

Mammoth Hot Springs Hotel Phase II Guest Wing Seismic Stabilization and Rehabilitation

Overall Project Description

Project Description

The Mammoth Hot Springs Hotel Seismic Stabilization and Rehabilitation Project Phase II proposes to rehabilitate the 1913 guest wing of the building, including preservation, repair, and/or replacement of the character defining features of the wing, which will require the removal and replacement-in-kind of certain walls, floors, ceilings, and roof areas. The structural seismic system will be upgraded for lateral shear and moment frames will be installed. The structural improvements will accommodate anticipated snow loads.

The proposed project includes the rehabilitation of guest rooms including adding bathrooms to each room (thereby eliminating community bathrooms in the hall) and combining some rooms to create suites. According to the 2015 Mammoth Hot Springs Hotel Historic Structures Report (2015 HSR), the guest wing had been previously rehabilitated in the 1970s to upgrade fire suppression and safety systems. In 2005-2012, the guest rooms were rehabilitated to add toilets and showers in some rooms that previously lacked baths and rehabilitate those bathrooms in rooms that had existing baths. Other work during between 2005-2012 included upgrades to the electrical system, plaster repair, application of new paint on the walls and the installation of new carpet in the rooms and corridors. Several of the rooms on the south end of the building were converted into guest suites. The current rehabilitation will add full bathrooms in every room and eliminate the public bathrooms and showers on each floor in the halls. This will be accomplished by reconfiguring the floor plan and reducing the number of guest rooms. The rehabilitated rooms would include some suites and semi-suites and ABAAS (Architectural Barriers Act Accessibility Standard) accessible rooms on each floor. A new entrance will be added on the west side of the Hotel to replace an enclosed modern (1997) stairwell that is used by the guests for access from and egress to the parking lot. The enclosed modern stairwell is not compatible with the design of the original Hotel and is not easily accessible. The project addresses egress requirements and improves accessibility by installing a new elevator. Finishes in the rooms (new sheetrock with a plaster finish on the walls and ceiling, carpeted floors, repair and/or replacement of existing trim) and bathrooms (tile, fixtures) will be upgraded. A new electrical system will be installed, including rewiring of the historic light fixtures, adding compatible new lighting to the rooms, additional emergency lighting and new distribution panels. New IT systems will be installed. A new hot water heating system will be installed with individual room controls. The room heating units and one pipe radiators will be replaced with an efficient two pipe thermostatic controlled system. The windows in each room will be replaced-in-kind for energy efficiency and passive ventilation. Insulation will be installed in the walls and ceilings for energy efficiency and reduction of sound transmission. The outdated fire detection and fire suppression systems will be replaced to meet NFPA Life Safety codes.

This work continues the work of the Phase I project. Phase I involved the structural and seismic stabilization of the primary, public portion of the hotel, which includes the Lobby, Porte Cochere, and Map Room areas of the hotel. Additionally, Phase I included replacement of obsolescent life, safety, mechanical and electrical systems and addresses ABAAS and egress deficiencies in public areas. Phase I also repurposed the historic office area on the second floor above the lobby as new ballroom/conference rooms. Phase I of the Mammoth Hotel Seismic Stabilization and Rehabilitation included the preservation and restoration of character-defining windows in primary elevations and public spaces including the lobby and map room. The guest wing systems will be tied into the new systems installed under the phase I work. The phase I work will be finished in September of 2017.

Justification

The Mammoth Hot Springs hotel is listed on the National Register of Historic Places as a primary contributing property within the Mammoth Hot Springs Historic District. More than three million visitors come to Yellowstone each year and over one million of these visitors come to the Mammoth Hot Springs area. The

Mammoth Hotel is located at the North Entrance to Yellowstone. The North Entrance is the only entrance open to automobiles year-round. As winter wolf viewing has become more popular with the public, this facility has seen a corresponding increase in winter use. The hotel has the capacity for over 335 guests to spend the night in both summer and winter. Additionally, thousands of day use visitors come to the Mammoth area as part of their visit to Yellowstone and visit the hotel lobby, gift shop, and map room. The building was occupied by Concessioner administrative staff offices and operational staff of approximately 100 for many years. The Concessionaire has moved their offices to the Haynes Studio building allowing the guest rooms and related spaces to be restored in the Hotel. The building has a ground level footprint of 18,845 square feet (sf). The total square footage for the building is 56,787 sf; the Guest Wing accounts for 43,420 sf. Currently there are 95 guest rooms serving 95,000 guests annually. With the addition of bathrooms and suites to the Hotel the rooms will be reduced to 79.

The Mammoth Hot Springs Hotel does not meet current seismic standards and is in danger of severe damage or possible collapse in the event of an earthquake resulting in massive injury or loss of life. This facility is located in Universal Building Code (UBC) seismic zone 4, the zone with the highest probability of damaging ground motion. While such zoning and associated design requirements did not exist at the time of its construction, a Rapid Visual Survey of the structure (based on FEMA 273-NEHRP Guidelines for Seismic Rehabilitation of Buildings) indicates that the lateral resisting elements of the building and Porte Cochere (shear walls and floor diaphragms) exceed the length-to-width ratios recommended by FEMA. In addition, there is an inadequate load path to the foundation since there are few or no shear members below the first floor. The short wood columns between the first floor and foundation lack adequate connections top and bottom that would provide resistance to lateral movement. While a detailed seismic analysis may reveal more deficiencies than were visually identified, these listed structural instabilities must be addressed. The first phase work has taken care of these problems in the Map Room, Lobby, Gift Shop, Porte-cochere, and areas on the second floor above those spaces. The work will continue into the guest wing.

The seismic work will open wall, floor and roof areas that will allow access for other building systems to be inserted into the walls. The infrastructure of this historic building has exceeded its useful life and replacement components are obsolete. This project will correct electrical, mechanical, seismic, thermal, fire/life/safety, and ABAAS deficiencies in the Guest Room areas. The knob and tube wiring is obsolete, has been difficult to maintain, and has been inappropriately modified to meet visitor needs. The existing electrical system including wiring modifications and historic fixtures are obsolete and do not meet code. It is totally inadequate to serve the amperage loads, non-grounded outlets are still in use, and the number of outlets is 1/2 to 1/4 the number required by the current NEC Code. Building heat is provided by an antiquated one-pipe steam system into cast iron radiators. The one-pipe radiators are equipped with a manually adjustable air vent with a liquid filled temperature-sensing element. These valves are difficult to adjust resulting in guest discomfort and frequent maintenance intervention. Also since there is only one pipe feeding the steam heat and domestic hot water system, the water enters the hotel at 140 degrees. This has caused and continues to cause scalding of hotel guests. Uninsulated steam pipes located in the walls and attic spaces contribute to the temperature control problem and cause damage to the historic wall finishes. When the hotel was constructed, it was a summer seasonal facility with no winter operation. Changes in visitor use patterns and expectations have resulted in the hotel being used for year-round service. (There is a short period in the spring and the fall when it is not available.) In summary, this historic building provides a necessary function in visitor services for both summer and winter operations. There are 80 windows on each of the east and west elevations of the guest wing. Many of the existing windows have rotted sills and bottom sash and all of the windows are not adequate for heating and ventilation requirements. They will need to provide passive ventilation in the summer months and providing a good insulation in both the summer and winter to keep out the heat or cold. While character-defining windows in primary public spaces were preserved and restored in the lobby and map room in Phase I, 172 existing guestroom windows will be replaced-in-kind in Phase II. Five windows will be fixed and restored along with a

fixed storm window. The new window will retain the characteristics of the existing one over one wood double hung window but will have an insulated glass unit with low E glass on the on the interior pane and a historic glass on the outer pane. All trim will match the original. Because there will be no air conditioning in the building the windows will need to operate as a true double-hung for ventilation. The interior and exterior trim will be removed to insert the new window with proper flashing. The trim will be re-installed as much as possible and replaced in-kind where necessary due to broken or damaged trim on the building.

Treatment of Character Defining Features

Exterior

Siding – the siding will be replaced in-kind where broken or deteriorated. This occurs mainly on the west elevation between the exit stair and the public spaces. There are minor areas to be repaired on all sides of the guest wing. All lead paint will be removed from the siding and the siding will be primed and painted.

Cornice – the cornice will be replaced in-kind where broken or deteriorated. This is very minor on the building. The cornice will be removed to install the roof line of the west entranced addition and tied into the new structure. The cornice will be will be primed and painted.

Decorative panels – The decorative panels between some of the windows will be removed for installation of the new windows. Minor deteriorated pieces will be replaced in-kind as necessary. The decorative panels will be primed and painted

Window Locations – all windows openings will remain as is even though the type of window affects some room interiors where the large windows are part of the bathrooms rather than a smaller bathroom window. Existing windows will be replaced in kind and will be installed in the existing openings. The existing double hung windows in the stairway on the south end and south end of the west wings be restored and a storm window added. They will not be operable because of fire codes.

Window Trim – Trim will be removed in order to install the new window and tie in the flashing for energy efficiency. The existing trim will be reinstalled and new trim to match in-kind will be installed where broken or deteriorated. The trim will be primed and painted.

Interior

According to the 2015 HSR, with regard to interior spaces, the level of preservation treatment may vary depending on whether the space is considered of primary or secondary significance. Primary spaces are defined as those designed for public access and that retain their original plan and volume, as well as wall, floor, and ceiling finishes. In the hotel primary spaces include all of the public rooms (i.e. lobby, Map Room, gift shop and the main stairs and corridors) including its outside terraces and porte-cochere. Specific treatment recommendations for primary interior spaces will include those that result in the maximum retention of historic fabric, while accommodating updates associated with seismic considerations, health, fire and safety codes and with accessibility statutes. In addition, where sufficient documentation exists, some important small-scale architectural elements or furnishings may be restored in the primary public spaces. Secondary spaces are defined as those originally designed for utilitarian purposes, i.e. spaces not generally seen by the public, and/or space that retains its original plan, but that has modern finishing materials. This also includes spaces that have been altered over the years to accommodate new uses or alteration of spaces. In the hotel, secondary spaces include the guest rooms, laundry, housekeeping, and storage areas, the utility area in the basement, and the service areas.

Corridors (primary spaces)

Plaster Walls – The plaster walls will remain on the corridor side of the rooms. The plaster ceiling will have to be removed in order to run conduit for the electrical lights and other fire detection. It will be repaired as needed and painted. Most electrical, mechanical and structural work will be completed within the rooms.

Room Doors – The room entrance door locations will remain with a few exceptions that have to be moved to work with the new bathroom design. The flush wood doors will be replaced with a wood painted panel door.

Door trim and base will remain and new trim will match in-kind.

Transoms and trim will be preserved in place, although they will remain non-operable and filled in to meet the required fire rated corridors.

Wood floors in the corridor will have to be removed and replaced in kind for structural work.

Picture mold will be removed and replaced in-kind at the top of the wall in the corridors.

Historic Light Fixtures will be rewired to meet code and installed in place. Some of the room ceiling fixtures will be moved to the corridor to provide more lighting.

Rooms (secondary spaces)

There are 3-4 historic bathrooms on each floor. Historic Baths will remain in most locations. The claw foot tubs will be restored and all fixtures will remain. One corner room with historic bath was remodeled over the years and will have a shower added instead of a tub. One other corner room will be turned into a suite and will be altered. All historic bathrooms will receive ceramic tile wainscot or in the case of the shower will have a ceramic tile wall area. The floors will also have ceramic tile to match all bathrooms in the guest wing.

Door Trim – The trim will be removed for the installation of the seismic work and new wall finishes. Trim will be reinstalled where possible and replaced in-kind if broken or deteriorated. The wood trim will be prepared for priming and painting.

Base Trim – The trim will be removed and reinstalled where possible and replaced in-kind where broken or deteriorated. The wood trim primed and painted.

Picture Mold – The trim will be removed and reinstalled where possible and replaced in-kind where broken or deteriorated. The wood trim will be primed and painted.

The hotel does not meet current NFPA and Life Safety standards. The fire alarm system is out of date and is not addressable. The fire sprinkler and emergency lighting systems are at the end of their service life and require frequent maintenance. In addition, appropriate fire rated doors need to be installed at some areas. The elevator does not have two hour rated construction and has reached the end of its service life.

ABAAS deficiencies include egress to the west wing of the building, lack of ABAAS compliant plumbing fixtures and accessible rooms by type and price point.