

***Repair Chimneys on Buildings P12 and P13
(Employee Residences) in the Headquarters
Historic District***

Cultural Resource Report No. 2022- DENA-008

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Abstract

Denali National Park and Preserve (DENA) is considering an undertaking to repair the chimneys on Buildings P12 and P13. The buildings are contributing resources of the Mt McKinley Headquarters Historic District, and the chimneys are character defining features of the buildings. The undertaking would consist of replacing in kind the existing concrete and one clay liner in the chimneys, installing vent pipes for boilers and radon mitigation through the interior of the chimneys, and install a cap over the top of the chimney. The chimneys are experiencing extensive spalling, deteriorating parge coats, and have fractures throughout the concrete and clay liners. The caps are not compatible with the Mt. McKinley Headquarters Historic District.

As designed the proposed caps will adversely affect P12 and P13 and the Headquarters Historic District. It is recommended that Denali National Park and Preserve approach National Historic Preservation Act, Section 106, consultation under 36 CFR Part 800.5(1)(a) as “Adverse Effect”.

1 Description of Undertaking

Denali National Park and Preserve (DENA) is considering an undertaking to repair the chimneys on Buildings P12 and P13. The chimneys have deteriorated due to age and the caustic effects of flue gasses. The chimneys are experiencing extensive spalling, deteriorating parge coats, and have fractures throughout the concrete and clay liners. Due to the extensive failure of the portions of the chimneys exposed to the weather much of the exposed structure would be replaced. Replacement would be in kind and would reflect the original design accurately, including replacement of damaged clay flue liner sections. When possible, historic fabric and materials would be retained.

New boilers which were recently installed in these buildings (consultation completed 5/23/2013, SHPO file No. 3130-IRNPS) require vertical vents, rather than horizontal vents like the previous boilers which vented out the back of the buildings. These new boilers have been venting through the chimneys and their fumes accelerated the deterioration of the concrete. To stop this problem piping is proposed to be installed, which requires structural support. Chimney caps are the least intrusive way to provide that support without attaching additional hardware to the chimneys. These metal cap/ support structures would need to be installed so as to facilitate the installation of new boiler flues and intakes, as well as existing plumbing ventilation and radon mitigation.

2 Legal location for the undertaking and Local Environment

The project is located in Denali National Parks Headquarters. The project occurs within the Alaska Range west of the Nenana River approximately 3.5 miles west of the Park entrance. Tundra ground cover and a spruce-poplar-aspen forest dominate vegetation within the project area. Plants include black and white spruce, balsam poplar, aspen, mosses, ferns, grasses, fireweed, and blueberries. The legal location of the undertaking is Sec 8, T14S, R7W, Fairbanks Meridian.

3 Area of Potential Effect (APE)

The Area of Potential Effect (APE) encompasses 1.72 acres and is composed of the area from which B101 and B106 are visible.

4 Results of Inventory and Records Check

Denali National Park and Preserve cultural resource records and GIS data were reviewed previous to this project. The proposed APE has been previously inventoried (Brown, et al. 2008; Curran 2004; Davis 1983; Gilbert 2012; Karchut 2010; Karchut and Coffman 2009). The Mount McKinley Park Headquarters Historic District, P-12 and P-13 extend into the

APE. The buildings are contributing resources of the Mt McKinley Headquarters Historic District and the chimneys are character defining features of the buildings.

4.1 Mount McKinley Headquarters Historic District (HEA-00147, HD)

The McKinley Park Headquarters Historic District (HEA-00147) (HD) has been nominated to the National Register of Historic Places. The nomination emphasizes the significance of the districts buildings, reminiscent of an early Alaskan frontier settlement laid out in a grid (Brown, et al. 2008; NPS 1987). Initially designed by the park's first superintendent, Harry Karstens, it was later expanded upon by other NPS designers including Thomas Vint, the first NPS landscape architect. The HD was listed in the national register in 1987.

The landscape was documented in the *Cultural Landscape Report* which provided treatment recommendations for the HD (Brown, et al. 2008). The 11.91-acre district encompasses 18 buildings and a network of narrow connecting roads. Fourteen of the buildings are contributing buildings and four buildings were determined noncontributing due to their; lack of physical integrity, non- rustic architectural features, and their ages being less than 50 years old.

The HD is significant under Criterion A for its strong association with the National Park Service (NPS) and the Civilian Conservation Corps (CCC) which advanced the recreation and conservation movements in Alaska. The HD shows minimal alteration since its period of significance (1926-1941) (NPS 1987).

4.2 Employee Residence No. 12 (P-12) and Employee Residence No. 13 (P-13)

Constructed in 1938 by the Civilian Conservation Corps (CCC), these two buildings have frame construction with clapboarding siding on their first floors and vertical board and batten siding on their upper portions. The buildings are two stories with metal covered gable roofs and have concrete foundations with daylight basements. The buildings are painted brown and are 25 x 26' 10".

Designed by architects in the National Park Service Branch of Plans and Design, a contingent of CCC corpsmen began work on both buildings immediately after establishing a CCC camp near headquarters in the spring of 1938 (NPS 1938). The buildings were completed by October of that year, and, the last contingent of 200 enrollees based at the CCC camp at Denali left the park for the season in November. Both buildings were originally six-room, single-family residences which matched very closely the original blueprints.

Consistent with the general pattern of evolving uses and appearance of buildings at headquarters, changes in the use of this residence corresponded directly with the extent of physical alteration. Since their construction in 1938, the buildings have retained their use as residences. In 1953 and 1954, both buildings were converted from single family dwellings to duplexes.

The buildings retain high historic integrity in location, setting, design, materials, workmanship, feeling, and association.

5 Recommendations

The updated Design Guidelines for the HD (Feil, et al. 2016) provide the following general recommendations for P-12 and P-13:

- Develop and adhere to a cyclic maintenance plan, including:
 - Annual inspections of the foundation, siding, windows, doors, finishing, and roof material.
 - Cleaning and repainting on a 7-year basis.
- Retain character-defining features
- Conduct repairs in-kind
- Avoid exterior alterations.
- Coordinate proposed projects with Park cultural resource manager and SHP on a case-by-case basis to confirm projects are completed in accordance with the *Secretary of Interior Standards for the Treatment of Historic Properties*.

As designed this project will result in adverse effects to both P-12 and P-13, mainly due to the visual impacts from the proposed chimney caps, as well as the almost near replacement of the chimneys themselves, which are character defining features of the two buildings.

Minimization efforts thus far have included reaching out to mason historic preservation experts in to see if it would be possible to repair, rather than replace, the concrete and clay flue liners. While the methods suggested by these experts would be used in the project, the majority of the historic fabric would still need to be replaced. The new concrete would be painted to match the original as closely as possible, and the size and shape of the chimney would be retained.

The proposed cap for the chimney is not compatible with the design of the buildings or the HD. The proposed cap is the only method available that would support the flue pipes, weatherproof the chimney, and leave the chimney without additional hardware attached to the structure (which overtime would impact its structural integrity). While an adverse effect, the caps will help preserve the remaining original chimney fabric and the proposed repairs and replacements.

If cultural resources or items protected by the Native American Graves Protection and Repatriation Act are discovered during project implementation, all project-related activities in the vicinity of the discovery would be stopped and the park archaeologist would be notified immediately. Denali National Park and Preserve in consultation with the State Historic

Preservation Officer and other consulting parties would determine a course of action per 36 CFR Part 800.13.

Based on our review, as designed the project will adversely affect, P-12, P-13, and the HD. It is recommended that Denali National Park and Preserve approach National Historic Preservation Act, Section 106, consultation under 36 CFR Part 800.5(a) as “ Historic Properties Adversely Affected”.

6 References

Feil, Heather, et al.

2016 Design Guidelines Mt. McKinly National Park Headquarters Historic District: Boundary Expansion)1950-1961). Denali National Park and Preserve, National Park Service, AK.

NPS , Branch of Plans and Design

1938 Employees Residence- Headquarters Area, Mount McKinley National Park. Building Inventory Form 10-768 for No. 12, 21 February 1950 Archives, DENA.

P-12 and P-13 APE

Denali National Park and Preserve
National Park Service
U.S. Department of the Interior



Legend

- George Parks Highway
- Contributing Buildings
- Headquarters Historic District
- Park Road (with mile posts)
- Non-Contributing Buildings
- APE= 0.41 Acres



Source: Denali National Park & Preserve
Datum: NAD83 (Albers)

Figure 2- Area of Potential Effect (APE)



Figure 3- P-12, view to the southwest, , December 1951 (DENA 9101)



Figure 4- P-12, 1939 (DENA 71).



Figure 5- P-13, 1963. (DENA 21477).



Figure 6- P-13 in 2014 prior to install of new boiler. Chimney is in fair condition (NPS Photo).



Figure 7- P-12 in 2014 prior to new boiler install. Chimney is in fair condition (NPS photo).



Figure 8-Cracked, spalling concrete, and crack clay flue liner on P-12 Chimney (NPS Photo 2021)



Figure 9- B-13 chimney showing spalling and deteriorated parge (NPA Photo, 2021)



Figure 10- B-12 chimney showing fractures in concrete and clay liner (NPA Photo, 2021)



Figure 11- B-12 flue liners showing gaps where water infiltrates (NPS Photo, 2021).