reliance on horizontal and vertical planes to define exterior and interior forms, which are represented in this building by the arcing stone wall and the flat roof planes extending from that wall to cover the interior spaces and to form the canopy over the gas pump island. The other outside walls are predominantly glass providing a transparency between indoor and outdoor spaces.

There are two fundamental issues facing the Utah Parks Company Service Station:

1. The deterioration of building elements due to improper water drainage from the roof and off the site; and
2. An appropriate future use for the building that preserves the thematic and architectural characteristics of the existing building.

Based on the condition assessment, this building is in very good condition. The most profound deficiency also is one of its principal character-defining features, the planar roof form. The combination of the flat roof and the abundance of snow and rain at the park has caused serious deterioration to the roof and other parts of the building affected by the drainage of the water from the roof. To accommodate the proposed new use, this report recommends the ultimate treatment of rehabilitation that includes three primary components:

Preservation and repair of the building's character defining features, especially the planar roof forms and related areas affected by water drainage from the roof;

Restoration of the building's character defining features and materials that have been damaged due to deterioration or lack of maintenance, especially the stone wall, exterior and interior wood paneling, and windows/doors.

Rehabilitation of the building's interior and exterior spaces and facilities to comply with current building, life safety and accessibility codes and to accommodate the programmatic needs of the proposed new use.

This report also recommends the Service Station be rehabilitated for seasonal use as a Bicycle Service Station, a facility to support cyclists visiting the park. It is recommended that the implementation of this new use be executed in two phases:

Phase I – Bicycle Comfort Station

This passive use of the building would include the installation of an exhibit on the history of transportation in national parks and vending machines catering to cyclists requiring no staff. This phase could be implemented once the critical-priority preservation treatments have been completed.

Phase II –Bicycle Service Station

This active use of the building may require a concession contract to operate a full-service bicycle rental and repair facility requiring at least one, and optimally two, staff. This phase could be implemented once the serious-priority preservation treatments have been completed and sufficient interest in bicycle services has been identified to justify concessioner investment.

ADMINISTRATIVE DATA

Locational Data

Building Name: Utah Parks Service Station
Building Number: HS-117
Building Address: Bryce Canyon National Park
Highway 63, Bryce #1
P.O. Box 640201
Bryce, Utah 84764
LCS# HS-117
UTM Location: Zone 12, 397080m Easting, 4165115m Northing;
Section 36, T36S, R4W.

Proposed Treatment

Preservation and repair of the building's character defining features, especially the planar roof forms and related areas affected by water drainage from the roof;

Restoration of the building's character defining features and materials that have been damaged due to deterioration or lack of maintenance, especially the stone wall, exterior and interior wood paneling, and windows/doors.

Rehabilitation of the building's interior and exterior spaces and facilities to comply with current building, life safety and accessibility codes and to accommodate the programmatic needs of the proposed new use.

Related Studies

Historical Research Associates. *Utah Parks Company Service Station National Register Nomination*, 1994.

Cultural Resource Data

National Register of Historic Places, designated 1995.

Period of Significance

The period of significance is 1947, as defined by the National Register nomination, representing its original construction date and its association with the development of post-World War II recreational and administrative data infrastructure within Bryce Canyon National Park and as an example of roadside architecture reflecting the design characteristics of the Modern Movement.

*PART ONE:
DEVELOPMENTAL
HISTORY*

INTRODUCTION

The purpose of the Utah Parks Company Service Station Historic Structure Report is to evaluate the existing conditions of the building and make recommendations to guide the future maintenance, preservation, and rehabilitation efforts necessary to utilize the building for future use. The Historic Structure Report establishes a baseline of information, both archival and field documentation, from which future actions can be taken.

The scope of the Historic Structure Report (HSR) was restricted to evaluating the architectural integrity of the building, i.e. the specific historic features that characterize the building's significance as documented by the National Register of Historic Places nomination form. The scope of this report does not include professional evaluation of these systems; however, the current condition of each system is presented here, along with treatment recommendations as they pertain to preserving the building's historic and architectural integrity. Where appropriate, this report does make recommendations for further professional evaluation when the expertise required to assess life safety code compliance is beyond that of the project team.

This report provides condition assessment, recommended preservation treatments and action priority for holistic building systems, as well as individual features of the building's exterior and interior.

HISTORICAL BACKGROUND AND CONTEXT

Bryce Canyon National Park is located in southwestern Utah approximately 30 miles east of Panguitch on Highway 12 and 63. Named after Mormon pioneer Ebenezer Bryce, it was declared a national monument in 1923 and officially designated as a National Park in 1928. The park consists of 35,833 acres and is part of the Pansaugaunt plateau in Garfield and Kane Counties, Utah. Bryce Canyon National Park is best known for its geologic features, especially the hoodoos. In addition, the park contains evidence of human occupation ranging from prehistoric and historic Native American to historic Euro-American explorers.

Recreation and Transportation within Bryce Canyon

The park was brought to the attention of the citizens of Utah, the United States and eventually the world, when then Park Director, Stephen Mather, fulfilled his dream of creating a tourism circle, which came to be known as the Grand Circle. This was accomplished with the help of the Utah Parks Company (UPC), which was a subsidiary company created by the Union Pacific Railroad when they discovered the potential attraction of the Southern Utah/Arizona area. This train/bus tour gave tourists an economical way to see the North Rim Grand Canyon, Zion National Park, Cedar Breaks National Monument and Bryce Canyon National Park. A visitor would arrive at any of these national parks by train and be toured around the “grand circle” of other national parks in large touring buses. As part of this creative new form of vacationing, a lodge and other accommodations were built within each of the parks’ boundaries, and operated by concessioners to the National Park Service, such as the Utah Parks Company (UPC).



Figure 1 – Map showing the major national parks of the Grand Circle, including Bryce Canyon, Zion, Grand Canyon, Capitol Reef, Arches and Canyonlands.

During World War II, Bryce Canyon National Park was closed and reopened in 1946 to a public who increasingly took vacations in private cars and the Grand Circle train/bus tour business declined. To meet the infrastructural demands of visitors arriving by automobiles, the Utah Parks Company built a service station within Bryce Canyon in 1947 with nearly identical service station designs built concurrently at Zion and Grand Canyon National Parks. The Utah Parks Company Service Station was the last improvement undertaken by the UPC at Bryce Canyon, aimed at upgrading their facilities and extending the range of services to tourists within the Park. The

presence of a Service Station within Bryce Canyon mirrors the development in other western parks, wherein the range of services demanded by park visitors expanded to include not only gas stations but also full service facilities.

Modern Architecture in Bryce Canyon

In the late 1940's and 1950's, some National Park Service architects rejected the 'exaggerated' rustic style of the 1920's, 1930's, and early 1940's, in favor of buildings that reflected simpler, modern design principles. For this particular building, form defines function. The station is significant as an example of "roadside architecture" where the utilitarian purpose of providing service to the automobile is not relegated behind an artificially romantic façade, but celebrated with its own architectural expression in a new age of automobile-oriented environments. This stylistic typology is a distinctly American contribution to the built environment, indicative of a period of service station construction during which buildings were designed to accommodate a full range of services including mechanical repairs.

The 1947 design of the Utah Parks Company Service Station is an early contribution of modern design to national parks, which would not have its heyday until the Mission 66 program was initiated in 1955, when modern styles of architecture had reached the mainstream of American architectural design. A precursor to what would be called "Park Service Modern", the UPC Service Station employed free-flowing plans, flat roofs, large expanses of glass, and other established elements of modern design. The palette of building materials, concrete, steel and glass, were very popular in the National Park Service as they were often less expensive than the labor-intensive use of their rusticated counterpart materials. The design of the Utah Parks Company Service Station also incorporates the use of rustic materials with modern design elements. However, it is apparent that no attempt was made during the design process to match the construction style of other UPC or Park buildings. Although the building was designed by architects under contract to the concessioner, the NPS approved the design.

Within the varied expressions of the Modern Movement, this building falls into a typological category of "planar" due to horizontal planes that dominate the building's form. Planar buildings owe their origins to Mies Van Der Rohe's 1929 Barcelona Pavilion. The design's primary intent was to define space through the articulation and expression of the flat, rectangular roof and wall planes that composed the form. Aesthetic intention trumped any utilitarian goals. The building was a refinement of the Dutch DeStijl movement of the 1920s and had a huge impact on modern design. The asymmetrical, planar character was emphasized by minimizing the structural columns and using floor to ceiling glass to enclose the space.

In the United States, two houses for Edgar Kaufman set the standard for early American planar architecture: Fallingwater by Frank Lloyd Wright (1937) and the Desert House in Palm Springs by Richard Nuetra (1947). Both houses were asymmetrical compositions of horizontal planes and vertical stone piers. Planar floors and roofs were defined by the "cantilever" and the extent to which one could defy gravity; no building did this better than Fallingwater. Wright's reinforced concrete decks pushed the limits of contemporary construction techniques to cantilever 15 feet over the water. Low ceilings made the visitor acutely aware of the horizontal and planar character of the space. The rough stone and concrete of Fallingwater was unrelated to the steel, glass and polished marble of the Barcelona Pavilion, but both were seeking to define space through planes.

More related to Mies' work, Nuetra's Desert House was a continuation of the light and airy steel (wood) and glass aesthetic that came to be associated with southern California modern architecture in the 1950s. The metal-faced roof planes articulated the horizontal line and

sheltered light-filled, glass-enclosed spaces. The glass enclosure walls were retractable, blurring the line between interior and exterior and further articulating the roof plane.

Planar architecture slipped into a utilitarian aesthetic in the 1960s with the increased use of pre-cast concrete slabs (or “lift-slab” technologies) to build large-scale buildings. This style became prevalent in beach communities like Miami and Honolulu, where the goal was to create spectacular views while producing buildings quickly and cheaply. There was a shift in planar architecture in the late 1960s away from the lighter aesthetic of floating roof planes, and toward walls as the primary planar elements.

Eldridge T. Spencer, W. Clement Ambrose, Wesley A. Talley, Alton S. Lee Associated Architects

The collaboration of Eldridge T. Spencer, W. Clement Ambrose, Wesley A. Talley, and Alton S. Lee appears not to have manifested itself into a corporate partnership, but rather intermittent association to work on this series of automobile service stations for the National Park Service. The most prominent of this group is Eldridge T. Spencer, who opened his San Francisco California office in 1927 as the appointed architect for Yosemite National Park where he’s done a number of buildings through to the 1970s. The necessity for him to relate small-scale buildings to the spectacular natural setting quickly shaped the firm’s design philosophy for the future. Spencer did projects in other national parks, as well as a number of university projects, including Stanford University for whom he was campus architect and planning director.

Spencer’s architectural language spanned from the rustic neo-vernacular seen in his early National Park Service work to that of the modern movement seen more often in his firm’s commercial and institutional work. In 1946 and 1947 he and his firm designed a series of automobile service stations at three national parks, Zion, Grand Canyon North Rim, and Bryce Canyon, that blended his earlier ethic of integrating natural features (such as stone walls), characteristic of the “Park Service Rustic” style of his earlier work, with the clean geometries and unadorned building material palette of the modern architecture. The suite of automobile service stations was commissioned by the Utah Parks Company and all shared the same character defining features, but each slightly different floor plan layouts.¹

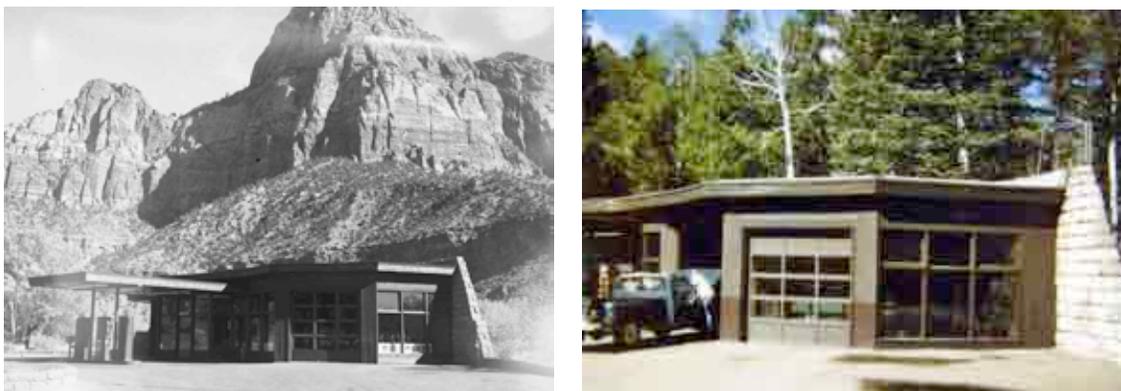


Figure 1.1 – Utah Parks Company Service Stations at Zion National Monument (left) and Grand Canyon North Rim (right), 1946-47 by Eldridge T. Spencer, W. Clement Ambrose, Wesley A. Talley, and Alton S. Lee, Associated Architects.

¹ For example, the Grand Canyon North Rim service station contains two bays for repair and two pump islands to accommodate greater visitor attendance, in contrast to Bryce Canyon’s one bay and one pump island.

CHRONOLOGY OF DEVELOPMENT AND USE²

The construction for a Utah Parks Company Service Station was started in July 1947 and gasoline storage tanks were installed during August and September of the same year. The Service Station was completed in 1948 and ready for business as a Utah Parks Company (UPC) concession. The UPC owned and operated the Service Station until the late 1960's at which time the Union Pacific Railroad Company donated all the buildings and structures operated by the UPC to the National Park Service for a federal tax write-off of two million dollars.³ There are few Park records that document specific modifications that may have been done to the building during its ownership under UPC. One undated National Park Service inspection checklist that identifies the building as a sub-concession of Utah Parks Company (i.e. pre-late 1960s) outlines a number of items requiring immediate attention:

- Retar flashing against back wall.
- Refasten fascia and repaint.
- Remove tar from back wall of Women's Restroom.
- Replace ceilings in both restrooms.
- Revarnish all wood paneling, doors, cabinets and ceiling.
- Lift in Repair Shop doesn't meet safety standards.
- Repaint floors.
- Remove grease from back wall.
- Install fire extinguisher.⁴

In 1973, TWA Services, a subsidiary of Trans World Airlines, was awarded the concession at Bryce Canyon, including the Service Station. This concession was transferred to the Canteen Corporation, which became another wholly-owned subsidiary of Trans World Airlines, in 1974. This contract was renewed in 1984 at which time the company is referred to in Park records as TWS.⁵

In 1984, three new gas tanks (one 10,000-gallon and two 5,000-gallon) were installed by Gower Construction Company to replace the four old gas tanks specified on the original construction drawings.⁶ The interior of the Service Station, along with the Lodge and Store buildings, was rewired to bring the electrical system up to code requirements.⁷

Gasoline and automotive service was discontinued at the Service Station at the end of the 1988 season. In 1989, the Sales Office space was used by the Park's interpretive trail rides concessioner. The Repair Shop space was proposed for housing the historic touring bus acquired by the Park in 1989. Unfortunately, the bus is too long to fit into the bay of the Repair Shop. It was also proposed to use the Utility Room for the storage of miscellaneous Cooperating

² The information in this section was gathered from available Bryce Canyon National Park records but reveals a number of inconsistencies in the development of a sequential chronology of maintenance, repair and alterations. This summary presents the most accurate chronology based on the existing records.

³ Scratfish, Nicholas, *Historic Resource Study Bryce Canyon National Park*, United States Department of the Interior, National Park Service, Rocky Mountain Regional Office, Branch of Historic Preservation Denver, Colorado, September 1985, p. 165.

⁴ Bryce Canyon National Park, *Inspection Check List* (undated, prior to UPC dissolution, Charles Smith, Superintendent)

⁵ Scratfish, pp. 165-66,

⁶ "New Gas Tank Installation, 11-84" annotated photographs.

⁷ National Park Service, *Assessment of Effect Form*, May 10, 1984.

Association sales items, Park brochures, and newspapers that were displaced from other collections storage areas at the Park.⁸

In 1990, the exterior windows of the Sales Office and Repair Shop were blocked with painted, removable plywood, cut to fit the panes and secured with silicone caulk. The purpose of this covering of the windows was to screen the view of the interior of the Repair Shop, which had become a cluttered and unsightly storage area for a variety of Park items. The originally unfinished doorway between the Repair Shop and the Utility Room had a preset frame, casing and locking door installed. In addition, a lock was installed on the door between the Sales Office and the Repair Shop. The original knob on the door was removed and replaced with a non-historic knob.⁹

In June of 1990, the underground gasoline storage tanks were removed and the cavities were filled with environmentally clean material and the ground surface repaved with asphalt.¹⁰ In 1993, the site was certified by the State of Utah as environmentally clean and no further compliance action would be required unless land use was changed.¹¹

In February 1991, an extensive scope of work was outlined that identifies the building's deficiencies that were compromising its historic significance. Generally, these deficiencies included:

- Roof: water penetration against the rear stone wall; moisture damage to awning over gas pump area.
- Rock Wall: general repointing; repair vertical crack.
- Pavement: rework blacktop to provide positive drainage away from building.
- Remove non-historic item on exterior of building including inactive electrical junction boxes, unused vent pipes, phone booth.
- Repair and replace wood siding and fascia.
- Replace shattered windows and use translucent or opaque panels to screen storage items in interior.
- Doors: Large garage door needs rework.
- Paint: Entire structure needs repainting.

Although the scope of work proposed the work to begin during the summer of 1991, most of this work was not begun until 1998.¹²

In January of the same year, Richard Cronenberger, NPS Regional Historical Architect, did an analysis of the paint colors of the Service Station to determine the appropriate colors for any restoration work. In that memo, it reiterates the original color scheme of varnished exterior window and door trim, a stain on all exterior wood surfaces and three coats of lead and oil paint on metal surfaces. Although the original building exterior was varnished, he recommends the use of paint to simulate the stain's original color and hue. Specifically, he recommends the Devoe & Reynolds Company Professional Color Key Selector CK2142 to identify the following colors:

- Exterior wood color should correspond to 2UM39A, Zodiak;

⁸ National Park Service *Assessment of Effect Form*, March 8, 1990.

⁹ National Park Service *Assessment of Effect Form*, March 8, 1990.

¹⁰ National Park Service *Completion Report*, June 25, 1990.

¹¹ UST Certificate of Exemption, Utah State Department of Environmental Quality, October 1, 1993 and letter from Kent Gray, Utah Department of Environmental Quality, to Mike Castagnetto, Bryce Canyon National Park, February 9, 1996.

¹² National Park Service, *Assessment of Effect Form*, February 25, 1991.

- Window and door trim color would correspond to 2YO36A, Emperor.

The memo also recommends that all paints and coatings on the original surfaces be removed before the new primer and paint are applied.¹³

Between 1998 and 2000, the Park completed a significant amount of work that had been outlined in the 1991 document referenced above. According to the Completion Report, these items included:

- The tar and gravel roof covering was removed and it was replaced with a polymer (elastomeric) material.
- A vertical crack in back stone masonry wall was repaired with mortar mix and a telephone booth was removed.
- The horizontal wood siding was repaired through filling, sanding, and painting. One missing section was replaced with material in kind.
- Glass-obscuring panels installed in 1990 were removed. Glass panes were replaced where necessary. Window frames were repaired. Portions of window frames were reconstructed and finished to appear original.
- The Restroom and Sales Office doors were repaired, repainted, and sealed. One doorframe was replaced with historically compatible materials.
- The large overhead Repair Shop doorframe was repaired and repainted. Door springs were repaired and adjusted
- All exterior wall surfaces were repaired and repainted in accordance with preservation guidelines. Paint Colors: Devoe Spicetone on main expanses of walls. Devoe Desert Dust on trim areas.
- The Restrooms received new electrical wiring and fixtures and plumbing infrastructure. The drywall was repaired and replaced and several coats of paint were stripped from the concrete floor. The original colored concrete floor was refinished and polished.
- In the Sales Office, interior walls and ceiling were sanded and refinished. Paint was stripped from floor exposing original raw concrete finish. New display counters were reconstructed (from duplicate counters at the sister Service Station at the Grand Canyon North Rim) to match originals.
- Two gas pumps (early 1950's vintage) were donated by the Chevron Oil Company and installed at the pump island.¹⁴

In 2001-2002, the electrical and plumbing systems were again upgraded by the Bryce Canyon facilities department.¹⁵

Currently, the Service Station continues to be used by the interpretive trail rides concessioner and other Park visitors, as a comfort station due to the good working order of the restrooms. The rest of the Service Station is relatively vacant in anticipation of an appropriate future use.

¹³ National Park Service memorandum from Richard Cronenberger, Regional Historical Architect, Rocky Mountain Region, to Chief of Maintenance, Bryce Canyon National Park, January 11, 1991.

¹⁴ National Park Service Completion Report, January 28, 2000

¹⁵ Conversation with Kelly Sheakspear, March 2005.

PHYSICAL DESCRIPTION

Introduction

This section contains a systematic inventory of all the building systems, features, materials and spaces according to significance, condition, and priority.¹⁶

To comprehensively describe and assess the physical features of the Utah Parks Company Service Station, this section of the Historic Structure Report is divided into three parts: building systems, building exteriors, and building interiors. Within each of these parts, the character defining features will be outlined, followed by a comprehensive illustrated description of the physical features and deficiencies, concluding with a table outlining feature deficiencies, treatment recommendations, and a priority rating. A summary of recommended treatments is presented in the *Ultimate Treatment* section of the report.

Summary

The Utah Parks Company Service Station is located adjacent to a paved park road, approximately midway between the Bryce Canyon Lodge area and the administrative/service area near Sunrise Point. The hill slope behind the building is rather densely timbered with native ponderosa pine. A large ponderosa pine is located within an “island” defined by a raised stone retaining wall, between the park road and the Service Station. This tree appears to have been left in place at the time of the building’s construction.

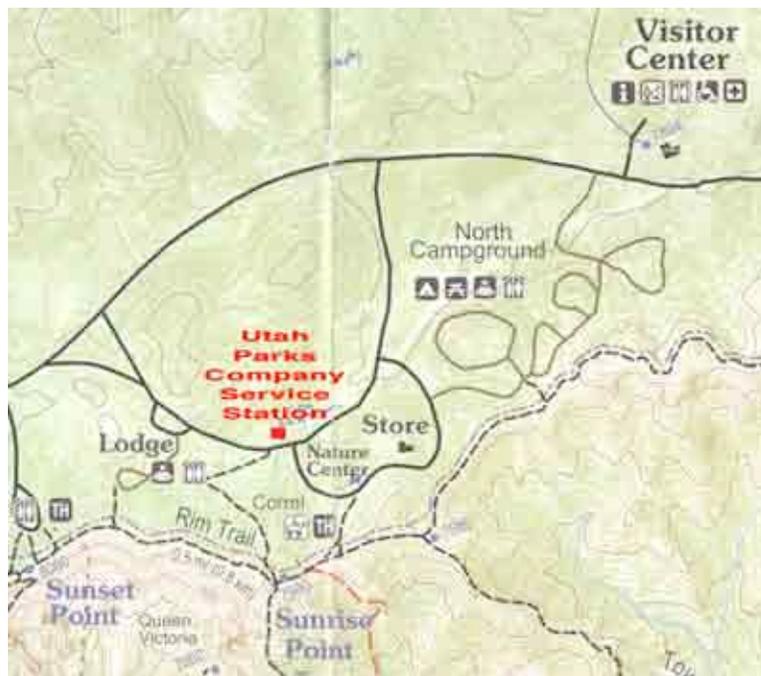


Figure 2 – Location map showing Utah Parks Company Service Station within Bryce Canyon National Park.

The Service Station is an irregularly shaped, one-story building that is dominated by two planes: a vertical curved plane that forms the rear (west) wall constructed of rough cut, regularly coursed stone; and a horizontal set of roof planes that project from the stone wall and covers the interior spaces and forms a canopy over the pump island. In addition to the stone wall on the west facade,

¹⁶ See Appendix A for detailed explanation of evaluation methods.

the roof planes are supported by wood-frame walls with glass infill (Sales Office and Repair Shop) and steel pipe columns (Pump Island) conveying an appearance of transparency and openness characteristic of Modern architecture.

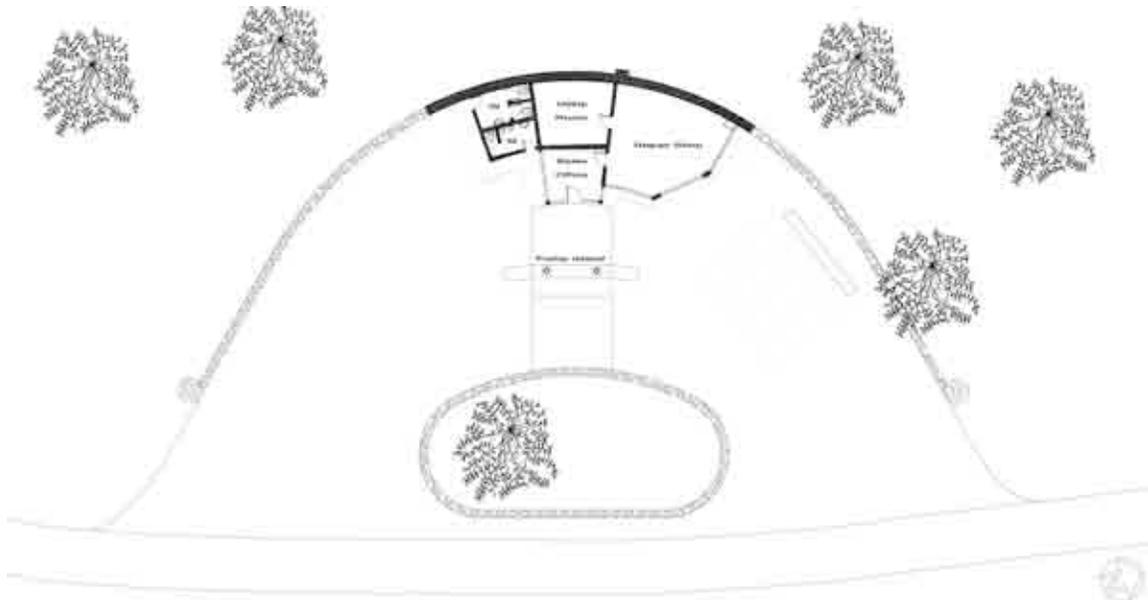


Figure 3 - Site plan

The interior of this building contains five rooms divided into three areas. The central portion of the building contains a Sales Office to the front and a Utility Room to the rear accessible from the Repair Shop. The Sales Office has 1”x6” pine bead-board paneling in a chevron pattern on the north wall and ceiling. The Utility Room has exposed 2”x 6” wood stud framing on three walls and an exposed stone wall on the west. The north portion of the building is the Repair Shop (often referred to as the “Lift Room” or “Mechanics Room”). The Repair Shop is accessible via a large overhead garage door, and from the Sales Office. The Repair Shop is defined by a curving stone wall on the west side, exposed wood frame ceiling, 1”x 6” pine bead-board paneling in a chevron pattern on the south wall, and a large expanse of glass (including the garage door) facing the parking area. In the south portion of the building adjacent to the Sales Office/Utility Room are two bathrooms (Men’s and Women’s) with separate entries. The interior walls of the Men’s and Women’s bathrooms are finished with 1”x 6” pine bead-board paneling laid vertically. The bathrooms have drywall ceilings, stained and varnished wood stall partitions, and the original plumbing fixtures.

The Service Station is constructed of 2”x 6” wood framing, 1”x 6” and 1”x 12” pine bead-board paneling, wood-framed glass windows, stone masonry, and concrete slab foundation. The roof of the main building is constructed of wooden joists with wood decking above, while the canopy over the Pump Island contains wood joists sitting on a steel plate supported by steel pipe columns. The roof fascia is tongue and groove wood siding with metal flashing.

Generally, the building is in good condition, showing few areas of serious concern. The primary threat to the building is poor drainage. Two cracks in the rear stone masonry wall present an additional threat and will need additional monitoring in order to evaluate potential impacts to the building. Additionally, pest infestation should be further assessed, especially termite and rodent.

Building Systems

Building systems refer to the integrated utility systems that are present throughout multiple spaces in and around the building. These include drainage, structural, plumbing, electrical, heating ventilation and cooling (HVAC), and others. The scope of this report does not include professional evaluation of these systems; however, the current condition of each system is presented here, along with treatment recommendations as they pertain to preserving the building's historic and architectural integrity. Where appropriate, this report does make recommendations for further professional evaluation when the expertise required to assess life safety code compliance is beyond that of the project team.

Drainage System

Significance: High
Condition: Poor
Priority: Critical

Character Defining Features: Planar roofline, stone wall.

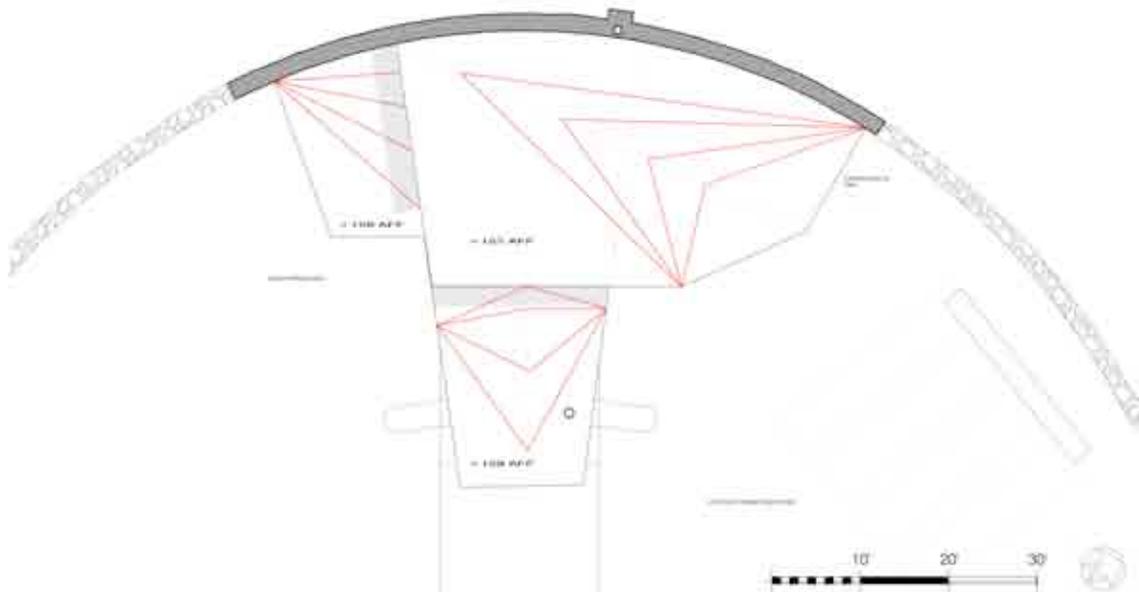


Figure 4 - Roof plan with existing drainage patterns.

The drainage system for the Utah Parks Company Service Station includes all systems employed to carry water away from the building and off the site. Currently, there is no drainage system in place, nor was there one designed as part of the original intent of the architect. Water leaks into the structure from the planar roof at the junction of the roofline and the rear stone wall, causing damage to the roof supports and to the stone wall. There are also exterior drainage problems at all corners of the roofline, where the water ponds and drips down the fascia and exterior walls of the building at unintentional places causing significant damage to building elements. Additionally, once the water reaches the ground, poor site drainage causes the water to flow back toward the building, causing damage to the concrete slab and exterior walls, in the form of undercutting at the corners of the Sales Office and other parts of the building perimeter.

Drainage is the most serious threat to the building, compromising both structural and architectural integrity, and should be addressed immediately, warranting a critical priority treatment. Current

damage caused by water leakage and roof run-off, especially efflorescence¹⁷ and erosion of the stone on the north and south ends of the stone wall, the water damage to the roof joists and ceilings (see *Structural* below), and the exterior corners of the roofline are major preservation issues for the Service Station and require immediate attention.



Figure 5 & Figure 6 - Water ponding on the roof causing damage to the stone wall and at the roof's edge adjacent to the fascia.

¹⁷ Efflorescence is defined as white, powdery crystals that form on the stone due to the migration of salts to the surface in areas of excess moisture.



Figure 7 & Figure 8 - Poor drainage at the southwest corner of the building showing water damage to the stone wall and the fascia.



Figure 9 - Water drainage occurring at the fascia of the Pump Canopy causing damage to the wood fascia members due to an unintentional drainage system.



Figure 10 - Undercutting at the SE corner of the Sales Office, caused by poor site drainage.



Figure 11 & Figure 12 - Efflorescence and erosion caused by poor drainage.



Figure 13 - Water leakage in the interior of the Utility Room between the stone wall and roof plane caused by poor water drainage and inappropriate flashing at connection between stone wall and built-up roofing membrane.

Deficiency	Treatment Recommendation	Priority
<p>Poor drainage system has resulted in water leakage and damage to interior and exterior building components.</p>	<p>Implement Proposed Drainage Plan (see <i>Ultimate Treatment</i>) including the modification of existing roof and adjustment of site grading to evacuate water more effectively from the roof, building, and site. Other specific recommendations consequential to drainage deficiencies are addressed in other sections.</p>	<p>Critical</p>

Structural System

Significance: Critical
Condition: Good/Fair
Priority: Serious

Character Defining Features: Stone wall, planar roof structure

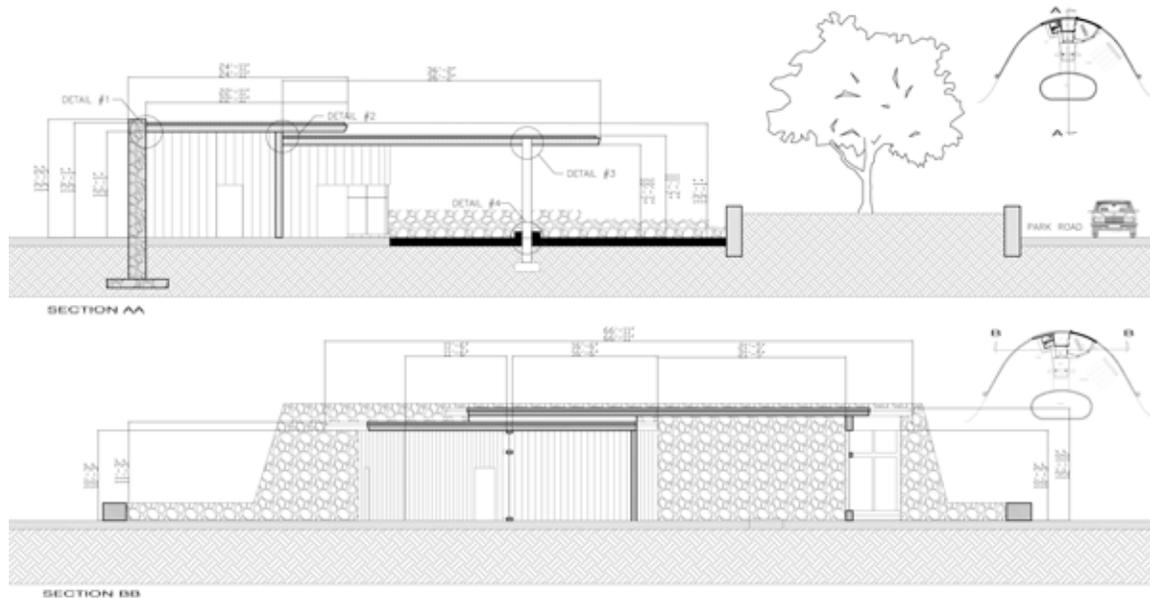


Figure 14 - Building sections showing structural system (revise to reflect stepped stone wall heights).

The structural system includes the foundation, exterior and interior load bearing walls, floor, and roof support structures. The foundation of the Utah Parks Company Service Station is concrete slab on grade extending out to the Pump Island. There is a concrete foundation footing under the stone wall but it is not exposed, nor is it specified on the original architectural drawings. The concrete slab is exposed and finished throughout the building as the finish flooring. All load bearing walls at the Service Station are constructed of wood frame, except the rear wall of the building, which is constructed of stone masonry. This stone wall was built using local limestone and concrete mortar. It was constructed in an arcing shape in plan and acts as the rear wall of the building to which all other load bearing walls are abutted. It extends beyond the northern and southern extents of the building, and the height of the wall also extends beyond the roofline. Wooden roof joists radiate from the east support walls to the west stone wall where they sit in pockets within this wall. The Pump Island canopy roof structure is constructed of wooden roof joists that sit on a perpendicular beam composed of a pair of 3"x10" wood joists resting on a steel plate. Two 6" pipe columns located at the Pump Island are welded to the steel plate above and sit on concrete footers that form part of the island that originally contained gasoline pumps. While the wood joists in the pump canopy is not visually accessible because of beaded board sheathing, the wooden roof joists in Repair Shop and Utility Room are exposed with no ceiling sheathing on the underside of the joists. The wood planking on the underside of the Pump Island canopy and on the ceiling of the Sales Office is attached to the roof joists using 1"x3" nailers as mediators. Both roofs have wood decking on which there is built-up roofing¹⁸. While, originally, the roof was capped with gravel, the current roof is capped in heavy felt.

¹⁸ Built-up roofing is defined as alternating layers of roofing felt and heated bitumen, surfaced with a cap sheet or a layer of gravel in a heavy coat embedded in bitumen.

Despite some minor cracking and isolated areas of fragmentary loss due to weathering and wear, the foundation footings and floor slab are in good condition. The concrete foundation was not accessible, but holds the potential for loss of structural integrity due to insufficient drainage from roof that is visibly affecting the stone wall and the wood paneling (see *Drainage* above). The wood frame walls are in good condition, but the abutted joint between the wood frame and the stone masonry needs attention in many places where the interior walls are beginning to separate from the rear stone wall (see *Building Interior* below). The stone masonry is generally in fair condition with areas of efflorescence and biological growth. There are two cracks in the stone wall. The most significant crack is located in the Women's Restroom and is clearly visible on the exterior façade in this area most likely caused by a small earthquake. The second crack begins at the flue in the Repair Shop and extends down at an angle into the Utility Room. This second crack, most likely caused by drilling to install new utility conduit in the Utility Room, is less severe and not visible on the exterior. The roof joists are in fair condition with water damage identified at the connection between the roof and the rear stone wall caused by poor drainage (see *Drainage* above). This water damage, however, has not compromised the structural integrity of the roof joists, but could in the future if the drainage deficiency is not resolved. In some areas, expanding foam has been inserted to prevent further water damage, but this is not an adequate solution. At the Pump Island canopy, a slight deflection was observed when that span was covered with snow.



Figure 15 & Figure 16 - Areas of concrete slab cracking and minor loss around the building exterior.



Figure 17 & Figure 18 - Large crack in rear stone wall, exterior (left) and interior (right, in Women's Restroom).



Figure 19 & Figure 20 - Areas of water damage to roof joists in Repair Shop (left) and Utility Room (right).

Deficiency	Treatment Recommendation	Priority
Two cracks in rear stone wall.	Repoint mortar joints with like material.	Critical
	Install crack monitors to assess long-term separation.	
Water may be affecting concrete foundation.	Inspect wall footings when the asphalt is removed for driveway resurfacing in parking area.	Critical
	Insert moisture barrier at wall footings during new site grading.	
Excessive snow load on roof, particularly Pump Canopy, causes	Prepare a structural analysis of the roof joists with particular attention to snow load	Critical

particularly Pump Canopy, causes visible deflection in roof joists.	joists with particular attention to snow load calculations per local code. If necessary, install heat coils on roof to allow for faster removal of load during heavy snow.	
Visible water damage on exposed roof joists and blocking at stone wall on interior.	Depending on severity of damage, either sand superficial damage or replace if damage is more profound.	Serious

Plumbing System

Significance: Medium
Condition: Good
Priority: Serious

Character Defining Features: None; see Building Interior for specific plumbing fixture features.

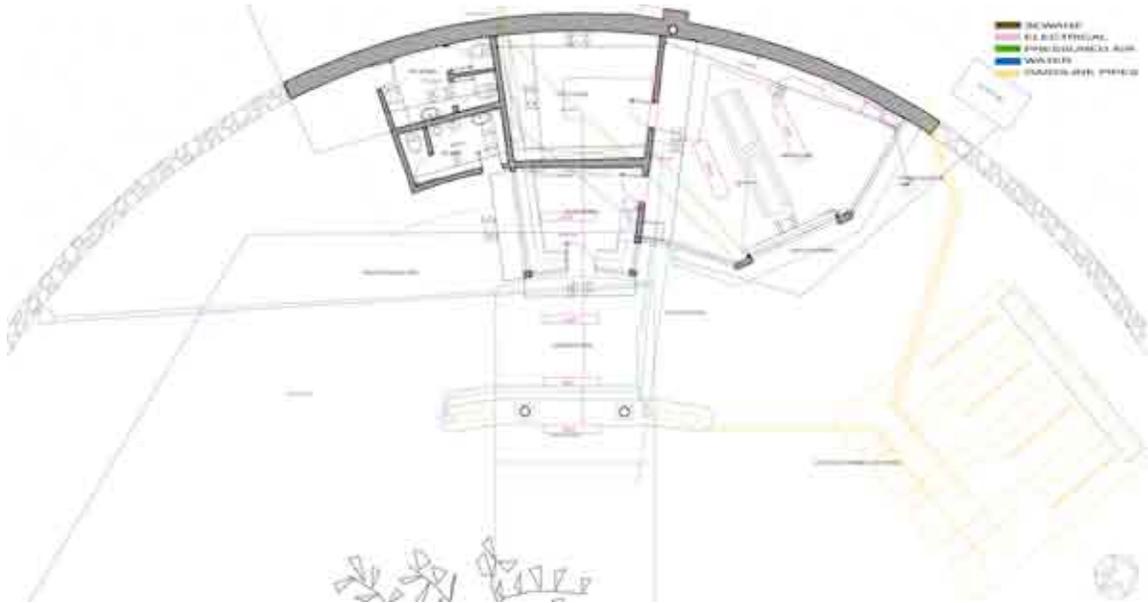


Figure 21 - Systems Plan showing the water (blue) and sewage (brown) distribution systems.

The plumbing system consists of the water supply system, fixtures for its use, and the sewer system for its disposal. Although many components of the original plumbing system are still in place, a new system functions in its place to supply the restrooms (the only functioning use of the system) through the walls adjacent to the restrooms. The original water supply system consisted of metal piping and entered the building from the southeast, under in the Repair Shop, access to which is under a manhole cover. The new water supply system enters the building through the west stone wall in the Utility Room and uses PVC piping, a material that is not sufficient to withstand the environmental conditions at Bryce Canyon. Existing plumbing fixtures include restroom sinks, toilets and urinals, all of which are functional, as well as exterior and interior water spigots, which are not functional. The sewer line enters and exits the building underground from the west. It was not inspected but is functioning properly.



Figure 22 & Figure 23 - Manhole cover in Repair Shop and old water supply and air piping system, within the manhole.



Figure 24 & Figure 25 - Current PVC water supply system as it enters the building in the Utility Room (left) and is distributed to the restrooms (right).



Figure 26 - Exterior water spigot, no longer functional.

Deficiency	Treatment Recommendation	Priority
PVC piping is insufficient to withstand environmental conditions at Bryce Canyon.	Replace the PVC water supply piping with appropriate material determined by Park maintenance staff.	Serious
Old water system is still in place, although not in use.	Remove the old water system during driveway resurfacing.	Minor

Electrical System

Significance: Medium
Condition: Good
Priority: Serious

Character Defining Features: None.

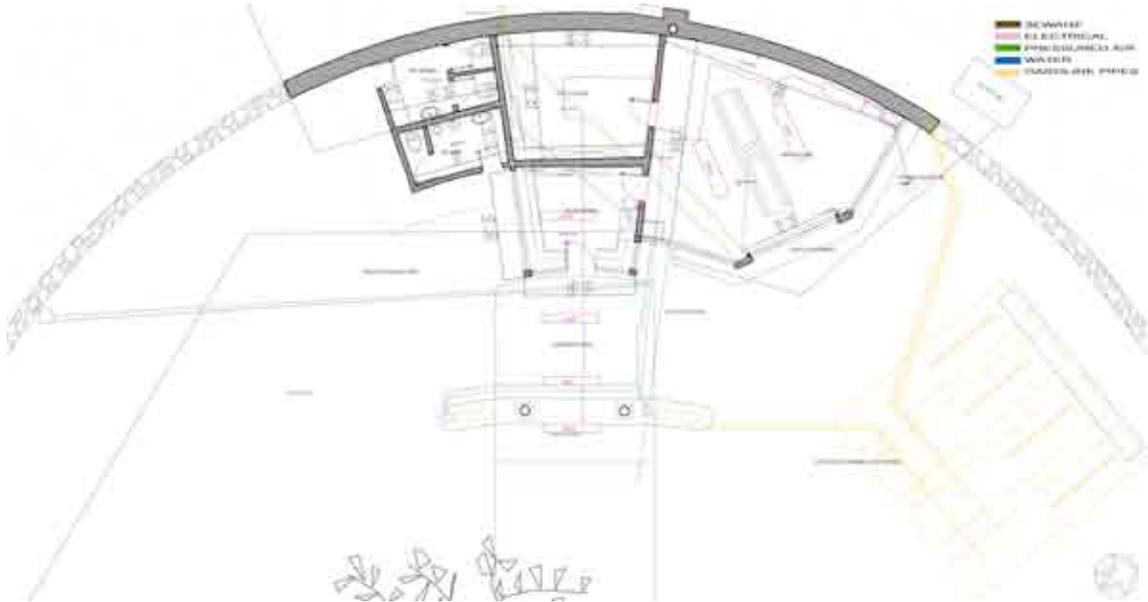


Figure 27 - Systems Plan showing electrical distribution system (pink).

The electrical system includes all breaker panels, wiring and conduits, electrical outlets, and lighting fixtures. Electricity is currently available throughout the Service Station; however, if water leakage from the roof continues, it raises safety concerns. All electrical wiring enters the building through a new main conduit penetrating the west stone wall in the Utility Room, goes through a new panel distribution box, and is distributed from there throughout the building via metal conduit. An electrical fuse box and meter, mounted on the exterior of the west stone wall, were installed during the 2001 electrical upgrading. Original conduit was laid in the concrete floor slab to supply some rooms with wall outlets, while the newer system used conduit distributed through the walls and ceiling. All light fixtures are currently working, including the original incandescent bulb, and the later florescent, fixtures in the Repair Shop, Utility Room, Sales Office, and under the Pump Island canopy. There is a multitude of switches in the Utility Room and Repair Shop that centrally operated many of the building's fixtures and equipment, but are no longer necessary. The exterior fixtures are somewhat rusty, but functional. Electrical outlets are present in all rooms but were not tested. With the exception of the Restrooms, whose electrical system was upgraded to ground service in 2001, the electrical system was not upgraded to the same level in the rest of the building.



Figure 28 & Figure 29 - Upgraded electrical system enters building through stone wall (left) to the panel distribution box in the Utility Room (right).



Figure 30 & Figure 31 – Original electrical outlet in Repair Shop using conduit embedded in concrete slab (left) and non-functioning switch boxes in Utility Room (right).



Figure 32 & Figure 33 - Florescent (left) and incandescent (right) lighting fixtures on interior.

Deficiency	Treatment Recommendation	Priority
Current electrical system is ungrounded except for the restrooms.	Upgrade to grounded service throughout entire service station.	Serious
Florescent lighting fixtures in Repair Shop and Sales Office.	Replace florescent fixtures in Repair Shop and Sales Office with fixtures appropriate for future use of the building.	Minor
Location of electrical meter against the stone wall detracts from the visual quality of the west façade.	Move electrical meter away from the wall.	Minor

HVAC System

Significance: Medium
Condition: Fair
Priority: Serious

Character Defining Features: Chimney and flue of original heating system.

The heating, ventilation, and cooling (HVAC) systems at the Service Station are limited to a wall-mounted electric heater located in the Sales Office whose placement detracts from the visual quality of the wood paneling. The original heating system for the building was an oil-fired circulating unit that sat in the southwest corner of the Repair Shop. It has been removed, but oil residues remain on the floor and walls. The interior flue hole from this original heater remains in the rear stone wall above the location of the original heater and connects with a chimney that protrudes beyond the west façade. This flue opening is historically significant, and its original location should be maintained in the future use of the building.



Figure 34 & Figure 35 - Current wall-mounted electric heater in Sales Office (left) and location of original oil heater in the Repair Shop.



Figure 36 & Figure 37 - Location of flue hole on the interior of the Repair Shop (left) and the protruding chimney form on the exterior of the west wall (right).

Deficiency	Treatment Recommendation	Priority
Outdated heater wall unit in Sales Office is potential fire danger and detracts from the visual quality of the wood paneling.	Remove and replace with portable space heater; not one that is permanently attached to the wall.	Serious
No heat in Repair Shop or Utility Room	Utilize portable space heaters as needed that are not permanently attached to the wall.	Serious
Original heater in Lift Room has been removed. Flue opening contains coffee can to prevent air conveyance.	Remove coffee can and block air with insulation material that is non-intrusive and maintain the original flue opening.	Minor

Air and Lift Systems

Significance: Medium
Condition: Fair
Priority: Minor

Character Defining Features: Automobile lift in Repair Shop

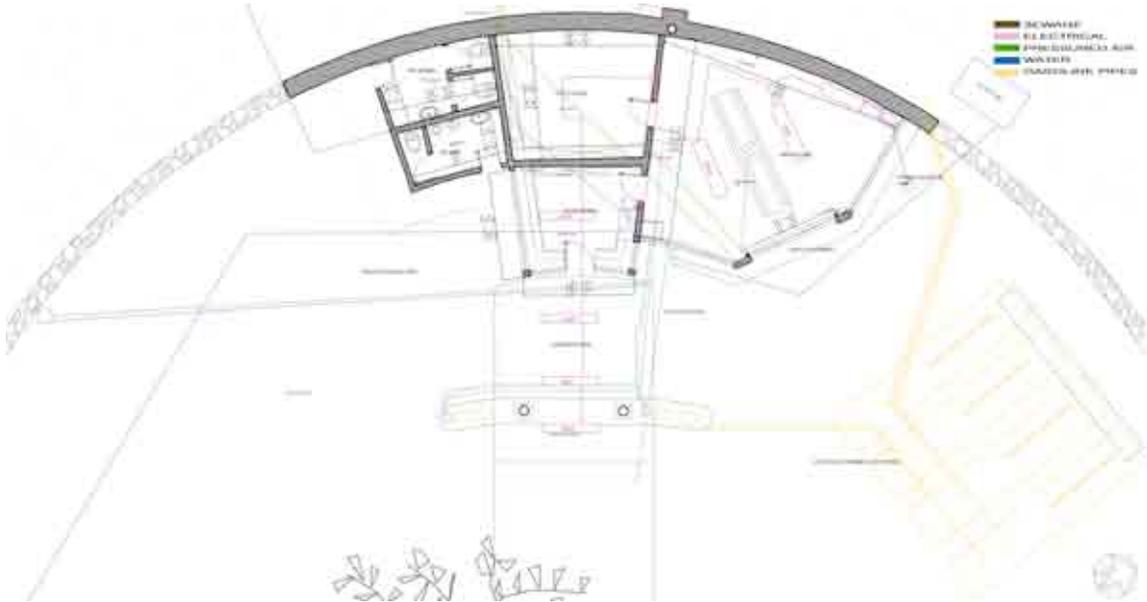


Figure 38 - Systems Plan showing the pressured air distribution system (green).

The original gas station utilized a compressed air system (air tank, pumps, manifolds, automobile lift, and air dispensers) to fill automobile tires and to power the automobile lift in the Repair Shop. The air tank and compressor are located in the Utility Room, while the air manifold is located in the Repair Shop. Colored steel piping runs between and to both the lift system and the air dispensing system in the Pump Island. Originally there were two air dispensers on the Pump Island and those that are there appear to be original. The compressed air lift system has not been in operation for some time and was not tested. If the system is operational, it could be incorporated into the future use of the building as defined by the *Ultimate Treatment and Use* section. If not operational, the automobile lift in the Repair Shop should be maintained as a visual association to the building's historic use.



Figure 39 & Figure 40 - Compressed air tank (left) and pump (right) located in the Utility Room.



Figure 41 & Figure 42 - Air manifold (left) and automobile lift mechanism (right) in Repair Shop.

Deficiency	Treatment Recommendation	Priority
Operability of compressed air system.	Verify operability of compressed air system; if system is not functional, replace with new system in the original location to accommodate future use or preserve/interpret automobile lift.	Serious
	Preserve placement of existing compressed air system including air tank, pump (both in Utility Room), manifold, automobile lift (both in Repair Shop) and air dispensers (Pump Island).	

Gasoline and Oil System

Significance: Medium
Condition: Fair
Priority: Minor

Character Defining Features: Gas dispensers

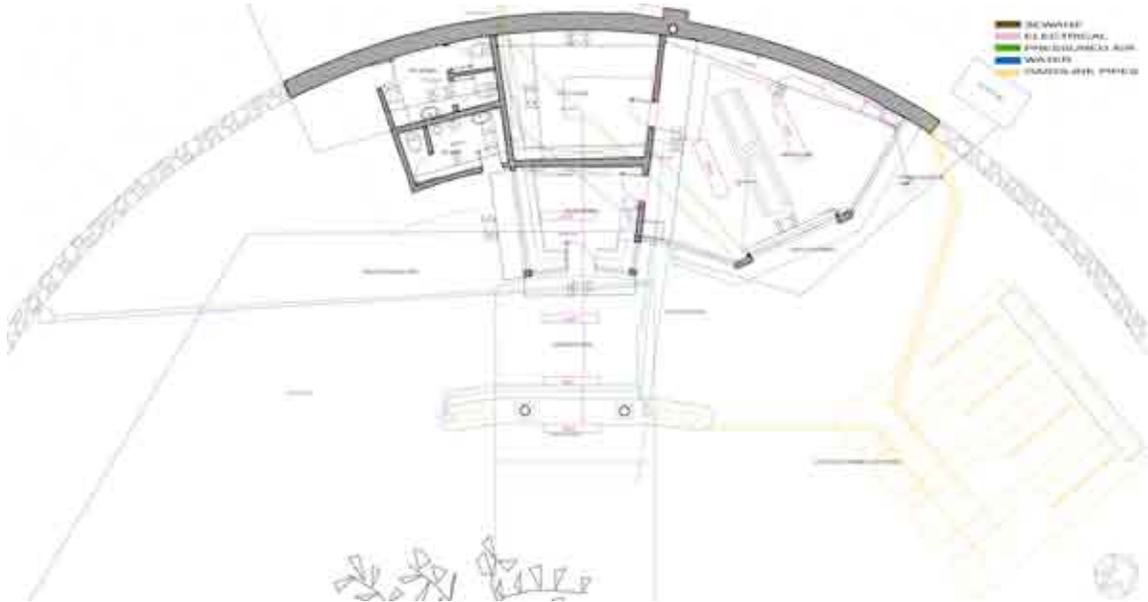


Figure 43 - Systems Plan showing gasoline distribution system (yellow).

Originally four gasoline storage tanks were located underground in the north end of the paved lot, and piping ran to the Pump Island to dispense gasoline. In 1984, this system was replaced with one 10,000-gallon and two 5,000-gallon tanks. This system was removed and environmentally treated in 1990. The gasoline pumps currently located on the Pump Island are not original to the building or functional, but are consistent with the period of significance. A waste oil disposal pit is located in the northwest corner of the Repair Shop and connects with an underground waste oil tank. The box is still present, but it is unclear whether the waste oil tank was removed when the gasoline tanks were removed in 1990. Although it is likely the tank was removed, no documentation exists that specifies environmental treatment of the waste oil system. The original architectural drawings also specify a Blazo tank, which contained white gas (Lantern fuel), but again, there is no documentation verifying its current location or whether it still exists.



Figure 44 & Figure 45 - Non-operational, non-original gasoline pump at the Pump Island representing the period of significance (left) and the waste oil disposal area, northwest corner of Repair Shop (right).

Deficiency	Treatment Recommendation	Priority
No documentation of waste oil tank removal.	Determine whether the waste oil tank is still present underground at the north end of the building. If tank is still present, consult with Utah Department of Environmental Quality to determine its appropriate disposal. Maintain waste oil disposal area in Repair Shop for its association with the system's historic use.	Serious
No documentation of Blazo tank location/removal	Verify tank removal through excavation of area designated for the tank on architectural drawings (Kelly Shakespear believes it has been removed).	Serious

Site Features

Significance: High
Condition: Good
Priority: Minor

Character Defining Features: Low stone wall extensions of the building's rear structural stone wall, low stone wall defining the island.

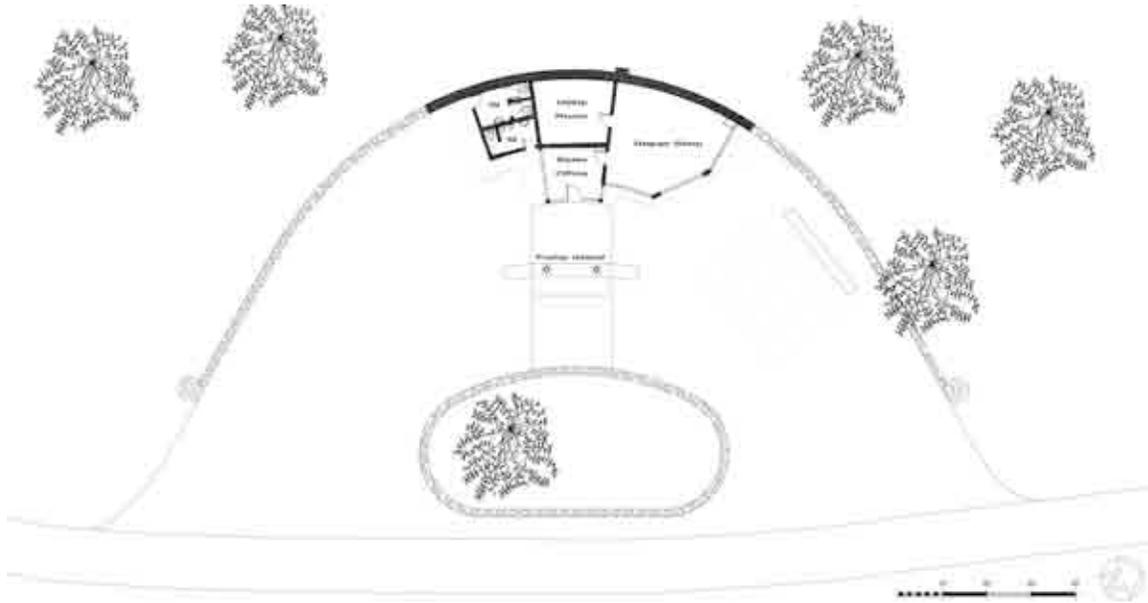


Figure 46 - Site Plan.

The Utah Parks Company Service Station is located to the west of a paved park road and is accessed by an asphalt-paved parking area. The sloping field behind the building is rather densely timbered with native ponderosa pine. A large ponderosa pine is located within an “island” between the park road and the Service Station. This tree appears to have been left in place at the time of the building’s construction. On the south end of the island are two interpretive panels, “Post-War Service Stations” and “Wheeling Through the Years” that address changes in transportation operations in parks such as Bryce Canyon.

The arcing rear stone wall of the Service Station extends beyond the building footprint and gradually drops in height and continues its arc as a low retaining wall to define parking areas of either side of the main building. Each extension of the wall terminates with a circle of cut stone that originally supported “floodlights” (per architectural drawings). There is no evidence that the lights were ever installed, or if so, when they were removed. A low stone retaining wall encircles a planting area “island” to the east of the building that borders the park road. These low walls are constructed of the same cut field stone as the Service Station building and laid in concrete mortar.



Figure 47 – Interpretive panels located in the island detracts from the visual quality of the site.

Deficiency	Treatment Recommendation	Priority
Minor mortar loss, salt efflorescence, and lichen growth on low rock walls encircling driveway and planting area island.	Implement maintenance schedule of gentle cleaning and mortar repointing of the low rock walls.	Minor
Interpretive signs detract from overall site ambiance.	Remove interpretive signs and incorporate into permanent exhibit as part of <i>Ultimate Treatment and Use</i> .	Minor
Recreational vehicles collide with Pump Island canopy; concrete barricades have been placed around Pump Island.	Remove concrete barricades; replace with visually more attractive element, (e.g. outdoor seating), to prevent RVs from entering the Pump Island area.	Serious

Building Exterior

Significance: High
Condition: Fair
Priority: Critical

Character Defining Features: Planar roofline of building and Pump Island, arcing stone wall, and transparency of window walls.

The exterior of the Service Station is dominated by a long, arcing stone wall defining the west façade of the building, off which a series of horizontal roof planes is projected. The simplicity of this arrangement of vertical and horizontal planes contrasts with the irregular-shaped building that is recessed under the projecting roof planes. The west façade is an arced wall constructed of rough cut, regularly coursed stone from the Sheep Creek Quarry located within the Park boundaries. There is a small stone chimney that protrudes beyond the arcing wall's west façade that extends the entire height of the wall. The south, east and north facades consist largely of windows and wood beaded board paneling to produce a transparent, open appearance.

The façade of the Sales Room consists of large rectangular window panes paired with smaller windows above. Some of the upper windows are fixed and two are operable awning-type windows. A wood door with one large windowpane provides access to the Sales Area. An overhead sliding garage door with glass windowpanes provides access to the Repair Shop.

On the east façade, a flat-roofed canopy supported by steel pipe columns extends from the flat roof of the building and provides protection for the former gasoline Pump Island. The Service Station roof and Pump Island canopy are planar in form and project outward beyond the boundaries of the walls, giving the roofline a floating quality. Two bathrooms with separate entries are located on the southeast portion of the building whose facades are composed primarily of pine bead-board paneling laid in a vertical direction. The bathrooms' door/window ensemble is L-shaped with one leg forming the door and the other a pair of windows for light and ventilation. The pine bead-board paneling is applied in different directions on different parts of the building depending on whether a vertical or horizontal design emphasis is appropriate.

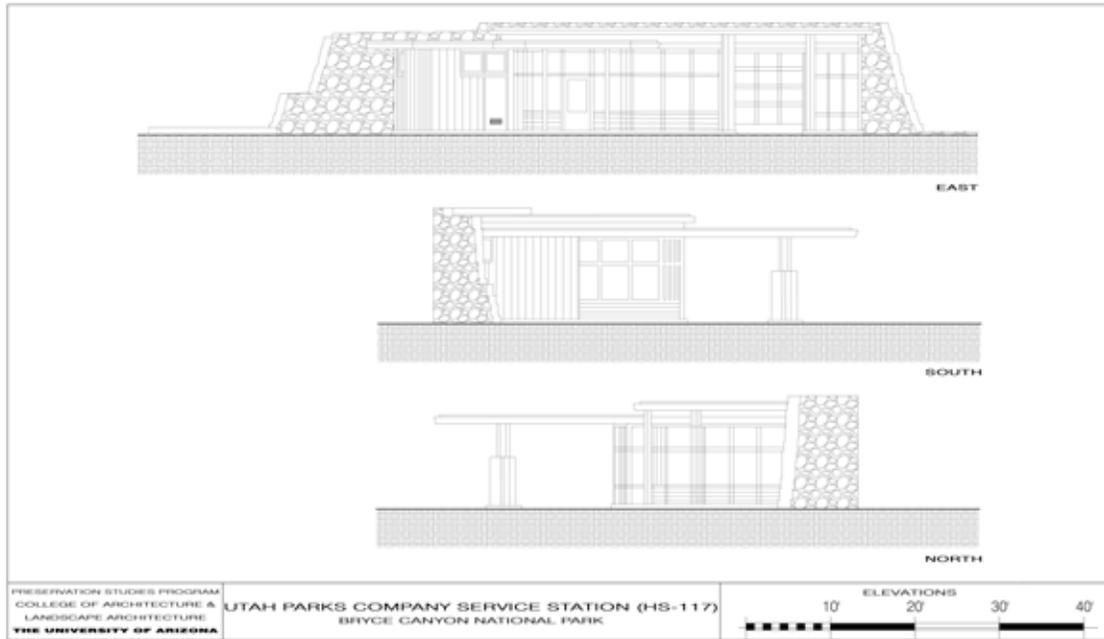


Figure 48 - Documentation drawings of the east, south and north facades.



Figure 49 - East façade composite documentation photograph (letters refer to notes in condition assessment table below).



Figure 50 - South façade composite documentation photograph (letters refer to notes in condition assessment table below).



Figure 51 - North façade composite documentation photograph (letters refer to notes in condition assessment table below).

Deficiencies	Recommended Treatments	Priority
A. Water damage to wood paneling and fascia including warping, splintering, and rot due to insufficient drainage system.	Implement Proposed Drainage Plan (see <i>Ultimate Treatment</i>)	Critical
	Replace siding and fascia where necessary; paint wood to match original color.	
B. Water puddling and resulting plant growth at base of rock wall.	Implement Proposed Drainage Plan (see <i>Ultimate Treatment</i>).	Critical
	Remove plant growth and regrade site to evacuate water away from the building.	
C. Testing indicates brown paint contains lead.	Remove lead paint using appropriate abatement standards, and repaint to match original.	Serious
	Paint to match original color.	
D. Deflection in Pump Canopy roof, apparent at fascia (gap between boards) probably caused by snow load.	Implement Proposed Drainage Plan (see <i>Ultimate Treatment</i>) to address snow and water removal from roof.	Critical
E. Mortar loss, stone erosion, efflorescence, and biological growth on rock wall.	Implement maintenance schedule of gentle cleaning and mortar repointing.	Serious
F, G, H. Brown paint peeling and crackling.	Replace any deteriorated wood paneling; paint to match original.	Critical
	Repaint to match original color.	
I. Splintering and warping of wood fascia and siding.	Replace fascia and siding as necessary.	Critical
J. Slight undercutting of front corners of the Sales Office causing erosion of concrete slab foundation and further damage to wood along base of façade	Implement Proposed Drainage Plan (see <i>Ultimate Treatment</i>), to address regrading of site to evacuate water away from the building.	Critical
K. Wood rot and paint peeling on the windowsills.	Replace wood sills where necessary;	Serious
	Repaint to match original color.	

L. Rusting on exterior fluorescent light fixtures.	Replace with lighting system appropriate for period of significance and future use.	Serious
M. Cracking and loss of concrete slab at base of main entrance, garage door, and around Pump Island.	Repair with like materials	Minor
N. Scuffing/scarring of front and restroom doors.	Repair and refinish.	Minor
O. High profile vehicle damage in the form of scraped beaded board paneling on both north and south sides of the underside, fascia and metal flashing of Pump Island canopy	Repair and repaint. Replace concrete barricades with deterrent less visually intrusive and more appropriate to future use (e.g. outdoor seating). Replace metal flashing where necessary and repaint to match original.	Serious

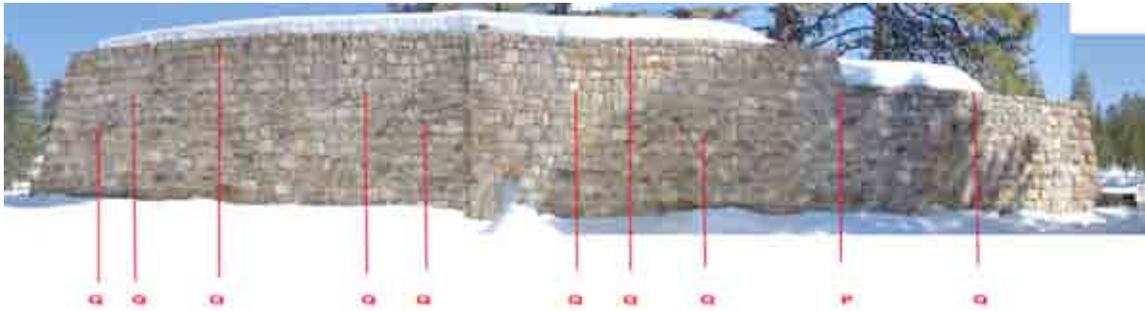


Figure 52 - West façade composite documentation photograph (letters refer to notes in condition assessment table below).

Deficiencies	Recommended Treatments	Priority
P. Vertical crack running from base of wall to the top.	Repoint and install crack monitors to assess long-term separation.	Critical
Q. Mortar loss, stone erosion, efflorescence, and biological growth on rock wall.	Implement maintenance schedule that includes gentle cleaning and mortar repointing.	Serious

Building Interior

Women's Restroom

Significance: High
Condition: Fair
Priority: Critical

Character Defining Features: Rock wall, stained concrete floor slab with integrated base molding, original plumbing fixtures, original wood stalls and paneling.

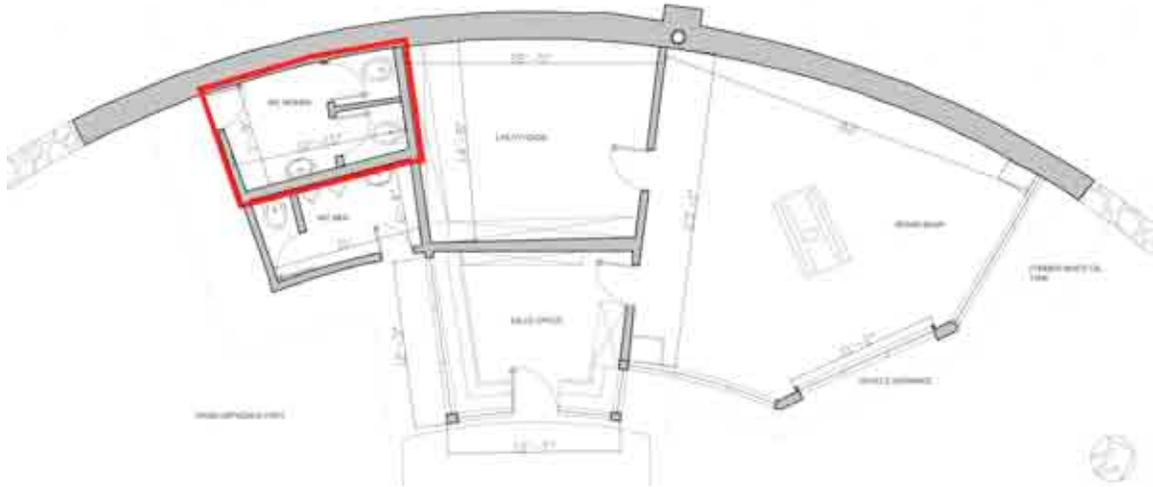


Figure 53 - Reference floor plan showing location of the Women's Restroom.

The Women's Restroom is accessed from the outside through a door on the south wall. The room contains two toilets and one sink. These are the original plumbing fixtures and are in good condition. The stalls are original, sheathed in stained fir veneer, and are in good condition. The ceiling is white plasterboard and has two cracks, one extending from the east wall and one extending from the west wall. Each crack reaches approximately halfway across the ceiling. The west wall is formed of locally quarried fieldstone. The stone wall has a vertical crack that is visible on the exterior and is also visible on the interior of the Women's Restroom. The crack was previously repaired but this repair is failing. The connection between the rock wall and ceiling is poor and there are a few areas where roofing tar leaked through the ceiling onto the stone. The remaining three walls are white plasterboard on the upper half and stained pine wood on the bottom half and are in good condition. The floors are stained red concrete that turn up at the base of the wall to form an integrated base molding. There is general wear and tear to the concrete and a band of residue at the base of the wood paneling and concrete base along the north wall. Communication with Kelly Shakespear indicated that there has been termite infestation through the stone wall but there is no visible evidence of current activity.



Figure 54 & Figure 55 - Wooden toilet stall partitions (left) and water damage from poor connection between stone wall and roof in Women's Restroom (right).



Figure 56 & Figure 57 - Vertical crack in stone wall visible on interior of restroom (left) and residue along the base of the north wall (right).

Deficiency	Treatment Recommendation	Priority
Poor connection where the rock wall meets the roof/ceiling causing water damage.	Implement Proposed Drainage Plan (see <i>Ultimate Treatment</i>) and seal the joint between the rock wall and the roof/ceiling.	Critical
Roofing tar has leaked onto the stone through the joint between the ceiling and rock wall.	Clean tar off rock wall.	Minor
Vertical crack in rock wall running from floor to ceiling.	Repoint and install crack monitor to assess movement.	Critical
Cracking in ceiling plasterboard.	Repair and repaint ceiling.	Minor
Wear and tear along the base of the wood paneling and top of concrete trim along the north wall.	Clean residues from wood and concrete and refinish.	Minor
General wear and tear to concrete floors.	Refinish and restain surface with appropriate red color or reseal.	Serious
Previous termite activity.	Evaluate infestation and existing damage to wood elements.	Critical
	Consult pest control specialist for treatment options.	
	Replace any structural members damaged beyond repair.	

Men's Restroom

Significance: High
Condition: Good
Priority: Minor

Character Defining Features: Stained concrete floor slab with integrated base molding, original plumbing fixtures, original wood stalls and paneling.

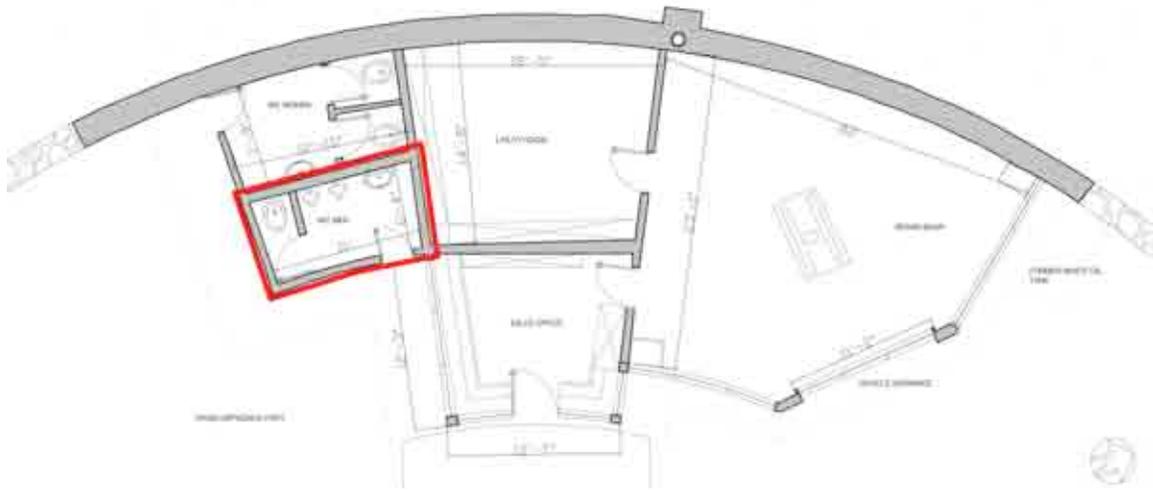


Figure 58 - Reference floor plan showing location of the Men's Restroom

The Men's Restroom is accessed from the outside through a door on the east wall. The room contains two urinals, one toilet, and one sink. These are the original plumbing fixtures and are in good condition. The partition stalls are original, sheathed in fir veneer, and are in good condition. The ceiling is white plasterboard and has one crack extending from the east wall approximately halfway across the ceiling. The four walls are white plasterboard on the upper half and stained pine wood on the bottom half and are in good condition. The floors are red-stained concrete that turn up at the base of the wall to form an integrated base molding. There is general wear and tear to the concrete.

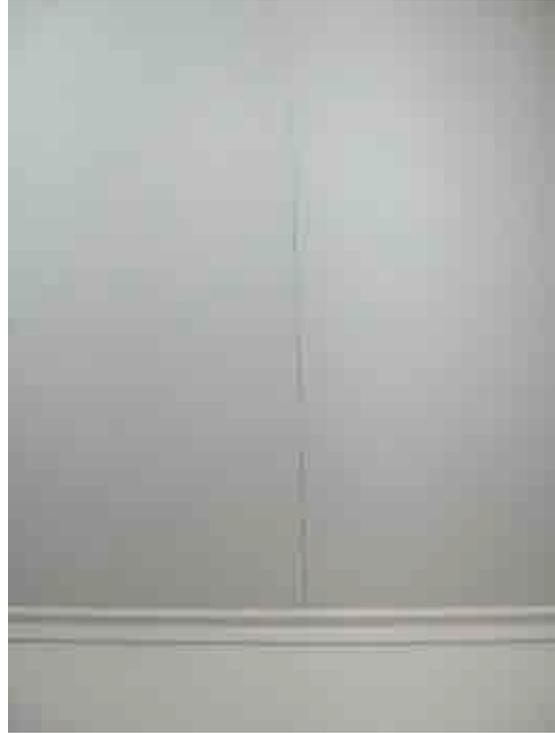


Figure 59 & Figure 60 - Original urinals showing integrated concrete floor slab and base molding (left) and crack in ceiling plasterboard, visible in both Men's and Women's Restrooms (right).

Deficiency	Treatment Recommendation	Priority
Cracking in ceiling plasterboard.	Repair and repaint ceiling.	Minor
General wear and tear to concrete floors.	Refinish concrete floors paint with appropriate color.	Serious

Sales Office

Significance: High
Condition: Fair
Priority: Critical

Character Defining Features: Decorative chevron pattern on pine bead-board paneling, window walls.



Figure 61 - Reference floor plan showing location of the Sales Office.

The main entrance to the Sales Office is located on the east wall and accessed from underneath the Pump Canopy. The walls facing the exterior of the Sales Office consist of rectangular, wood-framed windows paired with smaller windows above. Two of the upper windows are operable awning-type windows and the rest are fixed pane. A wood door with one large glass pane provides access to this sales area. The west wall and ceiling are sheathed with stained and varnished pine bead-board paneling in a distinctive chevron pattern. Additionally, a wall-unit heater has been installed on this wall that appears not to be original. The wood shelving along the west wall and the sales counter along the north wall are original. These are showing normal wear and tear. The display shelving along the north, east, and south windows was reconstructed in 2000 based on similar display shelving from the Service Station's sister facility at the North Rim of Grand Canyon National Park. The floors are unfinished concrete and are showing normal wear and tear along with some oil staining. A non-original fluorescent light fixture is located in the center of the ceiling that detracts from the chevron-patterned paneled ceiling.

There is water damage to the pine bead-board ceiling, including staining and cracking as well as to the trim along the north wall. This damage is particularly noticeable in the northeast corner of the ceiling. There is a small area of loss to the bead-board near the fluorescent light fixture that is located in the center of the ceiling. There is also some soiling along the base of the west wall paneling, especially in the northwest corner.



Figure 62 & Figure 63 - Water damage to paneled ceiling and wood trim.



Figure 64 & Figure 65 - Original wood shelving on west wall (left) and reconstructed display cabinet (right).

Deficiency	Treatment Recommendation	Priority
Wear and tear to original shelving units and sales counter.	Refinish original shelving units.	Minor
Fluorescent fixture obscures chevron pattern of ceiling.	Remove fluorescent lights and replace with lighting system more appropriate for the period of significance and future use.	Serious
Water damage to beaded board ceiling and wood trim.	Repair source of water damage.	Critical
	Replace and refinish wood where necessary to match original.	
Small area of loss in beaded board near light fixture.	Repair area of loss.	Minor
Wear and tear to east entrance door and hardware.	Refinish door and repair/replace hardware.	Serious

Soiling along the base of the west wall paneling.	Clean paneling along base.	Minor
General wear and tear and oil stains on concrete floor.	Clean and seal concrete floors. A certain patina of oil staining is allowable and even desirable.	Serious
Outdated heater wall unit.	Replace heater with portable, non-intrusive space heater.	Serious

Repair Shop

Significance: High
Condition: Fair
Priority: Critical

Character Defining Features: Stone wall, automobile lift, pine bead-board wall paneling, window walls, exposed ceilings, garage door and hardware, flue opening of former oil heater.

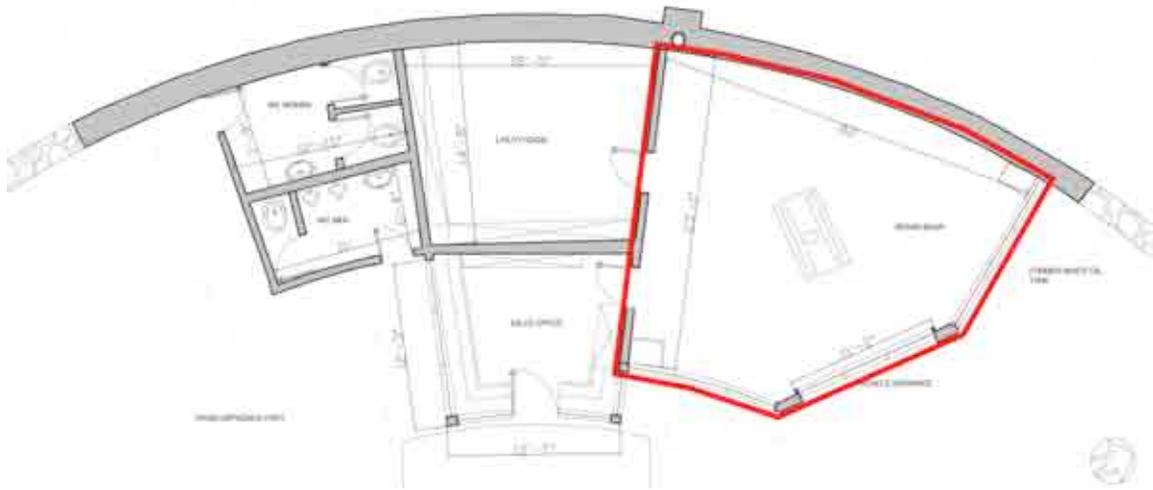


Figure 66 - Reference floor plan showing location of the Repair Shop.

The Repair Shop can be accessed from the interior through the Sales Office or from the exterior through the garage door. The door from the Sales Office and its hardware show normal wear and tear. The garage door is operational and appears to be in good condition. There are two operable windows along the top of the north wall whose hardware appears to be in good condition. The north, northeast, and east walls are primarily wood-framed windows. There is water damage to the wood (warping and wood rot) and paint (bubbling and peeling) along the base of the north and east walls, especially in the northeast corner. This is most likely from puddling and back-splash of water due to poor site water drainage on the exterior in these areas. The south wall is partly composed of windows shared with the Sales Office and half composed of a wood framed and paneled wall with a non-original door/door frame leading into the Utility Room. The Utility Room originally had only an opening (without a door) to the Repair Shop. A doorframe and door were installed in 1990 and are in good condition. Also on the south wall are three incandescent bulbs aligned vertically whose original purpose is unclear.

The west wall is formed of locally quarried fieldstone that forms the arcing rear wall of the room. On the north side of the stone wall is a workbench painted blue that is in poor condition. The workbench probably dates close to the construction date but is not original. There is a fluorescent fixture above the bench that drops down and obscures the stone wall. On the south side of the stone wall there is a flue opening that was formerly connected to the original oil-burning heater that has since been removed. The flue opening leads to a chimney that protrudes from the exterior of the stone wall. There is a crack in the stone wall at the south end of the room beginning at the lower left corner of the flue opening and continuing down into the Utility Room. This crack is only visible from the interior and may have been caused by drilling in the Utility Room when the electrical service was upgraded. There is dark soiling and staining along the base

of the west and south walls, particularly in the southwest corner that may be from the residues of mechanical fluids or from the original oil-burning heater.

The wooden roof joists and diagonally-laid roof decking of the ceiling are exposed. The connection between the stone wall and the Repair Shop roof is poor. There is considerable water damage to the ceiling joists including staining, warping, and rot. There is a significant band of efflorescence and areas of biological growth on the stones just below the ceiling. Both the original incandescent lighting and the later florescent light fixtures remain on the ceiling along with the garage door mechanisms.

The floors are unfinished concrete and are cracked in some areas but are not structurally deficient. In the center of the Repair Shop floor is an automobile lift that appears to be original. When folded up, the lift is 3 feet wide, 5 feet long and has a 14 inch round center. This round center allows the arms to move in any direction. There are 4 arms total that can be extended to approximately twice their original length. Its operability was not verified. There is also evidence that there was a subterranean service pit in the floor, but there are no records to indicate when it was filled in.

In addition to normal wear on the floor, there are numerous oil stains throughout the room with fresh oil puddles around the lift mechanism. At the northwest corner of the room, there is a waste oil disposal pit used as part of the original waste oil system. The pit edge and cover is raised a few inches off the floor and is currently removable. There is another covered pit in the southeast corner of the room that houses valves of the old water compressed air systems. This steel plate cover is flush with the floor and is currently removable.



Figure 67 - Composite photograph of west stone wall from the Utility Room (far left) to the window wall (far right) showing the visually intrusive workbench.



Figure 68 & Figure 69 - Workbench and north wall, both of which have paint containing lead.



Figure 70 & Figure 71 - Abandoned pulley from garage door mechanism attached to roof joist (left) and fresh oil stains on concrete slab floor from automobile lift.

Deficiency	Treatment Recommendation	Priority
Crack in rock wall beginning at lower corner of flue opening and continuing down into Utility Room (see <i>Structural System</i> section for image)	Repoint mortar and insert crack monitor to assess movement.	Critical
Poor connection between the rock wall and ceiling.	Implement Proposed Drainage Plan (see <i>Ultimate Treatment</i>) to seal the joint between the rock wall and the roof.	Critical
Water damage to roof joists.	Replace wood where necessary.	Critical
Areas of efflorescence, biological growth, and dark staining on stone.	Clean with gentle methods and implement regular maintenance schedule of monitoring and cleaning.	Minor
Water damage to the wood frame and paint along the bottom of north and east walls.	Replace wood and/or repaint where necessary.	Critical
Testing indicates brown paint on walls contains lead.	Remove lead paint using appropriate abatement standards and repaint to match original color.	Serious
Fresh oil puddles and stains on floor.	Clean concrete floors, fill in cracks in slab, and seal leaving patina.	Critical
Concrete slab is cracked in some areas		

Wear and tear on workbench.	Document, remove, and dispose of workbench using lead abatement standards, to expose entire stone wall.	Serious
Testing indicates blue paint contains lead.		
Lighting	Remove fluorescent lights and replace with lighting fixtures appropriate to the period of significance and future use.	Minor
Oil disposal pit.	Remove remaining waste oil fill and seal.	Serious
Automobile lift	Adapt lift for future use or interpretation.	Serious

Utility Room

Significance: Medium
Condition: Fair
Priority: Serious

Character Defining Features: Rock wall, graffiti on wooden cabinets, compressed air tank

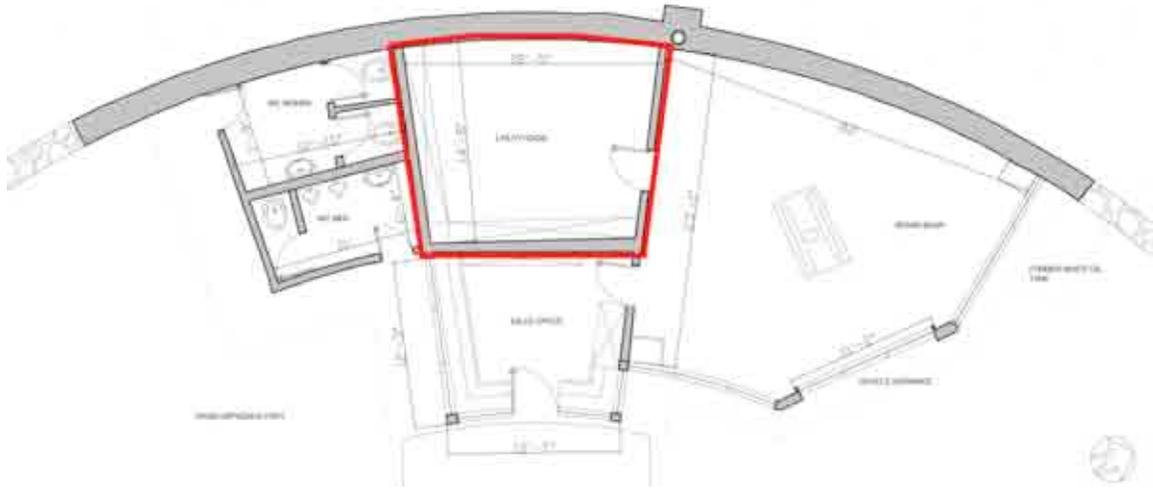


Figure 72 - Reference floor plan showing location of the Utility Room

The Utility Room is entered from the north through the adjacent Repair Shop. The Utility Room originally had only an opening to the Repair Shop. A doorframe and door were installed in 1990 and are in good condition. The north, east, and south walls are wood frame with diagonal wood paneling on the south wall and exposed frame on the east and north walls. The Service Station's electric breaker box is located on the north wall, adjacent to the door. A large electrical conduit, installed in 2002 penetrates the stone wall connecting the electrical meter on the exterior with the electric breaker panel on the interior of the Utility Room.

There is a cabinet and shelving along the east wall and shelving along the south wall. At the top of the east and south walls is access to the intersticiary space between the roof and ceiling of the Restrooms/Sales Office/Pump Island canopy roof plane which is lower than the upper roof plane over the Utility Room/Repair Shop. The wood paneling beneath this space is cut in an irregular, jagged manner. Currently, there are pieces of cardboard and other scraps stored in the intersticiary space; the size of the crawl space prevented access. There is handwritten graffiti in yellow chalk on the cabinetry and on some areas of the north and south walls. The cabinets appear to be contemporaneous with the building's construction (they are similar in construction to those in the Sales Office). During the years the building functioned as a service station, graffiti accumulated from the various employees of Utah Parks Company, many of whom still live in the Bryce Canyon area. This graffiti represents a continuum of historic artifacts that should be preserved as tangible evidence of the people who worked there.

The west wall is composed of locally quarried fieldstone that forms part of the arcing west wall. There is a crack in the rock wall at the north end of the room that begins in the Repair Shop and moves into the Utility Room. This crack is only visible from the interior and may have been caused by drilling into the stone wall to install the electrical conduit in 2002.

The wooden roof joists and diagonally-laid roof decking of the ceiling are exposed.. The connection between the stone wall and the Utility Room roof is poor. A previous attempt to repair the joint used expanding foam fill, which is visible along the edge of the ceiling on the west wall. There is considerable water damage to the ceiling joists including staining, warping, and rot. There is a significant band of efflorescence and areas of biological growth on the stones just below the roof joists.

Both the original incandescent lighting and the later florescent light fixtures remain on the ceiling. There is one area of graffiti in white paint on one stone of the west stone wall. The floors are unfinished concrete. In addition to normal wear and tear there are stains from oil and other fluids that have been tracked into the room. A conversation with Kelly Shakespear indicated past rodent infestation though there was no current evidence of such.



Figure 73 & Figure 74 - Cabinets on east and south walls showing the compressed air tank, exposed framing of the east wall, diagonal wood paneling of the south wall and the water stains at the connection between the stone wall and roof joists.



Figure 75 & Figure 76 - West stone wall showing the water stains at the connection between the stone wall and roof joist, the dripping foam used to unsuccessfully seal the joint (left) and the east exposed wood frame wall with the intersticiary space above (right).



Figure 77 & Figure 78 - Yellow chalk graffiti on cabinetry and walls.

Deficiency	Treatment Recommendation	Priority
Crack in rock wall beginning in Repair Shop and continuing into Utility Room	Repoint mortar and install crack monitor to assess movement.	Critical
Poor connection between the rock wall and ceiling.	Implement Proposed Drainage Plan (see <i>Ultimate Treatment</i>). Remove expanding foam fill used in previous repair and seal the joint between the rock wall and the ceiling/roof.	Critical
Areas of efflorescence, biological growth, and dark staining on stone.	Clean with gentle methods and implement regular maintenance schedule of monitoring and cleaning.	Minor

Wear and tear and some oil staining on concrete floors.	Clean concrete floors and seal leaving patina.	Critical
Irregular jagged cut paneling below crawl space on east wall.	Replace wood in areas of loss to create even edge below intersticiary space.	Minor
Compressed air system	Maintain use of existing compressed air systems.	Serious
	If system is not functional, replace with new system in the original location.	
Intersticiary space	Clean intersticiary space of debris.	Serious
	Do not use for storage.	
Rodent infestation	Evaluate infestation and consult pest control specialist for treatment options.	Critical
Graffiti	Maintain graffiti as long as feasible for interpretation purposes.	Serious
	If removal is necessary for repair or maintenance, document and archive graffiti.	

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*PART TWO:
TREATMENT AND USE*

INTRODUCTION¹⁹

Interest in the preservation of modern architecture has emerged in recent decades as America's periodic construction booms have obliterated more and more landmarks from the post-World War II era. Small-scale buildings, like the Utah Parks Company Service Station, have been especially vulnerable, especially those in a context of romantic revival, or neo-rustic architecture like that of Bryce Canyon National Park.

This loss has been fueled in part by those who continue to argue that there is inadequate historical perspective to assess the significance of post-war, modern buildings, they are anomalies in an otherwise pre-war geographic context and the expertise to interpret and preserve them doesn't exist, or modern architecture is simply not liked. However, an increasing number of preservation professionals, including the American Institute of Architects, the National Trust for Historic Preservation, and State Historic Preservation Offices, have begun to acknowledge the role of the "recent past" as part of the continuum of our nation's architectural heritage and have implemented comprehensive strategies to preserve them. The National Park Service has been at the forefront of an effort to preserve structures from the recent past. The Utah Parks Company Service Station at Bryce Canyon National Park offers an outstanding opportunity to preserve and showcase an exceptional example of mid-twentieth century modern design.

This section of the Historic Structure Report is intended to show how a plan for treatment and use can be implemented with minimal adverse effect to the historic building while still addressing the problems that exist with the current structure and its potential for an appropriate future use.

¹⁹ The text of this Introduction is adapted from the *Historic Structure Report, Wright Brothers National Memorial Visitor Center*, a parallel report focusing on a post-World War II modern building.

ULTIMATE TREATMENT

This section presents the ultimate treatment recommended for the structure and the rationale for the treatment decision. Presentation of the ultimate treatment shall take the form of recommendations for a proposed new use for the Utah Parks Company Service Station that will guide the preservation requirements for treatment outlined in the next section.

Proposed New Use

One of the primary preservation issues with any historic structure is the use to which the structure is put. In almost all cases, continuation of the use for which a structure was designed and built is the preferred alternative, since changes in use generally necessitate significant changes to a building and a resulting loss of character defining features.

However, like many structures, the Utah Parks Company Service Station is an example of a building type whose function is no longer serving the management objectives of park. Many parks, like Bryce Canyon National Park have adopted mission objectives that have pushed automobile services to gateway communities outside the park boundaries. Sustainable practices have also been incorporated by national parks as a strategy to improve vehicle emissions, environmental quality and ultimately, the quality of the visitor experience.

Bryce Canyon National Park is seeking a new use for the currently non-functioning Service Station building that best accommodates the unique architectural features while addressing the park's programmatic needs. **This Report recommends the Service Station be rehabilitated for seasonal use as a Bicycle Service Station, a facility to support cyclists visiting the park.** It is recommended that the implementation of this new use be executed in two phases:

Phase I – Bicycle Comfort Station

This passive use of the building would include the installation of an exhibit on the history of transportation in national parks and vending machines catering to cyclists requiring no staff. This phase could be implemented once the critical-priority preservation treatments have been completed.

Phase II – Bicycle Service Station

This active use of the building may require a concession contract to operate a full-service bicycle rental and repair facility requiring at least one, and optimally two, staff. This phase could be implemented once the serious-priority preservation treatments have been completed and sufficient interest in bicycle services has been determined to justify concessioner investment.

Rationale

The Utah Parks Company Service Station was constructed in 1947 to meet the demand of post-World War II transportation needs in the park. Bryce Canyon had already established itself as one of the primary destinations of the Grand Circle Tour of southwest parks, including Zion, Grand Canyon, Cedar Breaks, and Arches, among others, but instead of rail and tour coach, visitors were arriving by automobile. As automobile traffic began to threaten the environmental quality and consequently the visitor experience, alternative transportation systems, including shuttles and bicycles, were adopted in some national parks to ease pressure to build more automobile parking lots and service amenities. Today, bicycles are permitted in most national parks, including Bryce Canyon, but there are few comfort stations or other bicycle-oriented amenities that would act as an encouragement to depart from the established automobile-oriented network of roads. In addition to potential traffic from visitors who arrive by car and participate in on-site rental of bikes to see the park, more serious cyclists could experience the Grand Circle

Tour on bicycle if bicycle-oriented services existed at each of the participating parks. A bicycle trail already exists through the Red Canyon area adjacent to entrance to Bryce Canyon National Park and with the assistance of the National Park Service's Rivers, Trails and Conservation Assistance (RTCA) Program²⁰, a larger, regional network of bicycle trails could be developed that connects more of southern Utah's scenic attractions.

Examples of such bicycle networks include the Idaho Parks and Recreation Department-funded "Coeur d'Alene Lake Drive Bike Trail Project." A 5-mile long, 10-foot wide pathway was developed by redesigning a section of Interstate 90. The highway was reduced from 4 lanes to 2 in order to create a path exclusively for cyclists and hikers. There were also bicycle service stations and restrooms built. The path is extremely popular, with over 14,000 people using the path each month during the summer. Also in Idaho is the "Diversion Dam Bicycle Rest Area," which has almost 20 miles of continuous pathway. A third similar Idaho project is "Driggs to Victor Bike Path Project," with 2 miles of bike path that provides access to the Teton Mountains.²¹ A good example of a bicycle comfort stations is in Lynbrook, New York's downtown area, where a "bicycle rest station" was constructed near a 60-mile bicycle path, to encourage bicycle riding to help revive the village-like atmosphere this town historically possessed.²²

While accommodations for cyclists in national parks is often oriented toward off-road access (or control thereof), many of the parks contacted for this report indicated their intent to develop inter-mural networks specifically oriented to bicycle access to view points or as an experiential amenity in itself.²³ The advantage Bryce Canyon has is its position as one of a network of Grand Circle parks that offers an opportunity for extra-mural bicycle networks, similar to the existing bicycle trail that connects Red Canyon and Bryce Canyon. A bicycle service station would not only benefit Bryce Canyon, but may serve as a model for other national parks. A unique opportunity exists to utilize all the former Utah Parks Company Service Stations designed by the San Francisco architectural firm of Eldridge T. Spencer, W. Clement Ambrose, Wesley A. Talley, Alton S. Lee Associated Architects whose modern design marked a change in service amenities.²⁴

The rehabilitation of the Utah Parks Company Service Station into a bicycle rental facility is an appropriate adaptive use of the building. This new use maintains the transportation theme of the building's original intent, but is now able to showcase the Park's emerging program of sustainable transportation systems in both interpretive exhibits and in the programmatic use of the building itself.

Design Program Phase I - Bicycle Comfort Station

The simplicity of this building's design and lack of operating equipment, lends itself to a passive use without the need for permanent staffing. Such is the reason that it continues to be used as a restroom facility for the interpretive trail rides concessioner and other visitors in that area of the park. This phase of rehabilitation seeks to extend its current use as a comfort station to accommodate more specific needs of the bicyclist, while providing an opportunity to provide a venue for an exhibit on the history of transportation in national parks.

²⁰ <http://www.nps.gov/ncrc/programs/rtca>

²¹ <http://epw.senate.gov/105th/ferrell.htm>

²² http://www.senatordeanskelos.org/press_archive_story.asp?id=1210

²³ Southern Arizona's Chiricahua National Monument, for example, wants to exploit its status as a historic designed landscape by accommodating different modes of transportation to better experience the features, including roadways, that were designed to intentionally frame or interpret the natural landscape.

²⁴ The 2003 General Management Plan for Grand Canyon National Park proposed the rehabilitation of their UPC Service Station as a bike rental facility. Their service station, currently leased to concessioner Xanterra, continues to be used as a gas service station.

The proposed exhibit, consisting of 3 double-side panels, should include the role of Bryce Canyon in Grand Circle Tour and the introduction of automobile service stations, such as the Utah Parks Company Service Station (and its emerging rehabilitation). This exhibit would also be an opportunity for visitors to be introduced to new park objectives aimed at sustainable transportation systems, including bicycles, at Bryce Canyon and other national parks. This exhibit would be located in the Repair Shop, but should not be attached to any of the wall surfaces, most of which are identified as character defining features of this room. The exhibit panels may either be self-supporting or suspended from the ceiling joists, but should be laid out in such a manner as to enable the visitor to view the expanse of the stone wall and the chevron-patterned wood paneled walls. In addition to exhibit panels, appropriate seating should be installed in the Repair Shop to allow a relaxed opportunity to view the exhibit and to rest.

This phase of the Service Station rehabilitation should also introduce minimal services for visitors, but with specific attention to bicylists. This includes vending machines containing water, energy drinks, energy bars, first aid supplies and bicycle accessories. This is also an appropriate venue for the display and distribution of maps, park brochures and bicycle-oriented information about the park. The vending machines should most appropriately be placed on the south wall of the Repair Shop where they won't take away from the distinctive wood paneling. The automobile lift in the Repair Shop should also be interpreted, but at the very least, made less of a life-safety risk. The Sales Office could also be used as a display area and distribution area for maps, brochures and other complimentary information. The compressed air system should be made operational for distribution at the Pump Island, and may require upgrading based on the operability of the current system. The Utility Room would continue to function as a storage area for the park and the Service Station while the graffiti-covered cabinets should be left until they can be properly interpreted, perhaps in Phase II. The door between the Utility Room and the Repair Shop should be upgraded to include a dead-bolt lock.

The parking area should be dedicated to pedestrians and cyclists with automobile parking relegated to the area immediately adjacent to the road, demarcated by the placement of benches, chairs and even tables. With the exception of the proposed outdoor furniture and bicycle racks, no vending machines or other intrusive items should be placed in the parking area to distract from the view of the building's exterior character defining features.

Design Program Phase II – Bicycle Service Station²⁵

Due to the relatively simple needs of a full-service bicycle rental facility and the parallel programmatic space requirements, the rehabilitation of the existing Service Station will require little change to the spatial composition of the existing building. Typically, bicycle rental facilities should consist of a storage area to house the bicycles when they are not in use, a workshop area (150 sq. ft. min.) to perform bicycle repairs, and a suitable rental sales area. The repair area should be located adjacent to the storage room and rental sales area to permit immediate inspection of the vehicles upon their return. There should also be suitable space for an attractive outside display of the bicycles to stimulate impulse rentals. In addition to bicycle rental and

²⁵ For information on bicycle rental vendors that cater to similar clientele, see Zion National Park (<http://www.utah.com/bike/trails/zion.htm>), Yellowstone National Park, (<http://www.frommers.com/destinations/yellowstonenationalpark/0809010020.html>), Vail Colorado (www.vailbiketech.com), Steamboat, Colorado (<http://www.steamboat.com/summer-int.aspx?CategoryId=551>), and there is even a bicycle tour company, Springdale Cycle Tours, that advertises a seven-day bicycling tour through southern Utah including four national parks, and two national monuments (<http://www.bicyclingworld.com/templates/itinerary.aspx?rqTourID=1114>).

repair services, a variety of merchandise could be displayed for sale oriented to the bicyclist, including gloves, helmets, sunscreen, hats, and socks.²⁶

In this phase, the Repair Shop would become an open shop with the area next to the window wall for rental bicycle storage/display, the area adjacent to the Utility Room would be dedicated for repair and the transportation exhibit would be consolidated and moved to an area between the bicycle repair area and the Sales Office. To the best degree possible, the stone wall and the paneled wood wall, as character defining features, should not have items hung from them. If there is a need for the storage of large merchandise that might act as props, such as tubes, tires and wheels, they should be suspended from the ceiling, creating an ambiance very much like it was as an automobile service station. The automobile lift could also be creatively utilized as a bicycle repair stand with armatures attached to each of the lift's legs. The merchandise vending machines would be replaced with merchandise displays in the Sales Office and attended by the staff dedicated to rental sales. Energy drinks and snacks would also be available from the sales attendant from refrigerated cases in the Repair Shop. The Sales Office would be utilized to accommodate the display of merchandise as well as a cashiers counter between the Sales Office and the Repair Shop (as it was historically). The Utility Room would continue to be used for storage of bicycle parts, service equipment, and merchandise. As in Phase I, the parking area should be dedicated to pedestrians and cyclists with automobile parking relegated to the area immediately adjacent to the road, demarcated by the placement of benches, chairs and even tables.

²⁶ Jerrell, Temple R. Bikeways : Design, Construction, Programs. Arlington, VA: National Recreation and Park Association, 1974.

REQUIREMENTS AND ALTERNATIVES FOR TREATMENT

To clarify the presentation of treatment recommendations, this section combines two sections described in the Cultural Resource Management Guideline (NPS-28), *Requirements for Treatment* and *Alternatives for Treatment*. This section presents and evaluates alternative approaches to realize the ultimate treatment recommendations outlined in the previous section. This includes detailed and illustrated recommendations that address compliance with historic preservation laws, impact on the building's historic character and materials, life safety, fire protection, handicapped accessibility, and management practices based on the proposed future use. This section also presents the Project Team's recommended course of action as part of the discussion of alternative preservation treatments.

To accommodate the proposed new use as a bicycle service station, the ultimate treatment of the Utah Parks Company Service Station is a rehabilitation project that includes three primary components:

1. Preservation and repair of the building's character defining features, especially the planar roof forms and related areas affected by water drainage from the roof;
2. Restoration of the building's character defining features and materials that have been damaged due to deterioration or lack of maintenance, especially the stone wall, exterior and interior wood paneling, and windows/doors.
3. Rehabilitation of the building's interior and exterior spaces and facilities to comply with current building, life safety and accessibility codes and to accommodate the programmatic needs of the proposed new use.

These components also outline a natural hierarchy of treatment that should be used to establish priorities in the implementation of the proposed new use should funding for the entire project be spread over several budgetary cycles. Few of the individual treatment recommendations below can be considered in isolation and because they are inter-related, practical considerations of logistics and economy of scale will make it necessary to combine elements from the different treatment components in different ways to accomplish the final product. In addition, as the proposed use is phased to assess visitor interest in bicycle services in the park, the descriptions of ultimate preservation treatments reflect the appropriate priority status determined in the Building Description and Condition Assessment above as applied to each of these phases.

The treatment recommendations outlined below are intended to be a summary of the critical and serious priority treatments. Refer to the condition assessment tables in the *Physical Description* section for a comprehensive list of deficiencies, treatment recommendations and priority status.

Phase I Treatments - Preservation

The first component of ultimate treatment seeks to repair the existing roof through the implementation of a Proposed Drainage Plan. As documented in Section One above, the existing planar roof system does not properly drain water off the roof, away from the building, and off the site. This causes damage to the stone wall, fascia elements, and base paneling at the ground level, all character defining features of the building.

Design options that combine the preservation of the integrity of the planar roof form as a character defining feature and the preservation of the physical building materials affected by improper water drainage include:

- 1). A *perimeter drip edge system* that continues to allow the roof water to be directed away from the stone wall and toward the roof perimeter as it currently does; or
- 2). A *centralized roof drain(s)* to which the roof water is channeled and leader(s) integrated into an existing vertical support element that directs the water off the site.

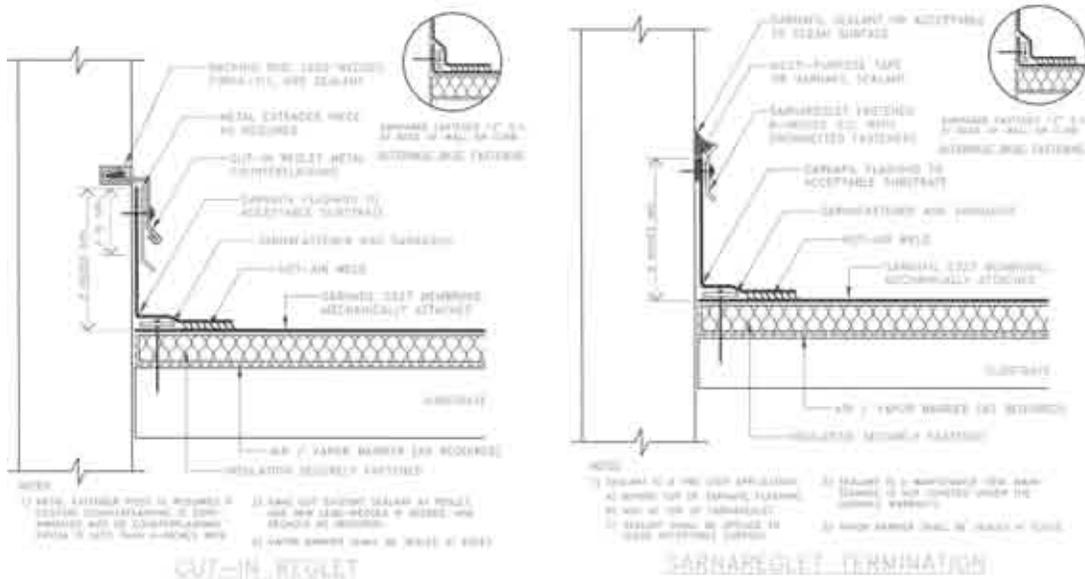


Figure 79 & Figure 80 – Detail drawings showing the connection between the stone wall and roof that will require the installation of either a reglet (left) or alternatively, a sarnareglet (right), as well as flashing and counterflashing. Roof details are based on drawings from Sarnafil Corporation.

In either option, the pitch of the roof surface will have to be modified to promote positive (intentional) drainage patterns to prevent the ponding that currently exists due to uneven roof surfaces (i.e. crowned for the peripheral drip edge system and channeled for the centralized roof drain system). In addition, the joint between the rear stone wall and the structural roof members at the parapet will require a new system that includes the installation of a reglet or sarnareglet,²⁷ and counter-flashing at the stone masonry wall (see drawings above). This report recommends the reglet, which will require cutting into the stone masonry parapet wall; a necessary treatment action that outweighs the severity of intervention on the stone wall. Another alternative for the stone wall is to install a metal drip cap over the entire width of the wall, but this is not recommended as it would compromise the visual appearance of the top of the wall. The location of the vertical conveyance of the water (leader/downspout) in centralized roof drain option poses a challenge in order to preserve the integrity of the original building design concept. In addition, either option would require the regrading of the site and particularly the ground surface adjacent to the building to promote the effective evacuation of the water away from the building and off the site to prevent the negative water drainage (toward the building) that currently exists.

²⁷ Reglet is defined as a groove or cut formed in a vertical surface to receive flashing; a sarnareglet secures the flashing with a nail or other fastener.

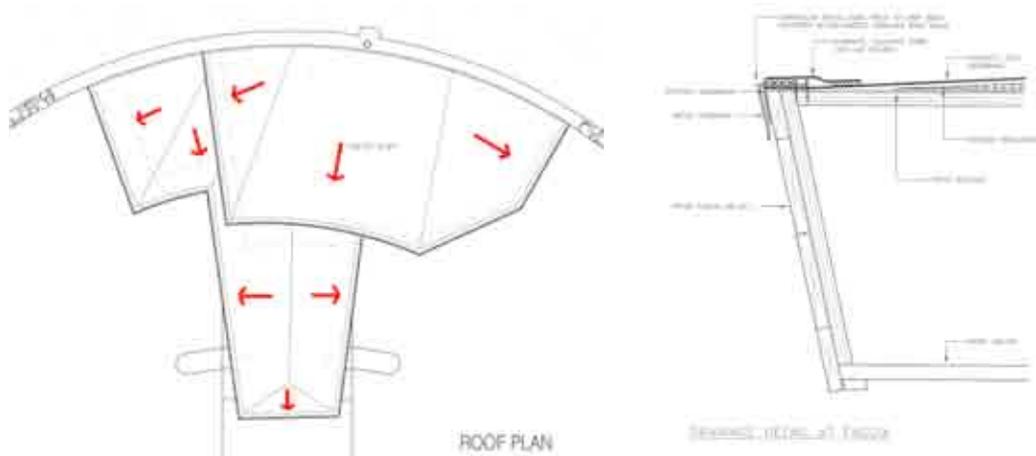


Figure 81 & Figure 82 – Peripheral drip edge system shown in the proposed roof plan (left) directing water to the periphery of the roof and a detail of the drip edge at the fascia (right).

The peripheral drip edge system (see drawings above) is the recommended option as it was the original intent of the architects’ design and would require the least intrusion on the building. This option would require the replacement of the existing drip edge and damaged fascia with the option of replacing the more maintenance-intensive wood fascia with a metal or composite material that would reflect the design of the existing wood members.

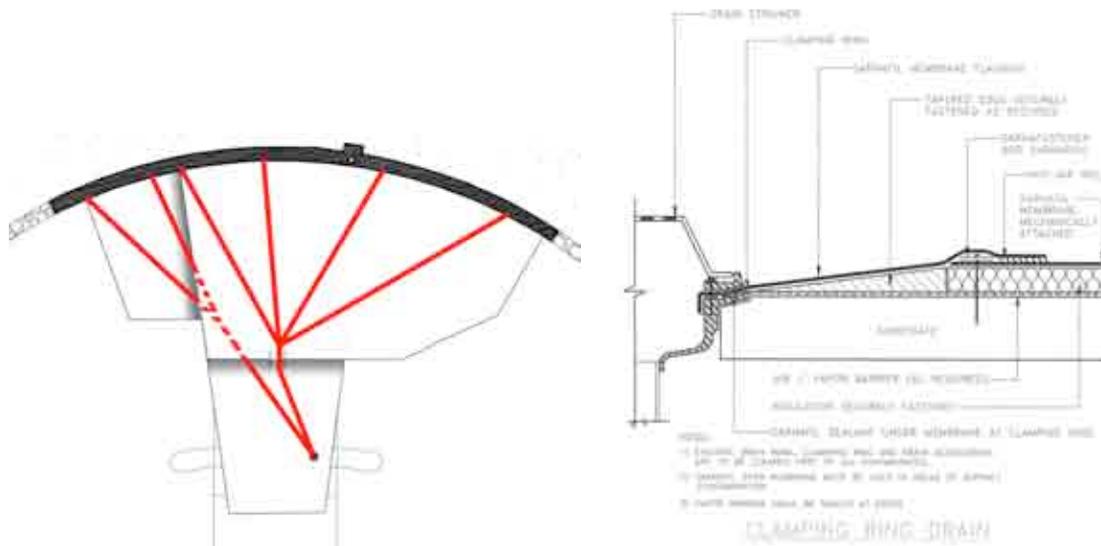


Figure 83 & Figure 84 – Centralized roof drain system shown in the proposed roof plan (left) channeling water to one or more roof drains (right) integrated into the existing roof form.

The centralized roof drain system (see drawings above) would require all the water to be channeled to one or two points on the roof. It would also require the penetration of the roof surface for a drain (always a potential for subsequent leakage). an appropriate place for the leader (downspout) would then need to be located to deliver the water from the roof to a location either inside one of the wood-frame exterior walls or other vertical support element (e.g. through the Pump Island support columns) in order not to compromise the visual quality of the historic building. Using the Pump Island support column to sleeve a leader poses a structural risk, as it

requires the bottom of the pipe column to be cut open to allow the leader to exit the roof water. Another option for a leader at the Pump Island canopy roof plane is to create a third, vertical, cylindrical pipe halfway between, and of equal diameter to, the Pump Island support columns that is dedicated only as a leader. It is not recommended that the leader simply be attached to the exterior of the building, as that would compromise the visual character of the building.

The advantage of the centralized roof drain system is that the water would move away from the drip edge thus relieving the potential for icicles to drip from fascia that is a current safety hazard. A combination of a slightly raised, and restored, peripheral drip edge system that moves water toward a minor depression in the plane of the roof, using foam insulation as the contour, and the centralized roof drain system would allow both systems to work as an integrated system when large quantities of water need to be evacuated from the roof.

Regardless of the selected water drainage system, the following preservation treatments will be required in Phase One:

Roof

- Remove all existing roof covering, inspect condition of underlying wood deck, and make appropriate repairs.
- Determine optimal new water drainage system (e.g. peripheral gutter or centralized roof drain), provide positive drainage with tapered insulation on roof deck to direct water to intended drainage points.
- Apply a heat-welded thermoplastic roof membrane.
- Install a reglet (or alternate) and counter-flashing at the stone masonry wall.

Site

- Remove existing asphalt paving surrounding the building, leaving the concrete apron surrounding the pump island.
- Remove concrete barricades and replace with outdoor seating to act as a visually more appealing barricade.
- Inspect the building's foundation and make necessary repairs; insert moisture barrier at wall footings during new site grading.
- Evaluate infestation and existing damage to wood elements on building interior, consult pest control specialist for treatment options, and replace any structural members damaged beyond repair.
- After the asphalt has been removed, determine presence of the waste oil and Blazo tanks underground at the north end of the building (there is no existing documentation). If tank is still present, consult with Utah Department of Environmental Quality to determine its appropriate disposal. Maintain waste oil disposal area in Repair Shop for its association with the system's historic use.
- Regrade site to provide positive drainage away from the building and off the site.

-Apply decomposed granite (or alternate appropriate for cyclists) as ground covering.

Phase I Treatments - Restoration

The second component of ultimate treatment seeks to return the building to its historic appearance after its completion in 1947.

-Repoint identified cracks in the stone wall and install crack monitors to measuring any subsequent movement that might indicate more serious structural deficiencies than those identified in this report.

- Replace wood fascia and exterior horizontal siding as necessary due to water damage (fascia throughout building may be replaced if above peripheral gutter drainage system is implemented).

-Remove paint (and abate identified areas of lead paint) and repaint exterior and interior painted wood elements.

-Remove the workbench (covered in lead paint) and attached structure in the Repair Shop to provide an unobstructed view of the stone wall.

- Remove wall heater in Sales Office.

-Repair garage door in Repair Shop to make operational.

-Restore compressed air system for use by cyclists.

-Restore automobile lift as an interactive, interpretive feature in the exhibit as long as it is not a safety liability.

- Clean concrete floors of oil stains (some patina is desirable), fill in cracks in slab, and seal floor in Repair Shop, and Sales Office.

Phase I Treatments - Rehabilitation

The final component of ultimate treatment seeks to make improvements and/or alterations that would increase the building's utility to park visitors, staff and others who use the building. In this treatment, care should always be taken to not violate the character of the significant architectural features of the building, e.g. not to mount exhibit panels on stone wall or chevron-patterned wood paneling, but rather suspended from roof joists or free-standing exhibit panels allowing the building features to be part of the exhibit itself. Similarly, vending machines should not be located in front of any character defining features, including the entire exterior façade, but should be located on the interior walls that are not sheathed with chevron-patterned wood paneling.

-Handicapped accessibility must be maintained in any modifications done to the building maintaining access through either the main Sales Office door or the Repair Shop garage door as primary entrances. The bathrooms can not be ADA-compliant without compromising the architectural integrity of the building; it is recommended that Park orientation tools (maps, signage, etc.) clearly indicate the location of alternate ADA-compliant restrooms.

-Install bike racks in current parking area next to the restrooms.

Phase II Treatments – Restoration

- Clean the efflorescence and biological growth from the stone wall and maintain regular cleaning schedule as needed.
- Repair concrete slab and foundations.
- Remove tar and insulating foam from previous attempts to repair roof connection at stone wall.
- Replace those structural wood members severely affected by water damage at roof.

Phase II Treatments – Rehabilitation

- Upgrade electrical and water systems throughout building to accommodate electrical requirements for the proposed new use.
- Replace existing fluorescent lights with suspended halogen lighting in public spaces making a distinct contrast between the historic incandescent ambient lighting and the focused exhibit and task lighting required for the proposed new use.
- Provide portable space heaters for concessioner personnel.
- Rehabilitate the Sales Office, Repair Shop and Utility Room to accommodate equipment and workstation needs of bicycle concessioner and in compliance with ADA standards.
- Install building security system.

Additional Requirements for Treatment

Legal mandates and policy directives circumscribe treatment of the Utah Parks Company Service Station. The National Park Service’s Cultural Resource Management Guideline (NPS-28) requires planning for the protection of cultural resources “whether or not they related to the specific authorizing legislation or interpretive programs of the parks in which they lie.” Therefore the Service Station must be understood in its own cultural context and managed in light of its own values so that it may be preserved unimpaired for the enjoyment of present and future generations.²⁸

Section 106 of the National Historic Preservation Act (NHPA) also mandates that federal agencies, including the National Park Service, take into account the effects of their actions on properties listed or eligible for listing on the National Register of Historic Places and give the Advisory Council on Historic Preservation a reasonable opportunity to comment.²⁹

²⁸ Available online, http://www.cr.nps.gov/history/online_books/nps28/28contents.htm.

²⁹ Available online, <http://www.cr.nps.gov/hps/laws/NHPA1966.htm>

In addition to the above statutes and regulations, preservation efforts should follow the Secretary of Interior's Standards for the Treatment of Historic Properties, along with guidelines for applying those standards.³⁰

Due to the relatively simple nature of this building, this report does not recommend the installation of a comprehensive fire suppression system, but rather the installation and scheduled maintenance of fire extinguishers in all public rooms. For similar reasons, there is no recommendation for the installation of a centralized HVAC system, but rather the use of portable space heaters (once the building's entire electrical system is upgraded), as this building is intended to only be open seasonally.

Treatments that address structural concerns must comply to the requirements of the following codes and standards:

- International Building Code 2003 (IBC-2003)
- Minimum Design Loads for Buildings and Other Structures (ASCE 7-98)
- Seismic Evaluation of Existing Buildings 2003 (ASCE 03-031)
- Manual of Steel Construction, AISC, 9th Edition
- National Design Specification for Wood Construction (NDS-2005)

Treatments that address handicapped accessibility must comply to:

- Americans with Disabilities Act of 1990 (42 USC 12101, Title III)³¹

³⁰ Available online, <http://www.cr.nps.gov/hps/tps/standguide/index.htm>. Standards and guidelines for rehabilitation treatment are included in Appendix B.

³¹ For design guidelines applying the ADA code requirements for new and existing buildings, refer to the Americans with Disabilities Act Accessibility Guidelines (ADAAG) Manual.

COST ESTIMATE

The following Class C Cost Estimate was produced by the team of *Compusult* and *Ralph Comey, Architects*, Tucson Arizona. Their estimates are based on the information and recommendations presented in this Historic Structure Report. It should be noted that because the cost estimators were unable to directly inspect the facility premises, some estimates were estimated higher to anticipate variables that were not evident to the cost estimators (e.g. the electrical system, items 83-87).

Compusult/Ralph Comey - Class C Estimate

Estimate By: Compusult

Date: 11/22/05

Historic Structure Report
Utah Parks Company Service Station
Bryce Canyon National Park

Reviewed By: RC

Date: 11/22/05

Estimate is based on 2005 Costs

Item	Description	Qty.	Unit	Cost/Unit	Net Cost
1	Site				
2	Remove AC Paving	1,333	SY	\$ 4.25	\$ 5,665
3	Haul/Dispose of AC	110	LCY	\$ 35.00	\$ 3,850
4	Regrade Drive	1,333	SY	\$ 3.25	\$ 4,332
5	Regrade Site	2,166	SY	\$ 3.00	\$ 6,498
6	Excavate @ Stone Wall	1	LS	\$ 500.00	\$ 500
7	Haul/Dispose Soil	175	LCY	\$ 25.00	\$ 4,375
8	Install Footing Drain	125	LF	\$ 5.50	\$ 688
9	Dampproof Foundation	780	SF	\$ 1.50	\$ 1,170
10	Backfill w/ Gravel	9	LCY	\$ 45.00	\$ 405
11	Decomposed Granite Drive	1,333	SY	\$ 5.85	\$ 7,798
12	Trench for Foundation Drain	1	LS	\$ 500.00	\$ 500
13	Backfill for Foundation Drain	1	LS	\$ 500.00	\$ 500
14	Termite Treatment @ Building	1	EA	\$ 1,500.00	\$ 1,500
15	Exterior Walls				
16	Repair Slab @ Entrance, Garage Dr. & Pump	400	SF	\$ 7.50	\$ 3,000
17	Scrape & Paint Wood Siding	410	SF	\$ 1.50	\$ 615
18	Scrape & Paint Small Window	4	EA	\$ 50.00	\$ 200
19	Repair & Paint Window Door Unit	5	EA	\$ 500.00	\$ 2,500
20	Scrape & Paint Wood Door	2	EA	\$ 150.00	\$ 300
21	Repoint Stone Wall	936	SF	\$ 2.45	\$ 2,293
22	Repair Cracks @ Stone Wall	150	LF	\$ 5.00	\$ 750
23	Repoint Other Site Walls	150	SF	\$ 2.45	\$ 368
24	Roof				
25	Remove Roofing	2,155	SF	\$ 0.55	\$ 1,185
26	Level Roof w/ Compound	400	SF	\$ 5.00	\$ 2,000
27	Install 3/4" Fiberglass Insulation	2,155	SF	\$ 0.95	\$ 2,047
28	Install Single Ply Roofing	2,155	SF	\$ 3.50	\$ 7,543
29	Install 16 oz. Copper Flashing	110	LF	\$ 10.00	\$ 1,100
30	Repair & Paint Fascia	162	SF	\$ 5.00	\$ 810
31	Install 1x3 Wood Edges	162	LF	\$ 2.00	\$ 324
32	Install 16 oz. Copper Edge	162	LF	\$ 4.00	\$ 648

33	Remove Sheathing	774	SF	\$ 0.80	\$ 619
34	Replace Sheathing	774	SF	\$ 1.15	\$ 890
35	Remove Soffit	774	SF	\$ 2.00	\$ 1,548
36	Replace Soffit	774	SF	\$ 3.00	\$ 2,322
37	Remove Wood Ceiling Office	143	SF	\$ 3.00	\$ 429
38	Replace Wood Ceiling Office	143	SF	\$ 4.50	\$ 644
39	Double Wood Joists @ Building	825	LF	\$ 5.00	\$ 4,125
40	Add 2 Steel Beams @ Island Roof	68	LF	\$ 90.00	\$ 6,120
41	Add Wood @ Island Roof	40	LF	\$ 10.00	\$ 400
42	Sand & Restain Wood Soffits	920	SF	\$ 1.50	\$ 1,380
43	Sand & Restain Wood Ceilings	143	SF	\$ 1.75	\$ 250
44	Paint Toilet Ceilings	175	SF	\$ 1.15	\$ 201
45	Install Snow Melt @ Roof	1	LS	\$ 1,500.00	\$ 1,500
46	Interiors				
47	Restrooms				
48	Replace Door Hardware	2	EA	\$ 250.00	\$ 500
49	Scrape & Paint Door	70	SF	\$ 3.00	\$ 210
50	Paint GWB Ceiling	175	SF	\$ 2.00	\$ 350
51	Clean, Stain Walls & Toilet Partitions	965	SF	\$ 2.50	\$ 2,413
52	Clean & Paint Concrete Floor	175	SF	\$ 2.75	\$ 481
53	Sales Office				
54	Clean & Stain Walls & Ceiling	215	SF	\$ 2.75	\$ 591
55	Clean & Stain Shelving	1	LS	\$ 400.00	\$ 400
56	Scrape & Paint Doors & Windows	84	SF	\$ 3.00	\$ 252
57	Replace Door Hardware	2	EA	\$ 250.00	\$ 500
58	Clean & Paint Concrete Floor	160	SF	\$ 2.75	\$ 440
59	Utility Room				
60	Clean & Stain Wood Walls	430	SF	\$ 2.50	\$ 1,075
61	Clean & Stain Shelving	1	LS	\$ 400.00	\$ 400
62	Clean & Seal Concrete Floor	250	SF	\$ 2.50	\$ 625
63	Clean & Stain Wood Joists & Deck	250	SF	\$ 3.00	\$ 750
64	Scrape & Paint Door	42	SF	\$ 3.00	\$ 126
65	Replace Door Hardware	1	EA	\$ 250.00	\$ 250
66	Clean Stone Wall	1	LS	\$ 250.00	\$ 250
67	Repair Shop				
68	Clean & Stain Wood Walls	230	SF	\$ 2.50	\$ 575
69	Clean & Stain Wood Joists & Deck	550	SF	\$ 3.00	\$ 1,650
70	Repair Concrete Floor Cracks	1	LS	\$ 1,500.00	\$ 1,500
71	Clean & Seal Concrete Floor	550	SF	\$ 2.50	\$ 1,375
72	Remove Work Bench	1	LS	\$ 50.00	\$ 50
73	Clean Oil Pit	1	LS	\$ 500.00	\$ 500
74	Service, Repair Lift	1	LS	\$ 2,000.00	\$ 2,000
75	Clean Stone Wall	1	LS	\$ 300.00	\$ 300
76	Scrape & Paint Doors & Windows	3	EA	\$ 400.00	\$ 1,200
77	Plumbing				
78	Remove PVC Piping	1	LS	\$ 800.00	\$ 800
79	Install Type L Copper Piping	1	LS	\$ 2,500.00	\$ 2,500
80	HVAC				
81	Install Electric Unit Heater	3	EA	\$ 350.00	\$ 1,050
82	Electric				
83	Remove Electric Service	1	EA	\$ 5,000.00	\$ 5,000

84	Reinstall Service on Pole	1	EA	\$ 10,000.00	\$ 10,000
85	Run Service Underground	1	EA	\$ 4,000.00	\$ 4,000
86	Rewire for Grounded System	1	EA	\$ 20,000.00	\$ 20,000
87	New Fluorescent Fixtures	1	EA	\$ 10,500.00	\$ 10,500
88	Compress Air System				
89	Check/Repair/Replace Existing Air Compressor	1	EA	\$ 760.00	\$ 760
	Subtotal Direct Construction Costs				\$ 157,265
	Park Location Factor 23%				\$ 36,200
	Design Contingency 20%				\$ 39,000
	Total Direct Construction Costs				\$ 232,000
	General Conditions 15%				\$ 34,800
	Overhead and Profit 15%				\$ 40,000
	Tax 4.55%				\$ 14,000
	TOTAL Estimated Cost of Construction				\$ 321,000

APPENDICES

APPENDIX A EVALUATION METHODS

This Historic Structure Report is based on established methods for the evaluation and assessment of historic buildings as codified in the National Park Service's Cultural Resource Management Guideline.³² It provides a systematic inventory of all the building systems, features, materials and spaces according to significance, condition and priority to objectively determine the appropriate preservation treatment.

Significance is defined as a feature's association with the historical themes often articulated in the National Register of Historic Places nomination. Significance is exemplified in the character defining features and evaluated as High, Medium, or Low based on the theme's relationship to the original construction, a defined period of significance, or subsequent to the period of significance.

Condition is defined with an eye for threats to the resource, modifications, and character-defining attributes and evaluated as Good, Fair or Poor. Good is assessed when the feature is intact, structurally sound and performing its intended purpose; the feature needs no repair and only minor or routine maintenance. Fair is assessed when there are signs of wear, failure or deterioration, although the feature is generally structurally sound and performing its intended purpose. Poor is assessed when the feature is no longer performing its intended purpose, the feature is missing or there is severe deterioration or failure; the feature requires major repair or replacement.

Priority is defined as the urgency for repair or other preservation treatments and is evaluated as Critical, Serious or Minor based on a). the amount of time likely before that feature will fail; b). the present danger to life safety; and c). conformance with current requirements of regulatory agencies and codes. Critical priority is when a feature requires immediate attention (within two years) based on threats to structural integrity or conformance with life safety code requirements regardless of future use. Serious priority is when a feature requires preservation treatment within five years to maintain architectural integrity based on the building's character-defined features. Minor priority is when a feature requires preservation treatment with a long-term impact (beyond five years), for any future use in conformance with code requirements and programmatic needs.

³² Available online, http://www.cr.nps.gov/history/online_books/nps28/28contents.htm. Historic Structures Reports are presented in Chapter 8

APPENDIX B
SECRETARY OF THE INTERIOR STANDARDS FOR REHABILITATION AND GUIDELINES FOR
REHABILITATION³³

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.

Standards for Rehabilitation

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
10. New additions and adjacent or related new construction will be undertaken in a such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

³³ National Park Service, Secretary of the Interior's Standards for the Treatment of Historic Properties, <http://www.cr.nps.gov/hps/tps/standguide/index.htm>

Guidelines for Rehabilitation

In Rehabilitation, historic building materials and character-defining features are protected and maintained as they are in the treatment Preservation; however, an assumption is made prior to work that existing historic fabric has become damaged or deteriorated over time and, as a result, more repair and replacement will be required. Thus, latitude is given in the Standards for Rehabilitation and Guidelines for Rehabilitation to replace extensively deteriorated, damaged, or missing features using either traditional or substitute materials. Of the four treatments, only Rehabilitation includes an opportunity to make possible an efficient contemporary use through alterations and additions.

Identify, Retain, and Preserve Historic Materials and Features

Like Preservation, guidance for the treatment Rehabilitation begins with recommendations to identify the form and detailing of those architectural materials and features that are important in defining the building's historic character and which must be retained in order to preserve that character. Therefore, guidance on *identifying, retaining, and preserving* character-defining features is always given first. The character of a historic building may be defined by the form and detailing of exterior materials, such as masonry, wood, and metal; exterior features, such as roofs, porches, and windows; interior materials, such as plaster and paint; and interior features, such as moldings and stairways, room configuration and spatial relationships, as well as structural and mechanical systems.

Protect and Maintain Historic Materials and Features

After identifying those materials and features that are important and must be retained in the process of Rehabilitation work, then *protecting and maintaining* them are addressed. Protection generally involves the least degree of intervention and is preparatory to other work. For example, protection includes the maintenance of historic material through treatments such as rust removal, caulking, limited paint removal, and re-application of protective coatings; the cyclical cleaning of roof gutter systems; or installation of fencing, alarm systems and other temporary protective measures. Although a historic building will usually require more extensive work, an overall evaluation of its physical condition should always begin at this level.

Repair Historic Materials and Features

Next, when the physical condition of character-defining materials and features warrants additional work *repairing* is recommended. Rehabilitation guidance for the repair of historic materials such as masonry, wood, and architectural metals again begins with the least degree of intervention possible such as patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading them according to recognized preservation methods. Repairing also includes the limited replacement in kind--or with compatible substitute material--of extensively deteriorated or missing parts of features when there are surviving prototypes (for example, brackets, dentils, steps, plaster, or portions of slate or tile roofing). Although using the same kind of material is always the preferred option, substitute material is acceptable if the form and design as well as the substitute material itself convey the visual appearance of the remaining parts of the feature and finish.

Replace Deteriorated Historic Materials and Features

Following repair in the hierarchy, Rehabilitation guidance is provided for *replacing* an entire character-defining feature with new material because the level of deterioration or damage of materials precludes repair (for example, an exterior cornice; an interior staircase; or a complete porch or storefront). If the essential form and detailing are still evident so that the physical evidence can be used to re-establish the feature as an integral part of the rehabilitation, then its replacement is appropriate. Like the guidance for repair, the preferred option is always

replacement of the entire feature in kind, that is, with the same material. Because this approach may not always be technically or economically feasible, provisions are made to consider the use of a compatible substitute material. It should be noted that, while the National Park Service guidelines recommend the replacement of an entire character-defining feature that is extensively deteriorated, they never recommend removal and replacement with new material of a feature that--although damaged or deteriorated--could reasonably be repaired and thus preserved.

Design for the Replacement of Missing Historic Features

When an entire interior or exterior feature is missing (for example, an entrance, or cast iron facade; or a principal staircase), it no longer plays a role in physically defining the historic character of the building unless it can be accurately recovered in form and detailing through the process of carefully documenting the historical appearance. Although accepting the loss is one possibility, where an important architectural feature is missing, its replacement is always recommended in the Rehabilitation guidelines as the first or preferred, course of action. Thus, if adequate historical, pictorial, and physical documentation exists so that the feature may be accurately reproduced, and if it is desirable to re-establish the feature as part of the building's historical appearance, then designing and constructing a new feature based on such information is appropriate. However, a second acceptable option for the replacement feature is a new design that is compatible with the remaining character-defining features of the historic building. The new design should always take into account the size, scale, and material of the historic building itself and, most importantly, should be clearly differentiated so that a false historical appearance is not created.

Alterations/Additions for the New Use

Some exterior and interior alterations to a historic building are generally needed to assure its continued use, but it is most important that such alterations do not radically change, obscure, or destroy character-defining spaces, materials, features, or finishes. Alterations may include providing additional parking space on an existing historic building site; cutting new entrances or windows on secondary elevations; inserting an additional floor; installing an entirely new mechanical system; or creating an atrium or light well. Alteration may also include the selective removal of buildings or other features of the environment or building site that are intrusive and therefore detract from the overall historic character. The construction of an exterior addition to a historic building may seem to be essential for the new use, but it is emphasized in the Rehabilitation guidelines that such new additions should be avoided, if possible, and considered only after it is determined that those needs cannot be met by altering secondary, i.e., non character-defining interior spaces. If, after a thorough evaluation of interior solutions, an exterior addition is still judged to be the only viable alternative, it should be designed and constructed to be clearly differentiated from the historic building and so that the character-defining features are not radically changed, obscured, damaged, or destroyed. Additions and alterations to historic buildings are referenced within specific sections of the Rehabilitation guidelines such as Site, Roofs, Structural Systems, etc., but are addressed in detail in New Additions to Historic Buildings.

Energy Efficiency/Accessibility Considerations/Health and Safety Code Considerations

These sections of the guidance address work done to meet accessibility requirements and health and safety code requirements; or retrofitting measures to improve energy efficiency. Although this work is quite often an important aspect of Rehabilitation projects, it is usually not a part of the overall process of protecting or repairing character-defining features; rather, such work is assessed for its potential negative impact on the building's historic character. For this reason, particular care must be taken not to radically change, obscure, damage, or destroy character-defining materials or features in the process of meeting code and energy requirements.

**APPENDIX C
MATERIALS ANALYSIS**

The Project Team had access to analytical equipment housed in the Arizona State Museum Conservation Lab at the University of Arizona under the direction of Dr. Nancy Odegaard. This provided an educational opportunity to select a few samples of paint from the UPC Service Station for characterization in the Conservation Lab. The goal was to determine whether there was lead (Pb) present in any of these paint samples.

Samples were collected at the UPC Service Station on March 15, 2005 from the interior and exterior. Only paint chips that had become detached from the surface due to weathering or excess moisture were collected. The samples were returned to the Conservation Lab and were tested by Melissa Huber on April 22, 2005 utilizing X-ray Fluorescence Spectrometry (XRF). XRF testing was conducted using a NITON Xli-700 Spectrum Analyzer with the cadmium source in the thin film, 25-mm-filter mode. Readings were taken for the duration of 60 seconds.

Results

Reading No	Sample Description	Sr	Rb	Pb	Zn	Cu	Ni	Fe	Mn	Ti
479	Sample #1 - Blue paint, workbench	1	0	28	5	20	3	16	0	92
481	Sample #2 - Brown paint, interior	8	1	7	16	0	5	514	0	18
482	Sample #3 - Brown paint, exterior	3	0	43	76	0	5	720	9	135
484	Sample #4 - White paint, exterior	0	0	0	0	0	3	11	0	506

Sample #1 – Blue paint from workbench in Repair Shop; **Testing indicates the presence of lead.**

Sample #2 – Brown paint from north wall of Repair Shop, interior; **Testing indicates the presence of lead.**

Sample #3 – Brown paint from north wall, exterior; **Testing indicates the presence of lead.**

Sample #4 – White paint from east wall windowsill, exterior; Testing does not indicate the presence of lead.

Bryce Canyon National Park records and visual inspection of the samples suggests that multiple layers of paint have been applied to the workbench and possibly to the walls and trim. The XRF analyzer would detect the presence of lead in any of these layers, including those below the surface. The interpretation of the data as it is presented here does not specify which of the layers contains lead, but states when there is lead present anywhere in the sample.

Recommendations

The Project Team is not qualified to comment on potential human health risks or mandates for removal. Outside consultation should be sought to determine recommendations for mitigation and/or abatement.

APPENDIX D
DOCUMENTATION PHOTOGRAPHS

Photographic documentation used to illustrate this report was done using digital photography and incorporated into the text. These digital images are included on the CD with the electronic version of this report. To comply with the archival standards specified in the project scope of work, 35mm black & white photographs were also used to document the historic structure but with more of an emphasis on the comprehensive documentation of building elevations, interior and exterior, and not specific individual features or deficiencies as was done with digital photography.

Appended to this report³⁴ is a three-ring binder containing the labeled, black & white photographs, the negatives (both in clear archival sleeves), and a photo log as requested in the specifications of the project scope of work.

³⁴ Only those identified in the project scope of work will receive copies of the black & white documentation photographs.

APPENDIX E
DOCUMENTATION ARCHITECTURAL DRAWINGS

There are two sets of architectural drawings in this section: 1) Original, primarily schematic, drawings of the Utah Parks Company Service Station located in the Bryce Canyon National Park archives as part of the HS-117 building file; and 2) Documentation drawings constructed in AutoCAD using the original plans as a baseline for building shape, dimensions and feature locations. The documentation drawings were then field-verified to document existing conditions and used as reference drawings for the physical description, condition assessment, and recommended preservation treatments outlined in the previous sections.

Subsequent to this page are 11” x 17” reproductions³⁵ of the following drawings:

Original Site Plan

Original Floor Plan and Elevations

Original Floor Plan (construction drawing)

Documentation Site Plan

Documentation Floor Plan

Documentation Roof Plan (with existing drainage patterns)

Documentation Systems Plan

Documentation Elevations (East, South and North)

Documentation Sections

³⁵ The submittal set of documentation drawings is printed on mylar to comply with archival standards specified in the project scope of work.