

HISTORIC STRUCTURE REPORT FOR THE HEADQUARTERS HISTORIC DISTRICT



OLYMPIC NATIONAL PARK WASHINGTON

2010

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Executive Summary

Executive Summary

This Historic Structure Report was prepared as part of the implementation of the Olympic National Park General Management Plan (approved August 8, 2008) and in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties.

(Additional material after review)

Preface

This Historic Structure Report was initiated by the National Park Service as part of its stewardship of the historic buildings at Olympic National Park.

A Historic Structure Report is a planning guide. It is the purpose of a Historic Structure Report to develop an assimilation of historic context and existing conditions of a building(s) to form the basis of recommendations on the care and conservation of the historic resource.

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II

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Olympic National Park Headquarters District

The buildings at the Olympic National Park headquarters are located on thirty-eight forested acres on the south hill, with a commanding view over the town of Port Angeles, the Strait of Juan de Fuca, and, on a clear day, all the way to Victoria, British Columbia. The parcel is roughly square, with a notch taken out of the southern border where the headquarters property jogs around Peabody Reservoir, the city's water supply. Park Avenue forms the northern boundary and provides the only vehicular access to the site.

Peabody Creek, running through a wooded gully, separates park headquarters from the adjoining thirty-four acres to the east where the park's visitor center is located. There are currently twenty-four buildings at the headquarters.

Under a major reorganization of the federal government, the National Park Service took over jurisdiction of all national monuments on June 10, 1933. This gave the Park Service responsibility for Mount Olympus National Monument several years before the creation of Olympic National Park. The agency took over active management in February 1934. At that time, Owen A. Tomlinson served as superintendent for both Mount Rainier National Park and Mount Olympus National Monument. Preston P. Macy, who had worked as assistant chief ranger at Mount Rainier, took over the day-to-day management of the monument, first as acting custodian in December 1934 and then as custodian less than a year later.¹

In planning for the future national park, Macy started looking for a permanent location for park headquarters. The early choice was Lake Crescent, accessible by highway and already partially developed with hotels and dozens of private lake cottages. This area was outside the initial boundaries of the monument, but Macy said that it was "decidedly up to park

¹ Hal K. Rothman, *American Eden: The Administrative History of Olympic National Park* (National Park Service, 2005, final draft), 64, 89.

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requirements." In a report from early October 1934, Macy proposed adding approximately 110,000 acres to the monument, with Lake Crescent included in the new lands. Within a few months, the Park Service had proposed locating the future park's headquarters at the lake. This would have followed the agency's tradition of putting the administrative facilities within the park, isolating personnel from the outside community. This plan did not last long, however, and by July 1935 the agency was looking at locating headquarters in or close to Port Angeles. This move may have been influenced by the Forest Service model of locating administrative facilities in the communities affected by forest policies.²

It took another three years to settle on a site for park headquarters and in the meantime, Macy faced a daunting array of tasks in setting up a new administration for Mount Olympus National Monument. All business relating to the monument was initially run out of Macy's home at 431 East 12th Street in Port Angeles, making it a busy place. Superintendent Tomlinson assigned two trucks, some equipment, and a variety of tools from Mount Rainier to Macy, enabling the new custodian to send seven trail crews to work in the monument. Macy wrote in September 1935 that he wished Tomlinson had been there for "the christening of our new warehouse. . . . [It] consisted of the grassy area just east of my garage and woodshed, and the blue sky above was our roof, but it worked out perfectly. The materials for the engineering crews are stored in my garage until they are ready to start, which will be in a day or two."³

Macy's home continued to function as "headquarters" into 1936, but his enthusiasm for the arrangement began to wane. He had a small office upstairs but frequently had to expand into an adjoining bedroom when signing up work crews. He conducted most interviews in his living room

2 [Preston P. Macy], Preliminary Report Mt. Olympus National Monument, 5 October 1934, Accession No. OLYM-438, Catalog No. OLYM-18414, box 1, file 8: 1936-1948, History, Olympic National Park Archives; Guy Fringer, *Olympic National Park: An Administrative History* (Seattle: National Park Service, Pacific Northwest Region, May 1990), 95-96. A newspaper article said that Macy was initially located at Lake Crescent, although nothing else has been found to substantiate this; Macy, Appointed Park Chief, Due Here Feb. 10th, *Port Angeles Evening News*, 26 January 1939, 1:3, 8:1.

3 Fringer, *Olympic National Park*, 95; Preston P. Macy to Major O. A. Tomlinson, 19 September 1935, 2, Preston P. Macy Papers, Accession No. 3211, box 1, file 18, University of Washington Libraries, Special Collections Division.

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which also served as additional office space, leaving "the living room table strewn with typewriters and fiscal and correspondence matters." All of the staff shared the family bathroom, and extra supplies and equipment were stored in the basement. Macy assured Tomlinson that he was not complaining about the situation but was merely stating the facts. "I appreciate fully the conditions under which it is necessary to operate until such time as we may enjoy the proper and necessary arrangement which we do not now have," he wrote.⁴

Macy took steps to alleviate the situation by leasing a warehouse at 336 East 1st Street, effective August 1, 1936. The building contained one office that, by the end of the year, had become crowded with the clerk-timekeeper, radioman, engineers, and ranger. Macy liked to work there so that all of the staff was together, but the conditions were so busy "that no privacy can be enjoyed for the administration of Monument affairs." In December 1936, Macy recommended that the Park Service lease the other half of the building, recently vacated by the State Highway Department, to allow for expansion.⁵

Although Macy was negotiating to lease office space in the federal building/post office in Port Angeles in late 1936, that space did not become available until August 1937. Two years later, the Park Service had expanded into three rooms on the second floor of the post office. In addition, the agency moved the warehouse in May 1939 to the former Wolverton garage building at the corner of Lincoln and Eighth Street. The vacated warehouse space at First and Peabody then was turned into offices for the park's engineers, landscape architects, and clerks for the public works programs. In addition, crews constructed a new sound-proof room there to house the radio system and keep its "crackling radio reports" from disturbing the others.⁶

4 Preston P. Macy to O. A. Tomlinson, 1 December 1936, 1-2, Preston P. Macy Papers, Accession No. 3211, box 1, file 19, University of Washington Libraries, Special Collections Division.

5 Custodian's Annual Report, For Fiscal Year Ending June 30, 1937, Accession No. OLYM-443, Catalog No. OLYM-18242, box 1, file 1, 3-4, Olympic National Park Archives; Preston P. Macy to O. A. Tomlinson, 1 December 1936, 1-2, Preston P. Macy Papers, Accession No. 3211, box 1, file 19, University of Washington Libraries, Special Collections Division.

6 Macy Appointed Park Chief, Due Here Feb. 10th, *Port Angeles Evening News*, 26 January 1939, 8:1; National Park Service Takes Added Quarters, *Port Angeles Evening News*, 24 May 1939, 1:5.

It was not just staff and office space that was expanding during this time. President Franklin D. Roosevelt signed the bill on June 29, 1938, to establish Olympic National Park, nearly doubling Macy's domain to 634,000 acres. The news sparked excitement, especially in Port Angeles, the proposed location of the new park's headquarters. The local newspaper revealed in June that "a definite plan of large headquarters at Port Angeles is worked out to include stables, storehouse, garage and residences."⁷ Two months later, Clallam County Commissioner Schmitt talked with the *Seattle Times*. "Not only will we have a park," he bragged, "but it is obvious that its headquarters, plant, machine shops, and supply depots will be located in Port Angeles, which is the most adjacent city to the park."⁸ At the time, the decision to locate the park headquarters in town instead of inside the park boundaries ran counter to Park Service tradition and made Olympic National Park unique within the whole system.⁹

Park Service officials settled on a parcel of land on Peabody Heights well before the creation of the park. During the depression and the downturn of the timber industry, Clallam County gained title to close to two thousand acres of logged-over lands, relinquished by the owners for back taxes. This particular piece was especially appealing for the park's headquarters since it was close to a potential road to Hurricane Ridge, a route that both county and Park Service officials believed would eventually become the main gateway into the park. Clallam County commissioners agreed to donate the parcel to the federal government for use as the park headquarters. To make the donation legal, there was a county treasurer's sale on the courthouse steps on August 10, 1938, where the land was to sell for \$1.00. After Macy placed the government's bid, a reporter for the local newspaper jokingly upped the bid to \$1.10, nearly causing "heart failure" for the treasurer. When he regained his composure, Treasurer Walter A. Baar asked the reporter for whom he was bidding and the newspaperman sheepishly replied

7 Garrison Finish of National Park Measure Is Dramatic; Costly Error Caught In Time, *Port Angeles Evening News*, 17 June 1938, 1:8.

8 National Park Service, *Cultural Landscape Inventory, Park Headquarters, Olympic National Park* (Seattle: National Park Service, Pacific West Region, 2003), 2a-1.

9 Gail H. E. Evans, *Historic Resource Study, Olympic National Park, Washington* (Seattle: National Park Service, Pacific Northwest Region, 1983), 359.

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that the bid was for the government. He added his dime to the dollar to complete the process.¹⁰

Getting a clear title to the land proved to be much harder than making the actual purchase. Macy first tried to convey the land to the United States in a deed dated October 24, 1938. The approval process dragged on for months, however, delaying work at the site and causing frustration in Port Angeles where people were anxious to see construction begin on the new park headquarters. In May 1939, the North Olympic Chamber of Commerce urged Congressman Mon Wallgren to pressure the solicitor general to accept the property and break the logjam. The official could not do this, however, because of defects in the title. A second deed from Macy and his wife, Esther L. Macy, dated July 17, 1939, fixed the problems, and the solicitor general finally accepted title to the tract of land on September 12. "The area is admirable [sic] suited for its intended purpose," wrote Fred Overly, the park's ranger, "and upon completion of the present building program the inconveniences of 'pioneering' the administration of the park will, for the greatest part, be overcome."¹¹

Four additional land transfers completed the property that now comprises the park headquarters and facilitated its development. All four came from Fred J. Overly and his wife, Esther Anne Overly. A square parcel contained approximately one acre in the northwest corner of the present property. The Overlys sold this to the United States in December 1940 for \$100, making no profit on the sale. They also donated a strip of land adjoining the above property on the northern line, deeding it to the United States on June 1, 1939. In addition, the Overlys sold two strips of land along the northern boundary of the headquarters property to Clallam County on October 24, 1938, both for public road purposes. This facilitated the extension of Julia

10 National Park Service, *Cultural Landscape Inventory*, 2a-1; Superintendent's Narrative Report, 2 August 1938, 5, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 5, 1938, Olympic National Park Archives; Government Bids In 36 Acres Of Land Here For Olympic National Park, *Port Angeles Evening News*, 10 August 1938, 1:8; W. A. Baar to Preston P. Macy, 11 August 1938, Clallam County Deed Record, Book 111:586. The newspaper article does not state specifically that Macy was the government official who made the bid, but he was at the sale and his name is on the deed.

11 Fringer, *Olympic National Park*, 96; Action Sought On Two Olympic Park Problems, *Port Angeles Evening News*, 11 May 1939, 2:1; Preston P. Macy and Esther L. Macy to USA, 17 July 1939, Clallam County Deed Record, Book 133:249; Superintendent's Narrative Report, 12 October 1939:1, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 6, 1939, Olympic National Park Archives.

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Street, later renamed Park Avenue, and provided access to the site. (The park headquarters property nearly doubled in size in January 1944 when Thomas T. Aldwell deeded 34.25 acres to the federal government. The land adjoins the original parcel on the east but is separated visually and physically by the Peabody Creek ravine. The park's visitor center is located on the Aldwell parcel. This property, however, is not the subject of this report.)¹²

The property title was not the only cause for delay in building the headquarters for the new park. Funding was a problem that plagued the project from start to finish. The initial delay was due to the unfortunate timing of the passage of park legislation at the end of June 1938, too late into the budget process for any appropriation until FY1940. "The park must then . . . get along for a year on the funds appropriated for the former monument," Macy noted. This was not the only source of funding, however, because the various Depression-era public works programs were still active and offered a source of both money and labor. Secretary of the Interior Harold Ickes announced in September 1938 that Olympic National Park had been granted \$115,000 from the Public Works Administration (PWA). Approximately \$70,000 of this was to be used for the new headquarters buildings and the rest was to be spent on other park improvements, including shelters and fire lookouts. Macy was delighted with this news and told the local newspaper that the new headquarters would have "log and stone buildings . . . constructed to blend with the landscaping" ¹³

The allocation was conditional on having all building projects started in December 1938: the administration building and superintendent's residence were to start by December 1, the garage by December 10, and the warehouse by December 15. Park officials realized by mid-October that it would be

12 Fred J. Overly and Esther Anne Overly to USA, 23 December 1940, Clallam County Deed Record, Book 140:330; Fred J. Overly and Esther Anne Overly to USA, 1 June 1939, Clallam County Deed Record, Book 140:328; Fred J. Overly and Esther Anne Overly to Clallam County, 24 October 1938, Clallam County Deed Record, Book 131:533-535; Thomas T. Aldwell to USA, 20 January 1944, Clallam County Deed Record, Book 160:189-190.

13 President Signs Olympic Park Bill, *Port Angeles Evening News*, 29 June 1938, 1:8; Olympic Park Awarded \$115,000, *Port Angeles Evening News*, 23 September 1938, 1:8; Superintendent's Narrative Report, 2 August 1938:3, 3 October 1938:1, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 5, 1938, Olympic National Park Archives.

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hard to meet the deadlines imposed by the PWA. Tomlinson wrote to the Regional Director to warn him that it would be "exceedingly difficult to comply with procedure on account of the lack of plans. While I know that the Branch of Plans and Designs is working on the plans, I would deeply appreciate anything that can be done to speed up their completion."

Landscape architect Max E. Walliser had been at work in Port Angeles since early September drawing plans for the headquarters buildings, and by the end of October he had completed not only the general layout plan of the area but also preliminary drawings for the administration building. He followed with his plan for the proposed superintendent's residence, dated November 2, 1938. Unfortunately, all building construction was held up for a year by the uncertainty about the title to the land.¹⁴

Despite being unable to start on buildings, the Park Service began preliminary work on the new park headquarters site in the last months of 1938. Engineer S. L. Cutler began surveying and mapping the property in August and was joined by Walliser at the end of the month. The two men worked on site plans that fall. In a drawing for the utility connections, dated November 18, 1938, Cutler showed the locations and footprints for the administration building and the superintendent's residence, as well as a large warehouse and small gas and oil building in what is now the utility area. The curving road system shown on the plan is essentially what is used today.¹⁵

The first construction activity at the headquarters area began in December 1938 with the arrival of a crew of young men from Camp Elwha, the nearby Civilian Conservation Corps (CCC) unit. The camp had been under the direction of the U.S. Forest Service but transferred to the Park Service on

14 Olympic Park Awarded \$115,000, *Port Angeles Evening News*, 23 September 1938, 1:8; Superintendent [O. A. Tomlinson] to Regional Director, 18 October 1938, Accession OLYM-438, Catalog No. OLYM-18414, box 1, file 1/2 1935-1953 Correspondence, Mainly Preston P Macy, Olympic National Park Archives; Superintendent's Narrative Report, 3 October 1938:2, 3 November 1938:2, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 5, 1938, Olympic National Park Archives; Max E. Walliser, Preliminary Sketch, Superintendent's Residence, Drawing No. NP/OLY-2007, 2 November 1938, Plan Case, file Headquarters, Olympic National Park Archives.

15 Superintendent's Narrative Report, 2 September 1938:2-3, 3 November 1938:2, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 5, 1938, Olympic National Park Archives; S. L. Cutler, Sewer System, Drawing No. NP-OLY/53:02, 18 November 1938, Plan Case, file Headquarters, Olympic National Park Archives.

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December 1, becoming the first CCC camp for the new park. While crews worked on a variety of projects in other areas of the park, a small group started work for the new headquarters buildings. Five men began cutting sandstone at a rock quarry south of Port Angeles, preparing the material for use in the foundations for both of the main buildings. Another five men, two carpenters and three helpers, started constructing forms for the headquarters buildings; they continued this work for a few days in January 1939.¹⁶

After the brief period of work in January, there was virtually no construction work done at headquarters for several months. Superintendent Macy went to Seattle to meet with officials of the Works Progress Administration (WPA) on April 11 to see if he could secure that agency's cooperation for the large construction project. Regional Landscape Architect Ernest A. Davidson came to Port Angeles that same month to discuss the plans for the primary buildings. Finally, in early June 1939, Macy announced that he had received approval to begin the preliminary clearing and grading for the new park headquarters. A CCC crew from Camp Elwha was set to start work as soon as Clallam County acquired the right-of-way to extend Julia Street eastward across the north side of the property. County officials were as anxious as everyone else for this major project to start and they apparently resolved the problem quickly. By the end of the month, a large crew of CCC enrollees had not only roughed in minor roads for the area but also cleared the site for the new administration building. The CCC returned in August to clear building sites in the utility area.¹⁷

Macy's request for WPA assistance was granted early in the summer of 1939. Don G. Abell, director of the state WPA program, told Macy on June 20 that he had approved the headquarters project for a total of \$34,955, to be spent on site preparation. This work included cutting dead timber; clearing all brush and debris; building roadways and trails at the site; leveling approximately eleven acres; and landscaping the grounds. To supplement the WPA grant, the Department of the Interior approved another \$8,677 from

16 Superintendent's Narrative Report, 4 January 1939:1-3, 6 February 1939:3, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 6, 1939, Olympic National Park Archives.

17 Superintendent's Narrative Report, 4 May 1939:1-2, 7 July 1939:3, 12 September 1939:4, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 6, 1939, Olympic National Park Archives; Martin Suggests That President Dedicate Park, *Port Angeles Evening News*, 3 June 1939, 1:2.

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the National Park Service budget to cover tools and heavy equipment for the project. WPA crews could not start work, however, until the property title was accepted by the federal government and the state WPA funding recommendation was approved on the national level. The title was accepted in September but the project did not get its final WPA approval until early November 1939.¹⁸

Once Macy got word that the property title had been accepted by the federal government, he announced that construction could begin immediately on the park headquarters. Within a short time, CCC crews had returned to the site, working under the direction of Willis Pabst, project supervisor for Camp Elwha. He was joined on November 1 by W. D. McArthur, who came from Mount Rainier National Park to serve as general foreman for both construction and maintenance. By mid-October, the CCC men had staked out both the administration building and the superintendent's residence and were ready to start excavation for the warehouse, which was to be the first construction project. Other crews had cleared all of the roads and begun on the rough grading. The basement footings were poured and the foundation forms nearly completed for the two main buildings before the end of the year. At the same time, a WPA crew of sixty men was making good progress on the landscaping project, primarily doing selective clearing and thinning to reduce fire hazard. They were set back by a severe windstorm on December 10 that caused extensive damage to the second growth trees. The WPA men managed to straighten most of the trees, some of which needed guy wires for support.¹⁹

18 Park Building Site Job Given WPA Head's OK, *Port Angeles Evening News*, 20 June 1939, 1:7; Two WPA Jobs In County Get Final Approval, *Port Angeles Evening News*, 3 November 1939, 8:5; Superintendent's Narrative Report, 9 August 1939:3, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 6, 1939, Olympic National Park Archives.

19 Site Of Park Headquarters Is Accepted By U.S., *Port Angeles Evening News*, 18 September 1939, 1:3; Park Service Has Variety Of Jobs Under Way Within and Outside Park, *Port Angeles Evening News*, 4 October 1939, 5:1-3; New Foreman Here For National Park, *Port Angeles Evening News*, 1 November 1939, 8:4; Further Account Of Olympic Park Projects, *Port Angeles Evening News*, 20 October 1939, 1:4-5; Superintendent's Narrative Report, 3 November 1939:4, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 6, 1939, Olympic National Park Archives; Superintendent's Narrative Report, 10 January 1940:2, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 7, 1940, Olympic National Park Archives.

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During this time, a lot of the preparatory work for the headquarters buildings was taking place at the old Tumwater Creek quarry, located on private land in the Black Diamond area south of Port Angeles. William J. Hoare, interviewed by the local newspaper in August 1940, remembered the original quarry operation well since he had supplied firewood to the stone-cutting mill there in the early 1900s and later served as a watchman after the quarry closed. According to Hoare, the Port Angeles Stone Company bought eighty acres of land from Barney Bitterwold in 1904. Within a short time, crews built a mill and began producing sandstone that was used both locally and around the Pacific Northwest. Examples include the Aldwell building at the corner of First and Laurel in Port Angeles and the Yakima County courthouse. Hoare said that blasting operations at the quarry produced chunks of sandstone the size of "an ordinary room." At the mill, these rock pieces were run through two toothless gangsaws that cut them into slabs, sawing at the rate of approximately one foot per hour. Once the stone was cut, it was taken by a local railroad from the quarry to Port Angeles. The quarry operators got permission to operate a railroad on the grade built earlier for the Elmira Logging Company. Hoare remembered that the quarry closed not long after the 1906 earthquake devastated San Francisco.²⁰

More than three decades later, when the Park Service needed stone for the headquarters buildings, officials looked to the abandoned Tumwater Creek quarry since it was the most accessible source for good quality stone. Owner Charles Munden gave them permission to use the quarry and in June 1939, the county commissioners granted a two-year easement to open up a single lane truck road from Doran Road into the pit. CCC men bulldozed the old railroad grade by early October and the quarry operations soon started. Ed Gilliland supervised around fifteen CCC men there. They blasted the rock loose and then used compressed air hammers to break the chunks, each weighing up to one ton, into smaller pieces. A crane then loaded them onto trucks for hauling to the building site. They had delivered close to fifty tons of trimmed sandstone to park headquarters by the end of February 1940. It was estimated that four hundred cubic yards of stone would be needed to complete all of the planned buildings.²¹

20 Memories of Old-Time Stone Quarry Recalled, *Port Angeles Evening News*, 10 August 1940, 3:2-3;

Olympic Park Headquarters Site Beehive of Activity, *Port Angeles Evening News*, 13 April 1940, 1:4-5.

21 Easement Given For Truck Road To Stone Quarry, *Port Angeles Evening News*, 28 June 1939, 1:7; Park

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Work at the stone quarry was just one phase of the headquarters project in the winter and spring months of 1940 when around two hundred men were employed. Seventy-five of these were CCC enrollees who cut stone at the quarry, hauled it to the site, and did general construction work there. Another seventy-five were employed by the WPA on the landscaping work. The last group, about forty-five men, included mostly skilled laborers - stonemasons, carpenters, electricians, and plumbers - who were paid with funds from a grant of \$80,000 from the PWA; some common labor also was covered by this appropriation. There were several supervisors active on the site by April 1940. They included James Cadzow of Port Angeles, who served as construction foreman; Robert Riggs, an architect from the Regional Office who came to town to supervise the building projects; and Max Walliser, the park's landscape architect who was in charge of the development of the grounds.²²

The CCC crew finished pouring the concrete basement and foundation walls of the administration building in early February 1940, and the masons began laying stone before the end of the month. Unskilled workers did the rough cutting of the stone, based on a list of what the mason requested. Rock came in from the quarry in big pieces. "They would just dump it off out there in front," remembered Julian McCabe, who learned to cut stone while working on the headquarters buildings. "We had a compressor there. We'd lug a boulder over to find out how the grain went. And then we'd drill a whole bunch of holes, about so far apart and about four inches deep, right around the contour of the grain," he said. At that point, he would put a pair of steel wedges, known as a feather and wedge, into each hole. "You start out, you hit each wedge and when you get to the end, you hit each one again. Then pretty soon it started to pop off," McCabe described. The skilled masons did the finish trimming once the stone was on the scaffolding. McCabe worked under "an old country stonemason" from Sweden. "He sure knew his stuff,"

Service Has Variety Of Jobs Under Way Within and Outside Park, *Port Angeles Evening News*, 4 October 1939, 5:1-3; Further Account Of Olympic Park Projects, *Port Angeles Evening News*, 20 October 1939, 1:4-5; Olympic Park Headquarters Site Beehive of Activity, *Port Angeles Evening News*, 13 April 1940, 1:4-5; Superintendent's Narrative Report, 9 March 1940:1-2, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 7, 1940, Olympic National Park Archives.
22 Olympic Park Headquarters Site Beehive of Activity, *Port Angeles Evening News*, 13 April 1940, 1:4-5.

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he recalled. He also remembered a unique stone, containing a fossilized fern, that was used as a sill on the window to the left of the south entrance into the administration building.²³

Other skilled workmen were busy on the two main buildings that spring. By the end of April 1940, carpenters had finished framing the first floors of both the administration building and the superintendent's house. This enabled plumbers and electricians to start roughing in these systems. Local people were quite interested in the project, and Macy reported that frequently several hundred would show up on the weekend to check on the progress. Construction continued at a good pace through May when Macy estimated that the administration building (Building #1) was 45 percent complete while the superintendent's residence (Building #2) was 70 percent done. He noted, however, that the PWA allotment was almost gone, with "time limits drawing near." All construction work on the headquarters buildings then came to an abrupt halt around June 25 after the PWA funding ran out. At that point, workers had finished most of the stonework on the administration building, completed about half of the shake siding on the second story, and nearly finished the shake roof. The residence was finished on the exterior and painters had been able to apply gray stain to the shakes on both the upper walls and roof. In addition, all of the door and window frames had received two coats of white paint. In fact, the residence was finished enough to allow the park's engineering staff to establish a temporary office in the building in late June, completing the move by July 1. This allowed the park to save money on the building it had been leasing in town. Despite the cutoff of the initial allotment, a small PWA crew finished the stone terrace on the superintendent's residence in July.²⁴

Although construction halted on the two primary buildings, there was plenty of other work going on at the headquarters site. CCC men from Camp Elwha built two small buildings in 1940. Park landscape architect Max

23 Superintendent's Narrative Report, 9 March 1940:1, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 7, 1940, Olympic National Park Archives; Julian McCabe, interview with Russ Dalton, 9 October 1981, 31-32, transcript on file, Olympic National Park Archives.

24 Superintendent's Narrative Report, 10 May 1940:1, 3, 10 June 1940:1, 3, 10 July 1940:4-5, 10 August 1940:4, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 7, 1940, Olympic National Park Archives.

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Walliser completed plans for a transformer vault and pumphouse (Building #4) in July 1939. Work began the following spring and by the end of May 1940, the crew had finished pouring footings for the building, as well as a base for the pump and saddles to hold the tank. A month later, the building was half done and was virtually finished by the end of October 1940. When completed, the pumphouse contained two pumps: the first circulated water for daily use in the headquarters buildings while the second built up greater pressure needed for fighting fires on the property. Both were necessary because the headquarters buildings sat so close to the city's water reservoir that there was not enough drop in elevation to build up sufficient pressure. Work went even faster on the gas and oil house (Building #3) in the utility area. In May 1940, Park Service architect G. W. Norgard finished plans and the CCC allotted \$1,600 for the project. Construction probably began immediately because the building was nearly half completed by the end of June and essentially done by the end of August.²⁵

Camp Elwha had additional men working on other projects for the new park headquarters. Some of them continued working at the Tumwater Creek quarry. Macy reported that the remainder of the sandstone needed for the buildings had been prepared by the end of May and was ready for delivery to the site. Workers returned to the quarry in August to prepare several tons of flagstone to be used in the lobby of the administration building. A number of other CCC men dug - and then backfilled - thousands of feet of ditches to carry water, sewer, and power lines throughout the site.²⁶

While men from the PWA and CCC did all of the construction projects during 1940, a large crew from the WPA worked for much of that year on landscaping the site, continuing the work started the previous fall. There were several parts to this undertaking. In early February, WPA supervisor

25 Superintendent's Narrative Report, 9 August 1939:2, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 6, 1939, Olympic National Park Archives; Superintendent's Narrative Report, 10 June 1940:3, 10 July 1940:5, 10 September 1940:4, 10 November 1940:4, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 7, 1940, Olympic National Park Archives; CCC Camp Elwha Hopes To Build Up Complement To Full Strength, *Port Angeles Evening News*, 27 May 1941, 7:3-5; G. W. Norgard, Gas and Oil House, Drawing No. NP-OLY 2070-A, 6 May 1940, digital copy only, NPS TIC system.

26 Superintendent's Narrative Report, 10 February 1940:2, 10 June 1940:4, 10 September 1940:4, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 7, 1940, Olympic National Park Archives.

Design Development

Clarence Winn had a crew of twenty men digging rhododendrons in both eastern Clallam County and in Jefferson County. They hauled well over two thousand plants back to the headquarters site over the next couple of months. Workers boxed some of these to use later in plantings around the new administration buildings, but they transplanted most of them along the roadways. WPA crews dug other local plants for moving to the building site, and by the end of April 1940, they had transplanted 2,315 rhododendrons, 1,000 sword ferns, 1,200 vine maples, and a mix of 75 fir, cedar, and pine trees. Other WPA workers transformed a natural depression in the northwestern corner of the site into a pond to hold back water that flowed naturally through that area. The landscape design called for "rustic bridges, sandy beaches and marine plants" to finish the pond. By the end of May, there were around fifty-five workmen grading roads; building walkways, including 1,000 feet of trails paralleling the residential loop; clearing and grading along the boundary to prepare for installation of a fence; and grading around the two main buildings for a lawn. Work slowed a month later when the WPA crew was reduced to just thirty men, but by the end of August they had completed about 75 percent of the lawn grading, cleared an 8-foot strip for fencing along the south line, and built 300 feet of gravel walkways with stone edging. The WPA landscaping project at headquarters was suspended on October 4, 1940, just two weeks shy of a full year of work. During that year, the park spent \$33,300 on labor and just \$700 on materials.²⁷

As the park was wrapping up the landscaping job at the new headquarters site, the National Park Development Committee of the local Chamber of Commerce urged the Clallam County commissioners to take several actions to enhance the park's new administrative site. They asked that the county provide drain tile to allow for the filling of the deep ditch that ran along the northern boundary by Julia Street. The ditch, dug to help drain the site, carried water to Peabody Creek on the east. The committee also requested that the county acquire the property immediately to the north of the new

²⁷ Superintendent's Narrative Report, 10 February 1940:2, 10 April 1940:3, 10 May 1940:3, 10 June 1940:4, 10 July 1940:5, 10 September 1940:5, 10 October 1940:3, 10 November 1940:4, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 7, 1940, Olympic National Park Archives; WPA Load Here Far Below Total Listed Year Ago, *Port Angeles Evening News*, 3 February 1940, 1:7; Olympic Park Headquarters Site Beehive of Activity, *Port Angeles Evening News*, 13 April 1940, 1:4-5.

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buildings and landscape it to enhance the new park buildings. Finally, they asked the county to develop "a new boulevard approach" to the headquarters, with gradual curves from Lincoln Street onto Julia Street. While the ditch was eventually filled in, it is not clear that it happened at this time. The county failed to act on the other two suggestions. In October 1940, however, the commissioners did agree to change the name of Julia Street to Park Avenue at the request of Superintendent Macy. Elsewhere in Port Angeles, the Active Club sponsored a new log portal, designed by landscape architect Max Walliser. With signs to welcome travelers to Port Angeles and Olympic National Park, the portal featured "an attractive arrangement of logs at either side of the highway," just east of Ennis Street.²⁸

Construction programs for the new Olympic National Park faced stiff competition by the fall of 1940. War had broken out in Europe in September 1939 when German forces invaded Poland. Although the United States did not enter the war until December 1941, the country shifted rapidly to a wartime footing in 1940. President Roosevelt appointed a National Defense Advisory Commission that spring, and Congress passed the Selective Training and Service Act in September 1940, resulting in the first peacetime conscription in the country's history. The public works agencies, so important during the depression, shifted their emphasis to projects related to national defense. In the Puget Sound region, forts Lewis, Worden, Flagler, and Casey all had major building projects going by the fall of 1940. There also was major construction at the Clallam County airport near Port Angeles at that same time. In addition, Olympic National Park participated in war preparation by working for several years with the Army to conduct airplane observation tests, paving the way for a series of Aircraft Warning System lookouts which operated in the park during World War II.²⁹

Work on park headquarters was pretty much at a standstill for several months during the fall of 1940 and into the early winter months. The only

28 Group Recommends Improved Approaches To Park Headquarters, *Port Angeles Evening News*, 23 September 1940, 6:4-5; Park Avenue Now At Port Angeles, *Port Angeles Evening News*, 21 October 1940, 1:7; City Completing Welcome Portal, *Port Angeles Evening News*, 26 November 1940, 2:6.

29 Superintendent's Narrative Report, 9 January 1942:3, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 9, 1942, Olympic National Park Archives; Group Recommends Improved Approaches to Park Headquarters, *Port Angeles Evening News*, 23 September 1940, 6:4-5; various other articles in *Port Angeles Evening News*, Fall 1940.

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work that Superintendent Macy had to report for December was the extension of the power and water systems, done by the CCC crew from Camp Elwha. The situation improved in early February 1941 when the PWA allotted \$35,000 to the park, with \$22,000 of this to be used to finish the administration building and the superintendent's house; the other \$13,000 was for surveying a proposed road along the coast. While these funds were vital for Olympic National Park, they were tiny when compared with federal spending on the war effort. The same day that park officials announced their PWA grant, the local newspaper reported that the WPA had approved \$850,000 for construction of a new airport in the area around Cape Flattery. By the end of March, the federal government had allocated close to \$40 billion for national defense projects. Clearly, national parks were a low priority during this time.³⁰

The PWA grant allowed the park to hire skilled workers to complete the finish work on the administration building and superintendent's residence. A small crew began work on February 5 and soon finished the exterior work so that scaffolding could be removed. Over the next few months, they completed plastering and worked on the interior woodwork, including cedar paneling in public areas. Superintendent Macy continued to worry about funding and wrote to the Regional Office in late April to see if he could put some of the CCC men to work on finishing these buildings. In his response, Assistant Regional Director Herbert Maier was unsure if this could be arranged, but he reassured Macy that "this office will do everything possible to assist you in effecting completion of the buildings by some means." He promised to take the matter up with Conrad Wirth in person the next week.³¹

30 Superintendent's Narrative Report, 14 January 1941:3, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 8, 1941, Olympic National Park Archives; Park Buildings, Road Survey Job Allotted Funds, *Port Angeles Evening News*, 4 February 1941, 1:3; Approval Given \$850,000 WPA Airport Project For Western Part Of County, *Port Angeles Evening News*, 4 February 1941, 1:6-8; Almost 40 Billion Dollars Already Allocated For National Defense Work, *Port Angeles Evening News*, 26 March 1941, 1:1-2.

31 Superintendent's Narrative Report, 14 January 1941:3, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 8, 1941, Olympic National Park Archives;; H. Maier to Preston Macy, 8 May 1941, Preston Macy Papers, Accession No. 3211, box 1, file 24, University of Washington Libraries, Special Collections Division, 1-2 (copy in Accession No. OLYM-710, Catalog No. OLYM-29764, Rothman Collection, box 1, file 26, Olympic National Park Archives).

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Despite possible funding problems, Macy was able to keep work moving on the two primary buildings at park headquarters. A reporter for the *Port Angeles Evening News* visited the site in early June and toured the buildings, noting later that there was still quite a bit of work needed to complete them. Charlie Brown, the park's first ranger, helped to finish the administration building. "I remember we laid the floor upstairs in '41," he said. "The office helped and the ranger. So there was a lot of hammer marks." Superintendent Macy and his family moved into the new residence in September and by early October, the rest of the staff were "on pins and needles, waiting for 'moving day' to get into the new administration building" and away from the crowded situation in the federal building. They settled into their new offices on October 21. Both buildings still had some unfinished work, but everyone was glad to be in the new headquarters at last.³²

The CCC men from Camp Elwha continued to work on the park headquarters site during 1941, although they apparently did not assist on the administration building or superintendent's house as Macy had requested. Instead, they built an equipment shed (Building #5) in the utility area. Foreman Ed Gilliland supervised a crew of five men (Leo Michaels, Edgar Steig, Gordon McLaughlin, Raymond Kilen, and Walter Musgrave) who used pneumatic jack hammers and smaller chipping hammers to cut the stone for use in the end walls and lower portion of the rear wall. Another group of three men (Karl Tommas, James Beck, and Jerome Shepard), supervised by Everett L. Stitz, did the more skilled work of fitting the stone and laying it up with mortar. A third crew, under the direction of K. E. Rudolph from Port Angeles, framed up the walls and roof. Park Ranger Charlie Brown later praised the work of the CCC men on the equipment shed, noting that they did "just as good of a job" as the professional stone masons had on the main headquarters buildings. "It wasn't extensive," he recalled, "but it was just good work. . . . So they got to be quite capable."

32 Rhododendrons Thrive At Local Park Service Headquarters Area, *Port Angeles Evening News*, 3 June 1941, 1:1-2; Charlie Brown, interview with Syd Jacobs and Russ Dalton, 19 January 1981, 4, transcript on file, Olympic National Park Archives; National Park Offices Moving To New Building, *Port Angeles Evening News*, 2 August 1941, 1:2; Superintendent's Narrative Report, 7 October 1941:3, 12 November 1941:1, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 8, 1941, Olympic National Park Archives.

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The equipment shed was started in March and finished before the end of 1941.³³

In addition to the equipment shed, the CCC crews began work on another large building in the utility area, the equipment and supply storage shed (Building #6). Like the first building, this one was to be a combination of stone and frame construction. By the end of July, the men had stockpiled stone from the Tumwater Creek quarry at the construction site. Work then came to a temporary halt as the enrollment at Camp Elwha dwindled and the few men available were called out on fires. A small group of men returned to work in September, but the work proceeded slowly. The following month, there were no enrollees available so the work crew consisted of four CCC foremen and project supervisor Willis Pabst.³⁴

Although most of the landscaping had been completed under the WPA in 1940, a group of CCC men worked in 1941 on the lighting system to illuminate the walkways and roads at park headquarters. Max Walliser, the park's landscape architect, had completed drawings for two types of lights in October 1940. The first was a combination stone bench and floodlight intended for use along the walks. The second, designed for use along the roads, was a section of peeled cedar log set upright in the ground, with an inset light fixture and faceted top surface. A small crew started installing these in May 1941 but they were made operational only after additional work in 1953. Today there are eight stone benches and three log lights remaining at headquarters.³⁵

33 Local CCC Work Demonstrating Opportunity Open To Enrollees, *Port Angeles Evening News*, 26 May 1941, 8:4-5; Charlie Brown, interview with Syd Jacobs and Russ Dalton, 19 January 1981, 14, transcript on file, Olympic National Park Archives; Superintendent's Narrative Report, 9 April 1941:2, 13 May 1941:2-3, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 8, 1941, Olympic National Park Archives.

34 Superintendent's Narrative Report, 8 August 1941:3, 7 October 1941:3, 12 November 1941:2, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 8, 1941, Olympic National Park Archives.

35 M.Walliser, Flood Lights, Drawing No. NP/OLY-2081, 8 October 1940, Plan Case, file Headquarters, Olympic National Park Archives; CCC Camp Elwha Hopes To Build Up Complement To Full Strength, *Port Angeles Evening News*, 27 May 1941, 7:3-5; Superintendent's Narrative Report, 11 May 1953:2, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 20, 1953, Olympic National Park Archives; National Park Service, *Cultural Landscape Inventory*, 3b-12.

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All construction projects came to a complete halt in December 1941 following the bombing of Pearl Harbor and the entry of the United States into World War II. The CCC men from Camp Elwha were assigned to work on the new airport, probably the proposed one near Cape Flattery. A small crew returned to the park headquarters in February, however, and completed laying two-thirds of the underground cable for the roadway lighting system. A very small crew of CCC enrollees continued to work on the equipment and supply storage shed in May. Superintendent Macy said that the progress on this building was slow with so little help, and he predicted that the building would not be completed if the federal government ended the CCC program. Just as Macy foresaw, the building remained uncompleted after the CCC vacated Camp Elwha by the end of August 1942. The nationwide program ended later that year and many of the young CCC men joined the military.³⁶

Both funding and personnel remained limited during the war years. The park staff dwindled as men were called into the military. Those remaining spent much of their time supplying more than a dozen remote observation posts used by the Aircraft Warning System. Despite these difficulties, some of the remaining staff managed to finish the office (east) end of the incomplete equipment and supply storage shed (Building #6) in the utility area by the end of the summer of 1943. This allowed the park to move warehouse operations to headquarters, saving \$55 per month in rent on space in Port Angeles. The following year the park hired a contractor to finish the west end of this building. The work included exterior board and batten siding, shake roof, masonry chimney, and electrical wiring. The park made this part of the building into a fire cache once it was finished in the fall of 1944. During this same time, the park completed a small amount of work on the administration building. In 1943 this included finishing the basement electrical system, installing baseboards, preparing all the woodwork for stain and varnish, and putting a fire door on the furnace room. The following year, the same contractor who had finished the equipment and supply storage building in the utility area also completed several small construction and repair jobs on the administration building. These included completion

³⁶ Superintendent's Narrative Report, 9 January 1942:2, 11 March 1942:3, 11 June 1942:1-2, 10 September 1942:5, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 9, 1942, Olympic National Park Archives.

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of the reception room; installation of a door on the vault in the fiscal office; construction of photographic rooms in the basement; plastering of the basement ceilings; fixing the fire door on the furnace room in the basement; and replacing the window putty and painting all of the exterior window frames. All of this work was finished by the fall of 1944.³⁷

The park buildings got an unexpected test of structural integrity when a strong earthquake struck about 9:15 in the morning of June 23, 1946, lasting about a minute and a half. "Even though the Superintendent's residence has an 8 inch reinforced concrete wall abutted by 18 inches of stone to the second story, the house shook and swayed very perceptively," reported Macy. His wife, who was standing when the quake hit, said that the "light fixtures swayed erratically, the door chimes rang from the movement and the shrubs in the yard fluttered considerably." Despite this, Macy could find no damage.³⁸

The tight budgets experienced during the wartime years did not relax much at the end of the war. Tourist visits to the national parks were increasing, but Congress maintained the agency's wartime appropriation through FY1946. This increased to \$26 million in FY1947 and then fell the following year to just \$10 million, not rising much again until FY1950. In 1949, Newton B. Drury, Director of the National Park Service, listed the tremendous backlog of needs for parks across the country: physical improvements (\$140 million), roads and trails (\$175 million), and parkways already authorized by Congress (\$181 million). Congress gave the park service just \$14 million that year.³⁹

At Olympic National Park, the staff did only minor construction projects in the late 1940s. For instance, during 1948 the park spent \$1.03 for work on the administration building and another \$2.02 on the superintendent's residence. The following year, park personnel constructed brick flues in the

37 Superintendent's Narrative Report, 15 June 1943:2-3, 13 July 1943:4, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 10, 1943, Olympic National Park Archives; Superintendent's Narrative Report, 13 September 1944:5-6, 11 October 1944:6, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 11, 1944, Olympic National Park Archives.

38 Superintendent's Narrative Report, 10 July 1946:4-5, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 13, 1946, Olympic National Park Archives.

39 John Ise, *Our National Park Policy: A Critical History* (Baltimore: Johns Hopkins Press, 1961), 455.

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equipment shed/carpenter shop for fire protection. On a more visible project, workers finished clearing and leveling the area around the administration building and seeded it to lawn in 1947. Four years later, the lawn at headquarters was rehabilitated. Toward the end of the decade, however, Superintendent Macy was hopeful that the park would receive a 1949 fiscal year appropriation of \$60,000 for park housing. "The beginning of the work has not yet been authorized for reasons that perhaps none of us understand," he wrote. "We, however, trust that everything shall be in readiness for immediate action on construction as soon as the funds are made available and authority to proceed has been received." The funds did not arrive and Macy retired in September 1951, long before the park got any appropriation for additional housing. He was replaced by Fred J. Overly, who had served as the park's chief ranger since 1938.⁴⁰

During the lean years of the early 1950s, Olympic National Park staff accomplished a few small construction projects. The park installed a new radio system in 1950 to improve park-wide communication. Workers cleared the site for a new radio building at headquarters in December 1949 and buried cables from there to the administration building. The small concrete block building (no building #) was completed in June 1950; similar buildings were constructed at Staircase and Kalaloch. Overly used part of his annual leave during October 1952 to build a combination wood and tool storage building (Building #12) near the superintendent's residence. He used "materials obtained from salvage operations" on the small structure, which was designed by R. F. Uhte in January 1952. In the spring of 1952, workers cleared and leveled a lumber storage yard southeast of the existing utility area. Plans from 1952 showed that two buildings were proposed for the western side of this yard, but neither was constructed.⁴¹

40 Preston P. Macy to Director, 18 August 1948:1, Accession No. OLYM-438, Catalog No. OLYM 18405, box 3, file 3/3; Superintendent's Narrative Report, 10 June 1947:3, 8 July 1947:2-3, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 14, 1947, Olympic National Park Archives; Superintendent's Narrative Report, 11 May 1949:3, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 16, 1949, Olympic National Park Archives; Schedule of Deferred Maintenance, Estimate of Needs For Olympic National Park, no date, Accession No. OLYM-438, Catalog No. OLYM 18405, box 3, file 3/3, Olympic National Park Archives; Preston P. Macy to Regional Director, 13 August 1948, Preston Macy Papers, Accession No. 3211, box 1, file 15, University of Washington Libraries, Special Collections Division (copy in Accession No. OLYM-710, Catalog No. OLYM 29764, Rothman Collection, box 1, file 41:3).

41 Superintendent's Narrative Report, 12 January 1950:2-3, Accession No. OLYM-420, Catalog No.

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Superintendent Overly developed some innovative partnerships in the 1950s that resulted in the construction of two buildings for the park. For the first venture, he arranged for the park to collaborate with the Clallam County Historical Society to build the Pioneer Memorial Museum on the thirty-four acres adjoining the headquarters site. The historical society raised money, the park donated materials, and the building trades class from Roosevelt High School in Port Angeles provided the labor. Work began in June 1953 and was finished in 1957. The completed building, owned by the National Park Service, serves as the visitor information center for Olympic National Park, with space initially provided for the historical society's exhibits. The building trades class went on to construct one more building at park headquarters in 1957-1958.⁴²

While the historical society and park were building the new museum/visitor center, Clallam County road crews began work late in 1954 to extend Park Avenue eastward to intersect with the Heart O' the Hills Highway, which was then under construction. Up to this time, Park Avenue had ended at the eastern entrance into park headquarters, blocked by the deep gully where Peabody Creek ran along the eastern boundary of the property. In October 1954, the county let a contract to build a fill across the creek, and presumably the work was completed by early the next year. This project stimulated the park to plan an alternative entrance road to the headquarters area, but the actual construction did not occur for a few more years.⁴³

OLYM-18242, box 1, file 16, 1949, Olympic National Park Archives; Superintendent's Narrative Report, 10 July 1950:2, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 17, 1950, Olympic National Park Archives; Superintendent's Narrative Report, 9 May 1952:3, 9 November 1952:1, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 19, 1952, Olympic National Park Archives; R. F. Uhte, Wood & Tool Storage, Drawing No. OLY. N.P. 2222, 3 January 1952, Plan Case, file Headquarters, Olympic National Park Archives; H. G. Fowler, Storage Yard, Drawing No. OLY 2224, 30 January 1952, Plan Case, file Headquarters, Olympic National Park Archives.

42 Historical Society Assumes Sponsorship Of Museum Construction by Olympic Nat'l Park, *Port Angeles Evening News*, 2 December 1952, 8:4-5; Park Service Regional Office OK's Plans For Proposed Historical Museum Here, *Port Angeles Evening News*, 3 March 1953, 1:1-2; Aldwell Breaks 1st Ground For Pioneer Museum, *Port Angeles Evening News*, 15 June 1953, 1:1; New National Park Museum Here Only One In Country Built By Community Effort, Funds, *Port Angeles Evening News*, 14 October 1957, 1:1-3.

43 Superintendent's Narrative Report, 9 July 1954:4, 12 August 1954:2, 4, 13 September 1954:2, 5, 10 November 1954:3-4, 11 January 1955:2, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 22, 1954, Olympic National Park Archives.

Olympic National Park was not alone in having a long list of unfulfilled needs. Parks nationwide had suffered from years of neglect. Visits to the national parks had climbed steadily since the prewar years, rising from 17 million in 1940 to 56 million in 1955. In the Pacific West Region, visits doubled from 3.4 million in 1940 to 6.8 million in 1950. The crowds led to traffic jams, long lines at restrooms, and general frustration. At the end of the Korean War in 1953, President Dwight D. Eisenhower faced a recession and, like President Roosevelt, he looked to public works as a way to keep the economy going. In January 1956, when National Park Service Director Conrad L. Wirth proposed an enormous ten-year construction program to modernize the national parks, Eisenhower approved of the plan. The previously stingy Congress backed the proposal as well and agreed to appropriate \$700 million over the next ten years. The program was named Mission 66 and aimed to have the work to be completed by 1966, the fiftieth anniversary of the National Park Service. In the end, the funding approached \$1 billion and not only built roads and buildings but also expanded staff and increased the number of units in the park system from 194 to 254.⁴⁴

Under Mission 66, each park wrote a prospectus that outlined current needs for both physical and staffing improvements and discussed how to meet them. Olympic National Park, formed during the waning days of the depression-era public works programs and then hit with wartime budget shortages, had a long list of needs throughout the park. The projects proposed for the park headquarters focused on three areas: a change in the visitor entrance to the administration building; construction of employee housing; and construction of additional buildings in the utility area.⁴⁵

As the administration building was originally designed, visitors parked on the south side and entered through the door near the southwest corner. The public lobby, however, with a visitor information booth, was located in the

44 Elaine Jackson-Retondo and Len Warner, Pacific West Region Mission 66 Resources, National Register of Historic Places, Multiple Property Documentation Form, Draft, 10 August 2004, E4-E5, E16-E18.

45 Jackson-Retondo and Warner, Pacific West Region Mission 66 Resources, E-11; National Park Service, *Mission 66 Prospectus, Olympic National Park*, 11 May 1956, 34-39, Accession No OLYM-438, box 3, file 3/15 Park Planning Mission 66, Olympic National Park Archives.

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northeast corner. This made it "awkwardly accessible," noted the park's Mission 66 prospectus. "Visitors enter the rear of the building and become confused." As one of the first priorities, the document recommended appropriating \$6,500 to build a circular entrance road on the north side of the administration building, with parking for twenty cars. This project was ready for paving by the end of 1957. Randall Kilmer Construction Company was awarded the paving contract, with a bid of \$2,424.32. In an ironic twist, as this new entrance for visitors was completed at the administration building, the majority of the park's visitors were being re-directed away from park headquarters to the new visitor information center in the Pioneer Memorial Museum, which had just opened that fall.⁴⁶

One of the top priorities nationwide during Mission 66 was construction of additional employee housing in the national parks. By 1955, park housing was both inadequate and substandard. Planners recommended construction of 1,000 single family units and another 400 seasonal units. At the end of the ten year period, employee housing had increased by 743 single family units and 496 multiplex units. Architect Thomas C. Vint, in the Western Office of Design and Construction, surveyed the wives of park service employees to see what they wanted in a home. He and his staff then developed standard plans that were simple, inexpensive, durable, and attractive.⁴⁷

The Mission 66 prospectus for Olympic National Park proposed construction of two housing units at the park headquarters: a single family home for the assistant superintendent and an apartment complex with four to six units for seasonal employees. By March 1957, Overly had arranged to have the buildings trades class from the high school build the assistant superintendent's house (Building #20), with the work to start with the new school year in September. He recommended using contract labor to construct the apartment building (Building #17).⁴⁸

46 National Park Service, *Mission 66 Prospectus*, 34, 39; Superintendent's Narrative Report, 12 December 1957:6, 15 January 1958:6, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 23, 1957, Olympic National Park Archives.

47 Jackson-Retondo and Warner, Pacific West Region Mission 66 Resources, E-7, E-12, E-25.

48 Fred J. Overly to Chief, Western Office of Design and Construction, 21 March 1957, Fred J. Overly Papers, Accession No. 2214, box 2, file 9, University of Washington Libraries, Special Collections Division.

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The assistant superintendent's residence was completed during the 1957-1958 school year, but not without some heated exchanges between Superintendent Overly and the staff of the Western Office of Design and Construction. Overly had a few relatively minor changes that he wanted after reviewing the preliminary drawings in June. He asked first that the redwood be replaced with western red cedar, a wood readily available on the Olympic Peninsula. He then requested rearranging the floor plan so that the living room was on the north side, with a view to the Strait, and the patio was on the south side in the sunshine. In July, Project B-5-4 received an allotment of \$18,325 to cover materials, site preparation, and utility connections. The site, located on the footprint of a residence shown on the 1942 master plan, was cleared by the end of August. All seemed ready to go.⁴⁹

In late August 1957, Fred T. Johnston, Regional Chief of Operations, noted that Overly needed working drawings for the residence, at least for the foundation, no later than September 4 when the students were going to start work. Overly also wanted the remainder of the working drawings to be sent in stages as the work progressed. He received the foundation drawings, elevations, and some details on September 12, but more than a month later he asked for plans for the plumbing, heating, and electrical systems before they poured the foundation walls. "Otherwise," he wrote, "we intend to proceed to the best of our ability with the assistance of Construction Representative Carlson and our own staff. Please advise." After Overly got no response, the students had to pour the foundation walls without the other plans. The clearly irritated superintendent advised the Regional Office, "We are proceeding with construction on the basis of plans prepared by Mr. Carlson. It will therefore not be necessary for you to provide us with plans." Finally, in late November, Sanford Hill responded to Overly's letters. He said that the plans sent by the Regional Office were what contractors used on similar projects; plans for the mechanical systems had not been mailed because he understood that this work was being done locally. "Under the

49 Fred J. Overly to Regional Director, 21 June 1957, Fred J. Overly Papers, Accession No. 2214, box 2, file 9, University of Washington Libraries, Special Collections Division; Superintendent's Narrative Report, 14 August 1957:9, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 23, 1957, Olympic National Park Archives; National Park Service, *Cultural Landscape Inventory*, 2b-1, 2b-2.

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circumstances," he wrote, "we are glad to know that you are now of the opinion that complete plans are necessary for construction of buildings of this type." He asked Overly to send a copy of Carlson's plans for their records.⁵⁰

After the testy beginning, construction of the assistant superintendent's house proceeded smoothly. The students had it framed, roofed, and clad with diagonal sheathing by the end of December. The plumbing was also roughed in and the park had let a contract for the heating system for \$945. Work moved inside in January when the class was insulating, hanging sheetrock, and installing doors and windows. The heating system was completed and park employees were doing the wiring. The students finished up the home in the spring of 1958, leaving just walks, driveway, and landscaping still to be done. It was ready for occupancy by the end of June.⁵¹

The other housing project evidently proceeded without the drama of the first one. The site for the six-unit apartment was cleared in the summer of 1957, at the same time the other site was prepared. Construction did not start, however, for another year. The park let the contract in mid-June 1958 to G. W. Barr Construction Company for a bid of \$72,998; this price included the six-car garage (Building #16) adjacent to the apartment. The work proceeded rapidly and was mostly completed by the end of the year. The remainder of the work was finished over the next few months and the park accepted the contract at the end of June 1959. The following month the park

50 Fred T. Johnston to Chief of Western Office of Design and Construction, 21 August 1957; Fred J. Overly to Regional Director, 22 August 1957; Fred J. Overly to Chief of Western Office of Design and Construction, 21 October 1957; Fred J. Overly to Chief of Western Office of Design and Construction, 13 November 1957; Sanford Hill to Superintendent, 27 November 1957; all in Fred J. Overly Papers, Accession No. 2214, box 2, file 9, University of Washington Libraries, Special Collections Division. Superintendent's Narrative Report, 15 November 1957:8, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 23, 1957, Olympic National Park Archives.

51 Superintendent's Narrative Report, 12 December 1957:7, 15 January 1958:7, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 23, 1957, Olympic National Park Archives; Superintendent's Narrative Report, 13 February 1958:6, 12 March 1958:6, 14 April 1958:7, 12 May 1958:6, 25 July 1958:7, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 24, 1958, Olympic National Park Archives.

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hired day labor to complete sidewalks, patios, and rough grading of the site.⁵²

Much of the construction during Mission 66 took place in the utility area, which had suffered from inadequate facilities for years. In its Mission 66 prospectus, the park listed three utility buildings as second priority projects and fencing of the area as a third priority job. Landscape architect Sidney Malbon arrived at Olympic National Park in 1956 and stayed for the entire Mission 66 period. He placed great emphasis on the utility area during his stay, seeing it as "the biggest problem" at headquarters. He said that the buildings were inadequate, especially after the park began extensive snowplowing during the winter months. "We had to have a really well equipped garage and lifts to pick up those things," Malbon stated. "So it may not look like it, but that was a whole area that I designed very carefully and that set the pattern for the buildings that are there, which are pretty much in parallel rows."⁵³

Before the official start of Mission 66, Superintendent Overly found ways to augment the park's meager construction budget. In November 1955, he obtained a surplus metal building from nearby Fort Worden, by then abandoned. A crew of men hauled it back to headquarters and set it up in the upper storage yard where it was used to store lumber. The shed (originally Building #13, now #1292, was completed by March 1956.⁵⁴

Once the funding started flowing, the park was able to construct two major buildings in the utility area in 1957. Day labor was used to clear and grade the two sites, with this preliminary work starting in the fall of 1956 while the park awaited the final plans. In June 1957, Owens Brothers of Port Angeles

52 Superintendent's Narrative Report, 14 August 1957:9, 12 September 1957:8, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 23, 1957, Olympic National Park Archives; Superintendent's Narrative Report, 25 July 1958:7, 24 September 1958:11, 21 October 1958:7, November 1958:7, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 24, 1958, Olympic National Park Archives; Superintendent's Narrative Report, June 1959:10, July 1959:11, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 25, 1959, Olympic National Park Archives.

53 National Park Service, *Mission 66 Prospectus*, 39ff.; Sid Malbon, interview with Jacilee Wray and Paul Gleeson, 25 August 2004, 13, transcript on file, Olympic National Park Archives.

54 Superintendent's Narrative Report, 8 December 1955:6, 12 March 1956:6, 11 April 1956:4, 9 May 1956:7, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 22, 1955-1956, Olympic National Park Archives.

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won both project contracts. The bid for the garage and repair shop (Building #9) was \$60,811 while the bid for the equipment storage building (Building #8) was \$21,466. The contractor was given 150 days to complete each building. Work began by July 1957 and was completed by early January 1958. Once these new buildings were put into use, most of the repair and servicing of park equipment moved from Elwha to headquarters. A small extension was added to the east end of the garage and repair shop in the late 1980s.⁵⁵

Overly had hopes of even more construction at park headquarters in 1958. He asked the Regional Office for approval to build two additional equipment storage buildings, identical in design but not length to Building #8. He believed that they would conform to the master plan and relieve the undesirable situation of outside equipment storage. He evidently received neither approval nor funding for these. In addition, Overly planned to have the high school building trades class construct a multi-car automobile shelter (Building #19) on the southern side of the administration building, but this project was cancelled in the spring of 1958 when it became apparent that it could not be completed that year. Despite these setbacks, two additional improvements to the utility area were completed under Mission 66. The park installed cyclone fencing around the area after obtaining the materials through the government surplus program. This was completed in 1959. Later that year, the Randall Kilmer Construction Company received a contract to pave the utility area. This ended Mission 66 projects at headquarters.⁵⁶

55 Superintendent's Narrative Report, 12 October 1956:5, 15 January 1957:4, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 22, 1955-1956, Olympic National Park Archives; Superintendent's Narrative Report, 12 February 1957 Monthly Progress Report, 12 July 1957:7 and Monthly Progress Report, 13 August 1957:8, 12 September 1957:7, 10 October 1957:8, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 23, 1957, Olympic National Park Archives; Superintendent's Narrative Report, 13 February 1958:6, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 24, 1958, Olympic National Park Archives; Fred J. Overly to Regional Director, 24 March 1958, Fred J. Overly Papers, Accession No. 2214, box 2, file 8, University of Washington Libraries, Special Collections Division; Dave Colthorp, Buildings Foreman, informal interview with Nancy F. Renk, 23 October 2008.

56 Fred J. Overly to Regional Director, 24 March 1958, Fred J. Overly Papers, Accession No. 2214, box 2, file 8, University of Washington Libraries, Special Collections Division; Superintendent's Narrative Report, 12 May 1958:6, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 24, 1958, Olympic National Park Archives; Superintendent's Narrative Report, February 1959:6, July 1959:11, Accession No. OLYM-420, Catalog No. OLYM-18242, box 1, file 25, 1959, Olympic National Park

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By the end of this second major building program at Olympic National Park, the headquarters included fourteen buildings, and another ten have been added since then. In addition, one of the original buildings burned and was rebuilt. The equipment and supply storage building (Building #6) caught fire in 1965 and burned the frame portion and gutted the stone section at the eastern end. The park contracted with Delguzzi Construction Company to rebuild the structure (now Building #1000), with the work completed in 1970. A small extension was added to the western end in 1984.⁵⁷

In the years since the end of the Mission 66 construction, only one building has been added to the headquarters site outside the utility area. This is the grounds maintenance shed (Building #1240), built in 1968 in the woods across from the assistant superintendent's house. Other existing buildings outside the utility area were altered in some way or had their uses modified. Park employees Dave Colthorp and Fred Manzer converted the apartment garages to offices around 1984. The building was later changed to a bunkhouse and then back into offices in 1990. The residences of both the superintendent and assistant superintendent were converted into offices in the 1970s. The first one was renovated in 1986 and then, about four years later, the interior of the garage was redone. The garage door at the assistant superintendent's home was filled in during the late 1980s so the space could be used for offices. Finally, park staff installed a new door on the superintendent's wood shed and set it on a new foundation in 2008.⁵⁸

Considerably more work has been done in the park's utility area at headquarters, both with new construction and renovations. In 1977 a small building was constructed along the western edge of the utility yard between buildings #5 and #6/1000. The small structure cost just \$800 and was built

Archives.

57 National Park Service, *Cultural Landscape Inventory*, 2b-2; Cornell, Warehouse and Fire Cache, Drawing No. NP-OLY 3348-A, February 1967, As Constructed Drawing, page 11; Gail E. H. Evans, Equipment and Supply Storage Building, PNRO Inventory, 1984.

58 Jackson-Retondo and Warner, Pacific West Region Mission 66 Resources, Appendix, 20; National Park Service, *Cultural Landscape Inventory*, 2b-3; Superintendent's Annual Report, 1986:9, Accession No. OLYM-443, Catalog No. OLYM 18242, box 1, file 8, A2621, Reports - Annual, 1986; Dave Colthorp, Buildings Foreman, informal interview with Nancy F. Renk, 23 October 2008.

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from materials salvaged from the Myron garage at Elwha. It initially served as the roads repair shop, then the welding shop, and now the paint shop.⁵⁹

The cultural resource offices (Building #1311) evolved through a series of changes. Originally, there was a building #1310 (also identified as building #8) that housed the Search & Rescue (SAR), and then became the Fire Cache. It was a separate building from cultural resource office. This 1310 building was then remodeled and became the curatorial building. The space between buildings #1310/#8 and #1310 was filled in around 1985 by park employees Dave Colthorp and Don Tinkham.⁶⁰ Building #1311, the cultural resources office, was designed and built by Pacific Component Homes, Inc., of Seattle. The structure is a four-bedroom, one-bath modular home. It was altered slightly to convert the home into offices. The fee office extension was added to the east end of the cultural resource building in 2001. Park architect, Ellen K. Gage, designed this extension.

Just south of the cultural resource building is the fire cache, also known as the emergency operation/fire management building (Building #1549). Designed by park architect Ellen K. Gage, construction began in 1995 and was completed the following year. The newest building (#1551) at park headquarters houses the natural resources staff. Located in the southwest corner of the utility area, the 4,300 square foot building was completed in 2004.⁶¹

Two small buildings were added to the utility area in the early 1990s. The recycle shed (Building #1352), was probably built around 1992 when the park initiated a recycling program in conjunction with a local recycling

59 Superintendent's Annual Report, 1977:4, Accession No. OLYM-710, Catalog No. OLYM-29764, Rothman Collection, box 3, file Supt. Reports, 1970s. Note: On all reviewed park building lists, this structure is numbered 1292, the same as the 1956 lumber storage building, including the 2003 Cultural Landscape Inventory.

60 Pacific Component Homes, Inc., Drawing No. 4-1-186, file 3-1, Maintenance Plan Case; Dave Colthorp, Buildings Foreman, informal interview with Nancy F. Renk, 23 October 2008; National Park Service, *Cultural Landscape Inventory*, 2b-3

61 Ellen K. Gage, Fire Cache, Drawing No. 149/60,103, May 1994, revised March 1995, file 3-1, Maintenance Plan Case; Superintendent's Annual Report, 1994-1995:21, Accession No. OLYM-443, Catalog No. OLYM-18242, box 1, file 20, A2621, Reports - Annual, 1994-1995; Superintendent's Annual Report, 2004:3, Accession No. OLYM-443, Catalog No. OLYM-18242, box 1, file 23, Superintendent's Annual Report 2004, Olympic National Park Archives.

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contractor. The bicycle shed (Building 1353) was constructed around the same time. It was enclosed around 1995 and now is used to store tools for the park's VIP program.⁶²

Three buildings were added to the upper storage yard. In the early 1980s, park employees Dave Colthorp and Don Tinkham built a greenhouse (no building #) there so the park could grow its own native plants for landscaping projects in the park. Not long after, the same pair built the road maintenance storage shed (Building #1241). The last one, the small greenhouse office (no building #), was constructed around 2003.⁶³

The park headquarters, tucked away on the forested hillside above Port Angeles, now contains twenty-four buildings dating from 1940 to 2004. In the late 1930s, the newly formed Olympic National Park struggled against great odds to complete the first six buildings, facing tight budgets, waning public works programs, and competition from national defense projects for both funding and labor. Aside from two small utilitarian structures added in the early 1950s, these six buildings were all that the park had at headquarters until the large influx of federal funding during Mission 66. This ambitious program allowed the park to add five new buildings and one military surplus shed between 1956 and 1959. With one exception, all new construction since that time has been confined to the utility area, with buildings added one at a time as funding became available. In 1940, as the headquarters was starting to take shape, a reporter for the local newspaper described the plan for the park's new administrative site. "The buildings, rustic in character, will blend with the background," he wrote, "and the winding roads will not detract from the planned effect of a natural setting for a headquarters of a wilderness park." A visitor to the public areas of park headquarters would find this description applicable today.⁶⁴

62 Superintendent's Annual Report, 1992:19, Accession No. OLYM-443, Catalog No. OLYM-18242, box 1, file 17, A2621, Reports - Annual, 1992; Dave Colthorp, Buildings Foreman, informal interview with Nancy F. Renk, 23 October 2008.

63 Dave Colthorp, Buildings Foreman, informal interview with Nancy F. Renk, 23 October 2008.

64 Rhododendrons Are Being Planted at Park Headquarters, *Port Angeles Evening News*, 5 March 1940, 6:4-5.

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Headquarters Buildings

<u>Original #/Current #</u>	<u>Original Name/Current Name</u>	<u>Date Completed</u>
1	Administration Building	1941
2	Superintendent's Residence/ Natural Resources Offices	1941
3	Gas and Oil House	1940
4	Transformer Vault and Pump House	1940-
1941	VIP, WCC, and Cultural Resources Tool Shed	
5	Equipment Shed/Roads and Trail Shop	1941
6/1000	Equipment and Supply Storage/ Maintenance and Procurement Building	1944/1970
8	Equipment Shed/Electrician and Communication Shop	1958
9	Garage and Repair Shop/Heavy Equipment Repair and Welding Shop	1958
12	Superintendent's Wood Shed/Wood Shed	1952
13/1292	Lumber Storage Shed/Roads Maintenance Storage Shed	1956
16	Apartment Garage/Offices	1959
17	Apartments	1959
20	Assistant Superintendent's Residence/ Communications and Enforcement Office	1958
1240	Grounds Maintenance Shed	1968
1241	Roads Maintenance Storage Building	Early 1980s
(no #)	Welding Shop/Painter's Shop	1977
1310 and 1311	EOC and Fire Cache/ Ranger, Cultural Resources, Curatorial Facility and Fee Office	ca. 1979, 2001
1352	Recycle Shed	ca. 1992
1353	Employee Bicycle Shed/VIP Tool Shed	Early 1990s
1549	Emergency Operations Center/Fire Cache	1996
1551	Natural Resources Offices	2004
No #	Radio Building	1950
No #	Greenhouse	Early 1980s
No #	Storage Building/Greenhouse Office	ca. 2003

III Significance and Historic Fabric

Within the Headquarters Historic District there are 24 buildings and structures built over the course of 72 years since the creation of the park. These buildings reflect the initial vision of park creation, the improvements and expansion of the Mission 66 decade, and the expanding mission of new responsibilities at the beginning of the 21st century.

Architecture reflects the style and values of a culture. These values are both cherished and challenged over the course of history, resulting in a constant flow of new design standards and expression. The design of buildings and their placement on the landscape mirrors this constant flux of cultural tastes and ideals.

Every building to a certain extent embodies these qualities, most in modern mannerisms and regarded with little concern. Some buildings though extend beyond the norm through their design and use of materials to convey a strong sense of the values of an historical period. At the headquarters district, there are 14 structures and landscape features that provide understanding to the history of Olympic National Park. These buildings fall into two distinct groups, those associated with the initial development of the headquarters area in the early 1940's and those who were the outgrowth of the 1950's and 1960's Mission 66 program.

When the Park was created, architectural values and ideals were in a state of transition. The past reliance for design standards on historical precedence and the belief that Park buildings should blend into a naturalistic setting were being challenged. This challenge had several facets. There was a changing attitude that architectural construction was an industrial process, less akin to craftsmanship, and more associated with the engineered production of building products. A new philosophy of architectural design was emphasizing structural and material integrity, functionalism, and simple geometric form. Society was expressing a feeling that general improvement

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was associated with change. These expanding ideals influenced the planning and design of both groups of historic building in the Headquarters' district.

Since its inception, the National Park Service had adopted the Rustic style of architecture as appropriate to a naturalistic environment. This idea was changing with the influx of young architects who had studied modernist design in college and were now joining the Park Service. At first they introduced the modernism principles through a sly and subtle blending with Rustic design. As time past, the expression of modernism in Park Service structure grew to full manifestation with Mission 66. For the designers of Park Service structure, the creation of Olympic National Park offered the opportunity to begin the modernist transition.

The first group was constructed within the first six years of the park creation. These buildings, the administration building, the superintendent's residence, the gas and oil house, the transformer and pump house, and two equipment supply sheds, generally express themselves as pertaining to the Rustic style of design associated with the early years of National Park development. Located in a natural setting, the rustic buildings were to blend with the surrounding landscape. Wood shakes were used for roofing, logs for structure, stone for mass and support. Windows were deeply mullioned, trimmed to give feel of heavy texture, and recessed in the wall plane. Scale and weight were often exaggerated for effect. If one though contrasts the design of this first group of buildings in the Headquarters' district to earlier park service buildings there is a refinement and reserve to their character that reflects an evolving stylistic transition. This is best illustrated in a comparison of the Administration Building at Mount Rainier and the Administration Building at Olympic. These building essentially have the same floor plan, or space organization. As one can see, the plans have an offset main entry into a lobby, offices along the right, and clerical across the rear. A main hallway provides the stairway to the second floor.

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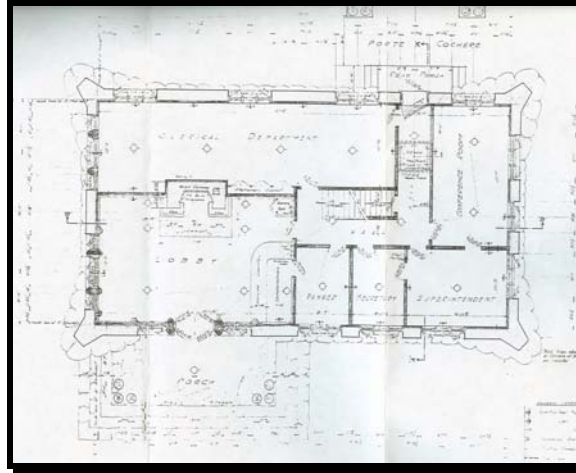


Figure No. III-1: Floor Plan of the Administration Building at Mount Rainier, designed in 1927 and constructed in 1928.

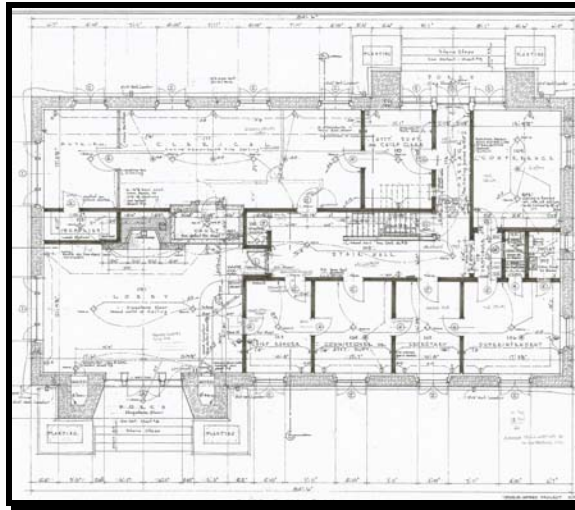


Figure No. III-2: Floor Plan of the Administration Building at Olympic National Park, designed in 1939 and constructed in the early 1940's.

The administration building at Olympic is larger, being 10 feet wider and 20 longer in length, but retains all the main elements of the Mount Rainier design.

In mass, the similarities are again present. Both structures are linear, two stories in height, with a simple gable roof.

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Figure No. III-3: The Administration Building at Mount Rainier, 1928.

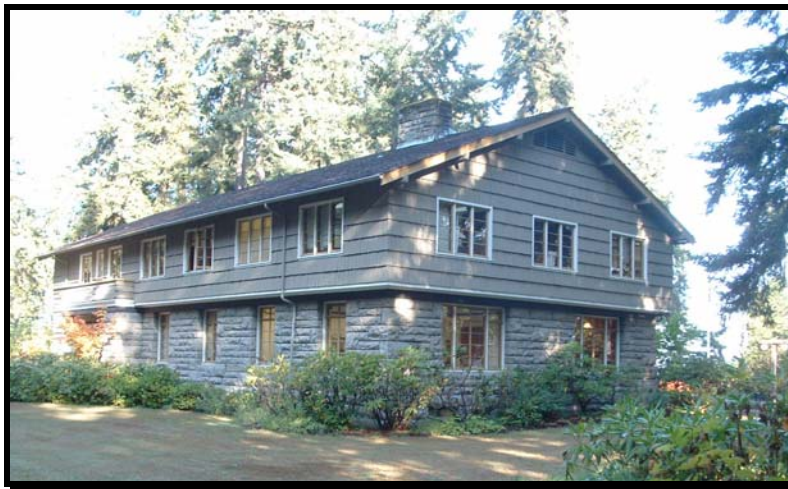


Figure No. III-4: The Administration Building at Olympic.

While the floor plans and massing are very similar, the stylistic changes taking place in National Park Service design is best understood by studying the mannerism of materials and features.

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Figure No. III-5: On the left is a corner of the Administration Building at Mount Rainier; on the right is a corner of the Administration building at Olympic.

The Administration Building at Mount Rainier expresses the Rustic Style through the use of the natural glacier boulders, log siding, and heavy log columns. The windows are recessed within the wall plane for depth and texture. Though architectural historians refer to the Administration Building at Olympic as “Late Rustic”, it is a modernistic expression of that style. The stone of the first floor does have a rusticated surface finish, but it is carefully laid in courses, and has predominately squared mortar joints. Occasional diagonal mortar joints break the lineal stacking effect of vertical joints, but they are crisp and pronounced. The sill beam at the top of the first floor stone is squared, and establishes the strong horizontal line of the second floor. The second floor wall is sheathed with shakes, but installed in courses to specifically align with the top, bottom, and mullions of the windows. The second floor windows are not recessed, but rather are a continuous element of the wall plane. The building is characterized by a rectangularity of line, a

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simplification of form, and a strong horizontality. Due to these features, the historian Ethan Carr feels the Administration Building at Olympic National Park "...revealed an interesting stylistic transition..." for the National Park Service and "...perhaps more than any other single building [in the Park Service] demonstrated the gradual evolution from rustic to modernist park architecture."¹

Similar characteristics of the late Rustic/early Modernist design ideals can be found in the other five buildings of this early 1940's group of structures. The dates of the construction drawings for these buildings illustrates that modernist trends were influencing the design process even prior to the Administration Building.

Early Headquarters Building Design Development				
Bldg #	Building	Date of Design Drawings	Architect	Date of Construction
#2	Superintendent's House	Feb. 17, 1939 Preliminary July 31, 1939 Working Drawings	Riggs	1940
#1000 (#6)	Equipment Supply Shed	May 10, 1939	Land	1944
#1	Administration Building	July 14, 1939	Riggs	1940
#4	Transformer & Pump House	July, 1939	Walliser	1940
#5	Equipment Shed	Jan. 7, 1940	Cecil Doty	1941
#3	Gas & Oil House	May 6, 1940	Norgand	1940

Examples of these design elements in buildings beside the Administration Building include:

1. The alignment of the shake siding and window frames, and the course stone of the Superintendent's House.

¹ Carr, Ethan, *Mission 66: Modernism and the National Park Service*, University of Massachusetts Press, 2007, p.166.

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2. The simplified detailing of the beams and columns of the Gas & Oil House.
3. The use of reverse board and batten on the gable ends of the Equipment Shed, a detail that was used nearly 20 years later on the 1957 Auto Shop.



Figure No. III-6: The modernistic detailing of the Superintendent's House and the Gas and Oil House.



Figure No. III-7: Note the simplified treatment of the beam ends and the use of reverse board and batten at the gable.

Three of the Mission 66 goals for Olympic National Park were housing for seasonal personnel, an assistance superintendent's residence, and additional

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warehouse/telecommunication facilities. By now stylistic elements of modernistic design were being fully accepted into the vocabulary of park architecture.



Figure No. III-8: Auto shop (1958) at top, and apartments (left -1959) and assistant Superintendent's residence (right - 1958).

Examples of these elements can be seen in the simplified forms of the structure, use of clean horizontal lines, lack of ornamentation, and floor to ceiling glass at the seasonal housing for a strong connection between interior and exterior. Through the use of color and material, the building acknowledged their surroundings, but the Rustic concept of blending with the setting had evolved to one of a respectful contrast as a form of a compliment in appreciating the beauty of nature.

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The buildings of the Headquarters' district are significant both on a collective as well as individual basis. The buildings represent a period of an emerging new approach to the design, management and administration of a park. Industrial expansion, growing popularity of the parks, and a new vision of the world required an increase in functionality and efficiency in serving the expectations of the public. From its very beginning, Olympic National Park was something new to the Park Service, both in character and promise. The integration of modernism into park building design was an integral part of this new direction.

Significance for historic structures is embodied within aspects of both design and material fabric. Significant design elements that need to be preserved include the landscape setting, the relationship of the buildings to each other, existing massing, the horizontal shake siding and the vertical board siding, the shake roofs on the most important buildings, exposed beams where present, and the stone pattern of the individual structures.

In 2003 there was a very thorough Cultural Landscape Inventory conducted for the park headquarters. It documents the landscape features and their relationship to the historic buildings, providing guidance and understanding of the importance of setting around the structures.

Equally important, significance is also found in all the surviving original historic fabric of the structures. Preservation of original historic fabric is a critical element of any overall conservation program. The degree of historical integrity in terms of materials and historic features varies from structure to structure. Many of the headquarters buildings have a relatively high degree of historic construction, the earlier buildings retaining most of the windows, siding, doors, and masonry of the exterior envelope, and the primary interior spaces from original construction. Some secondary interior areas have been altered, like the new partitions in the Administration building. Though functionally changed from residence to offices, the Superintendent's House retains the basic plan and exterior appearance of the original design. The greatest exception is the Equipment Supply Shed (#1000). Following rebuilding after the 1965 fire, the footprint was enlarged by small additions to the rear and west end. Overall, it is similar in nature to the original mass and scale and fits well within the character of the utility

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area. A more modest exception is the abandonment of the Transformer and Pump House from a primary utility function to that of hand tool storage. Structures like the Equipment Shed (#5) have had all the original bay doors either infilled or replaced with more modern doors. On the interior, several original storage bays have been converted to offices for the trail crew, road crew, and other maintenance functions. Again, though, the building retains much of the original exterior envelope material, including windows, siding, and masonry. It is the only original structure from the early buildings to have its roof altered to metal.

The Mission 66 buildings all express the essential original exterior design. Both the assistance Superintendent's residence and the apartment garages have undergone alterations into offices. The apartments are quite original in their small open plan for the living area, rear patios, efficient bedrooms, and clean exterior lines. In the same manner, the Auto shop and Radio/Electrical shop retain original exterior appearance. These buildings have seen some adjustments due to functional demands and changes in service equipment.

The combination of original material and original design creates the character defining qualities of the historic complex. For the exterior of the earlier structures, these qualities are embodied in the wood shingle roofs; the use of either finely coursed wood shingles or batten-on-board sheathing, course masonry, and the original historic steel or wood windows and doors. On the interior, it is the arrangement of original partitions and the finish materials of the exposed surfaces. Where there are finished interior spaces, it is the relationship between the individual elements to the whole space that defines the historic character and significance of the interiors. Changes to even minor trim, painting of unpainted finishes, and alteration of systems like lighting can have major impact to historically decorative rooms.

Alterations to interior spaces happen to any complex as functional needs evolve. But it is important that the planning and execution of such changes be well thought out and incorporates the retention and preservation of original fabric. Such alterations should contribute and complement the architectural character of the building.

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Where repairs or replacements are required, then the materials should be replaced in-kind. Repairs are preferable to replacement. Modern materials can be used to prolong the useful life of the structure, but must be done without affecting the overall appearance and character of the building. In using modern materials, it is essential their compatibility with the historic assemblies and materials needs to be understood in terms of their application.

A vital part of the process of any repairs, restoration, or alterations is consultation with the cultural resource staff when planning a project. This is especially important for the Headquarters' Historic District where so much original historic fabric is still extant and the design of the buildings is of national significance to understanding the history of the National Park Service.

Elements to Preserve

Site:

The site is organized in a distinct management pattern of administration, residential, and service operations. This pattern, along with the associated historic circulation systems of roads and pedestrian paths, should be respected and preserved. The 2003 Cultural Resource Inventory provides guidelines and recommendations on site-specific elements of the landscape that need to be preserved and considered in future planning.

In regards to landscape and the conservation of the historic structures, the primary issue will be to provide for improved light and airflow around the buildings. Plant material will require periodic management to prune shrubs and bushes away from the walls of the building, reduce duff buildup at the base of buildings, remove potential overhanging branches, and, most importantly, maintain a positive gradient around the structures for proper surface water control.

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Buildings:

The two principal administrative buildings of the Headquarters Historic District have retained a remarkable amount of both original exterior and interior material that adds greatly to the significance of the structures. These buildings are of primary importance to the character of the site and should be preserved with only the minimal of modifications. Demands of administrative functions will always impose the need for changes of furnishings and personnel. As this transpires, it will require careful planning to incorporate these changes with the least disruption to the original plan and historic fabric of the structures. Free standing furnishings that can later easily be moved is preferred over equipment that is permanently attached to the building. Wireless communication offers less cutting and drilling for support systems. Where repairs are required to historic fabric, the work should be installed with in-kind material to match the original.

A similar approach should be applied for the Mission 66 residential buildings, preserving the exterior while meeting the needs of the new internal functions with minimal disruption of the primary original design. This has happened several times already for the apartment garage, and to a lesser extent, the assistance superintendent's house. They are meeting new functions but retaining an original sense of character within the overall site. For these buildings, contemplation of additions or major alteration of the exterior should not be considered for the present.

By their very nature, the buildings of the utility compound are maintenance and program support structures. They will forever be confronting changes. As such, internal modifications and even additions will be required to function. For the historic utility structures, the essential exterior design elements and materials should be preserved while they undergo alterations to meet new needs. Change and alteration to these structures should strive to retain the interpretation of the original design and character of the buildings. Though the original doors of the equipment shed had been closed or replaced, the essential quality of the building is present. These buildings still define an original cultural landscape, though one that continues to develop and evolve.

In all cases, any proposed or planned changes to the Headquarters' Historic District buildings should be reviewed and approved by an historic architect. While replacement in-kind should be the standard for historic fabric, the use of modern materials that will lengthen the maintenance requirements of the original construction or improve energy efficiency without compromising original appearance is encouraged.

New Development

As program demands expand and administrative responsibilities grow, there will be need to address development pressures within the Headquarters' Historic District. The present trend finds planning following much of the traditional program when the park was established. Three distinct functional areas of administration, housing, and equipment/utility define the overall character of development. There are general development standards being practiced that promote a strong preservation ethic for the administration area, an acceptance of limited change in use, but not appearance, in the housing area, and a much higher tolerance and favorable reception of alteration and development in the utility area.

As the park looks forward to the future, it may be useful to review the current development approach and see how it is restructuring the park.

There is an increasing complexity to park management that is reshaping the original concept of a park headquarters. This complexity takes many forms never envisioned or anticipated when the park was created. It has arisen in many ways from societal expectations of how a park functions. These expectations express themselves through increased emphasis on such issues as law enforcement, cultural resource management, natural resource management, wilderness protection, and standards for public facilities and maintenance. In responding to meet the needs of these issues, additional space for personnel and operations has been required. The result has affected the character of park headquarters.

Significance and Historic Fabric

First, in a broad sense, the functionality of the utility area has been challenged. Originally designed as equipment storage buildings, changes in equipment size, maintenance requirements, and environmental regulation have made structures like the Gas & Oil House and the 1939 equipment storage shed unsuitable for modern machinery. Even the bays of the 1965 Auto Shop are not large enough to service some current pieces of modern equipment. At present, there are no “equipment storage facilities” for the greater part of the equipment at park headquarters. Most equipment is stored outside. Meanwhile, small incremental additions of administrative office functions to the utility area have transformed it from strictly maintenance to an area similar to a suburban mixed-use office/industrial park.

For the present, the movement of administrative divisions into the maintenance area seems to work. Continued into the future, the limited space of the utility area may not meet the needs of both administration and maintenance. In the long term, if this practice continues, it would appear to place a restriction on the ability of the maintenance division to expand and function efficiently.

In response, long range planning for the headquarters should begin to address new development in the housing area for administrative divisions. In addition, the space for personnel and equipment is rapidly being exceeded in the Administration Building itself, exceeding both prudent occupancy levels and safety concerns. Space for such modern vital functions like computer and communication services is growing ever more limited with each new level of park responsibility. There is little likelihood that additions or new buildings would be welcome in the area of the Administration Building or former Superintendent’s residence. In the residential area, two of the three buildings have already been transformed to meet growing administration duties. Personnel housing needs, aside from the apartments that seem to be used on a seasonal basis, is fulfilled by the City of Port Angeles. Constructing future divisional administrative facilities in the historic residential area would create a campus of administrative divisions, still readily accessible to the main Administration Building, but removed from the utility area.

Significance and Historic Fabric

It is understood that funding for administrative facilities is difficult, but in reality, the benefit will be more efficient operations for administration, while increasing the opportunity to address the growing needs of maintenance. The expansion of administrative divisions has happened. Planning is recognizing reality and adjusting to meet the future.

IV Conservation Goals:

Conservation Goals are broad-based administrative policies. Such policies formulate stewardship guidelines and standards for current and future building conservation treatments.

The principal policy of this project is the desire, to the greatest extent possible, to preserve the current visual exterior appearance and all original historic fabric of these structures in their landscape setting while addressing life safety issues within a long-term stabilization program. For the interiors, this would include opportunities to restore interior finishes and trim during any proposed remodeling.

A framework for this administrative policy involves establishing three (3) goals.

A) Program of Building Use:

The goal is to establish a Program of Building Use for each of the fifteen (15) recognized historic structures and features within the historic district.

The Headquarters Historic District contains the central administrative and management program for the park. Park wide policy and programs are established and implemented from this location. The historic buildings of the district provide vital support and shelter for staff and equipment while instilling a sense of longevity and permanence. The buildings span over 70 years of service to the park. Many still contain principle components and divisions of park management. All have the ability to contribute to the success of the park and its programs, and need to be kept actively in use. Such use is either serving their original function or being adapted to a reuse compatible with the qualities and character of their design. The present general program uses of the buildings are listed below:

Conservation Goals

- Bldg. #1: Administration Building
Program: Offices and administrative support for Park Superintendent.
- Bldg. #2: Former Superintendent's House (Macy House)
Program: Reuse of residential space for offices and program support.
- Bldg. #3: Gas and Oil House:
Program: Storage of Flammable material; primarily for Fire Crews
- Bldg. #4: Transformer and Pump House
Program: Original use abandoned; WCC & volunteer tool storage.
- Bldg. #5: Equipment Storage Shed
Program: Readapted for Trail Crew offices/equipment; Road crew equipment; miscellaneous storage
- Bldg. #1000 Equipment Supply and Storage
Program: Readapted (after 1965 fire) for Supply receiving and shipping, carpentry shop, plumbing shop, and maintenance offices
- Bldg. #8: Utility Shop for Radio & Electric Service
Program: Service and equipment for program support.
- Bldg. #9: Auto Shop
Program: Equipment service and repair for program support.
- Bldg. #12: Superintendent's Woodshed
Program: Law Enforcement evidence Storage
- Bldg. #16: Garage (BRD offices)
Program: Readapted to offices for program support.
- Bldg. #17: Apartments
Program: Seasonal housing

Conservation Goals

Bldg: #20: Assistant Superintendent's House (Investigation, Communication, Investigation, i.e. I.C.E. House)

Program: Readapted to offices for program support

Bldg: #1240 Garden Shed

Program: Equipment Storage

Bldg: #1292 Tin Shed

Program: Material Storage

Setting aside the woodshed and garden shed, only six of the buildings retain their original program and six have been adapted to new functions, the majority of space devoted to offices for program personnel.

At present, no major alterations or changes are anticipated in the near future for the functional programs of the historic buildings. While historic both as a complex and on an individual basis, the structures remain a working element of Park operations.

B) Standard of Treatment:

The goal is to select a Standard of Treatment upon which to base sound conservation decisions compatible with the Program of Building Use.

The Headquarters complex contains an exceptional amount of surviving original fabric and continues to be the primary maintenance and administrative site for Olympic National Park. Based on the buildings' historic significance and degree of historic integrity, the recommended Conservation Goal for building treatment is a combination of **Preservation**, a treatment standard designed to sustain the existing form, integrity, and materials of the historic property, and **Rehabilitation**, where a new or continued functional use of the structure requires certain alterations. **Preservation** focuses primarily on structural stability and the securing of a weather-tight exterior envelope. Usually, no interior

Conservation Goals

alterations to finishes or spatial patterns are planned. Interventions required for structural stability or envelope performance must be extraordinarily sensitive to the historic fabric, and designed with the least degree of intrusion as possible. Where **Rehabilitation** treatment is required for selected areas, such treatment may involve both introduction of additional new material into the structure and potential alteration of historic fabric beyond the scope of a **Preservation** treatment.

When **Preservation** interventions are designed and implemented, they should contain a program focus of either retaining historic material when improving an assembly/system performance, or designing with the original historic appearance in mind when complete new systems are required. When Rehabilitation interventions need to be integrated into a building program, they should be compatible and complementary in tone and character to the historic setting while allowing the use of modern materials and systems.

C) Building Codes and Historic Buildings

Changes in building practices, materials and standards are one way of distinguishing historic structures from contemporary structures. Many of the changes in building practices and standards strive to enhance and improve issues of health, welfare, and life safety for the building owner and occupants. Applications of such improvements and standards to historic structures often introduce conflicting values.

The goal is to assess selected issues of life safety, health, and accessibility and their effect in reference to the applied Standard of Treatment, i.e. Preservation, Rehabilitation, or Restoration.

Building Codes may be important aspects of a Building Conservation Program. Codes are not generally part of the process of addressing preservation of historic fabric; codes instead are assessed for their potential negative impact on the building's historic character. If work must be done to meet code requirements, particular care must be taken

Conservation Goals

not to obscure, alter, or damage character-defining features in the process of the preservation work.¹

Two modern building standards are reviewed for potential conflict and negative impact in Conservation of the structures. These are life and fire safety, and accessibility.

The following evaluation and recommendation discussions have been developed within contextual reference to the codes, standards, and historic guidelines listed below. A comprehensive code analysis has not been conducted. Code issues are introduced for discussion only.

Although historic structures that functionally serve park staff or visitors are generally expected to meet modern safety, access, and energy efficiency standards, their character may impose limitations on functional modifications and adjacent development. As stated in the administrative guidelines presented in Pacific Northwest Region Design and Construction Directive PW-069, “For projects involving rehabilitation of historic structures, the *Secretary of the Interior’s Standards for Rehabilitating Historic Buildings* (36 CFR Pat 67) must be followed. For historic buildings and under those limited circumstances when there are practical difficulties involved in fully meeting the provisions of [building codes] the Regional Director shall have the authority to grant code modifications on an individual case basis, provided that the modification complies with the intent and purpose of the codes, that such modification does not lessen health, life or fire safety requirements, and that the proposed modification has been reviewed under the provisions of the Section 106 of the National Historic Preservation Act.”²

- National Park Service Pacific Northwest Region Directive PW-069, February 13, 2008.
- Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation

Conservation Goals

- The Secretary of the Interior's Standards for the Treatment of Historic Properties.
- The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes.
- International Building Code, 2003 Edition, ICC
- International Existing Building Code, 2003 Edition, ICC
- American With Disabilities Act and Architectural Barrier Act
- Accessibility Guidelines (ADA-ABA Guidelines)

Life and Fire Safety:

The primary goal of building codes “...is to safeguard life in the presence of a fire. Integral to this purpose is the path of egress travel for occupants to escape and avoid a fire. Means of egress can be considered the lifeline of a building.”¹ Whether a new or existing buildings, the primary system for protection of people in buildings is the design and character of the means of egress from the structure. The system needs to provide alternate paths of egress to safety, shelter occupants from fire and products of combustion, accommodate all occupants, and requires no special knowledge or effort.

Other sections of the building code supplement and support the concern with fire safety and protection of the building occupants. They include such provisions as vertical openings, fire detection, fire suppression, and interior finishes, to name a few.

Within the Headquarters Historic District, most single story buildings have multiple exit provisions, even the ones of higher risk, which are those used as offices. Where there is only one exit for single story

¹ International Building Code, 2006, Code and Commentary, Chapter 10, page 1.

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building, the code allows an occupancy load of 49, which covers nearly all the buildings of the complex.

Some concern, though, must be raised in regards to the Administration Building, and possibly to a less extent, the Superintendents Residence. Life safety standards for means of egress have changed in a manner whereby these 1940 constructed building do not meet modern code provisions. The issue is the number of personnel using the second floor. With only a single open (non-fire protected) stairway as a means of egress, modern code would only allow nine (9) or fewer people to have offices on the second floor of these structures. As of October 23, 2009, the occupant loads for the Administration Building were 14 staff on the first floor and 20 on the second floor. Even with a sprinkler system, a second means of egress (i.e. a second stairway) would be required. The following is the code section from the 2006 International Building Code for new buildings, the code presently used by the City of Port Angeles.

IBC 2006:

Section 1019.1: minimum of two exits per story

In a two-story building, a single exit stair that is not enclosed can only serve an occupant load of less than 10 on the second story. If the building has an automatic sprinkler system, then two open stairways can be accepted for increased occupancy, but must meet the remote location provisions of the code (i.e. 1/3 diagonal – 1015.2.1.2 – which would place a new interior open stairs either at the NE or SE areas of the building). If no sprinkler system, then a new building would have to have two enclosed stairways.

Now, when the time the Administration Buildings was constructed code standards were different and the building is “grandfathered” to its original design. Technically, since no rehabilitation work is currently planned for the building, then no compliance with modern code is required unless a building official declares the building to be dangerous (a seldom occurrence and only in the most unusual circumstances). This does not mean the current situation should be dismissed, nor does it mean full compliance is the only alternative. There are other balanced options.

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To explore these options, the park administration should undertake two evaluations.

First, the current provisions for safety should be reviewed and assessed. There are rope ladders provided on the second floor of the Administration Building at select locations. Recognition should be given to the fact that such devices exceed the intent of the code in that an egress path should not require special “effort” for the occupants and they may not be suitable to all personnel. In addition, systems for fire detection and fire suppression are either minimal or do not exist. Adding a second stairway (either internally or externally) would significantly alter the historic character of the structure and is not a realistic option. Reducing the level of fire risk by reviewing personnel conduct in regards to open flames (candles) and electric space heaters may be prudent.

The second evaluation is to explore options that, if implemented, can improve fire safety and reduce risk to the occupants of the second floor.

One option would be to reduce the number of personnel on the second floor. It may involve moving some staff to the first floor or to another location. Administratively, this may prove a difficult option, but it should be viewed in a broad context. It may not be possible right at the moment, but looking into the future, as programs expand and the demands placed on administration grow, it should be given serious consideration.

Another approach is to review the sources of risks. A high risk involves the increasing load placed on the present electric system. New personnel do not simply need paper and pencil in this modern age, but computers, scanners, copiers, and other office equipment to function. While individually modest in electrical use, each new piece of equipment places an incrementally demand on a fixed system. As part of this report, an assessment of the electrical system was conducted and is discussed under the section on the Administration Building.

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A third option to mitigate existing conditions is to explore new systems in the form of fire detection and fire suppression. These will be discussed below.

Fire Detection and Suppression

There is no language in fire or life safety codes or standards that require a fire protection system in existing structures that did not require a system at the time of construction. If a facility is undergoing a repair/alteration then a system may be considered or required.

General maintenance and minor repair would not trigger a requirement for detection systems or suppression systems. The present Design and Construction Directive PW-069 now states that any structure undergoing rehabilitation or other alterations, or a change in occupancy must have an automatic sprinkler system protection and an automatic fire detection system. The building code defines alteration as “Any construction or renovation to an existing structure other than repair or addition.”³ Repair is defined as “The reconstruction or renewal of any part of an existing building for the purpose of its maintenance.”⁴

It is understood that the Park has expressed interest in a sprinkler system. Pursuing a sprinkler system would require accessing the work to be performed, what Cultural Resources, Director’s Orders, reference manual require, and the desire of the NPS unit. Such assessment work should review all the options for sprinkler systems now available, from traditional “black pipe” to state-of-the-art “mist” systems.

In the current circumstances, the driving force behind a sprinkler system would be the park administration. Neither current Director’s Order nor codes require such a system. In the irony of the building code, installing a sprinkler system would constitute an “alteration”, thereby being required by Director’s Order, unless modified by the Director for historic preservation reasons. Furthermore, if any other system or building alteration is planned (new heating system, etc.), it would appear that a fire suppression and detection system would be required, unless again specifically modified by the Director.

Based on above discussion, the park administration could explore the concept of a sprinkler system in the Administration Building. The initial problem faced would be by what type and its affect on the historic fabric of the building. By their very nature, sprinkler systems utilize a pipe assembly to supply a suppression material (mainly water) to points of discharge within a building. Installing such a traditional sprinkler system (black pipe) in a two story existing building involves either extensive alteration of historic fabric, exposing the piping system, which often obscures or alters character-defining features, creating new interior assemblies to hide the pipe, or a combination of such methods. Even with the more modern mist suppression system with its smaller diameter pipe system (usually only 1/2" in diameter), some acceptance of exposed pipe is usually necessary. In either case, once a sprinkler system is in place, there is a mandatory annual inspection. In those instances where there are no trained NPS maintenance personnel to perform this service, an annual inspection cost of around \$3000 to \$4000 would need to be added to an operations budget. There are now also some small, stand alone systems, specifically made for single room applications, like mechanical or electrical rooms, where the risk of a potential fire is greatest, or data storage room, where storage of information is critical (<http://www.ceasefire.com/>). These systems are not for complete buildings. If the park wishes to pursue the idea of a sprinkler system, they should contact the Pacific West Regional Structural Fire Officer in the regional office.

It should be kept in mind that suppression systems address a fire after it has established. Since life safety is a function of time: time for detection, time for notification, and time for safe egress, detecting a fire at its moment of inception and notifying emergency services is a valuable option to consider, especially when detections system are far less expensive and disruptive than sprinklers. Advanced technology can provide very sensitive detection of fire. These systems continually sample the air for products of combustion and provide the earliest notification. Such systems do require a piping assembly, but it is much more discrete and less intrusive than metal pipe or electrical wiring. It is understood the Park is presently requesting proposals for fire and security

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systems for the buildings of the Administrative complex. Many of these systems can be intrusive to cultural resources and need to be evaluated carefully for impact on qualities and fabric of the historic structure. A sophisticated detection system, in combination with other risk reduction practices and policies would be a great improvement for life safety at the Administration Building.

Accessibility:

In regards to the concept of “equal accommodation” for accessibility, there are two general provisions when dealing with a historic building open to the public, whether that facility is publicly owned or privately owned.

1) As a general rule, a historic structure is expected to meet all requirements for accessible buildings outlined in the ABA Guidelines. Some limited alternate provisions are allowed if the requirements would threaten or destroy the historical integrity of a historic building.

2) The concept of accessibility does not distinguish between the visiting public and staff serving them.

In the Headquarters District, the most critical building for accessibility is the Administration Building. While it has an accessible route to the main entry and into the building, once inside, there is limited access to the offices that have the greatest degree of communication with the public or staff, i.e., human resources, public affairs, Superintendent, and contracting. Human resources and contracting, as well as the Chief of Interpretation, have some staff on the first floor. About half of the staff though fulfilling these positions or services are located on the second floor, to which there is no provision for access (elevator). The Chief Ranger has moved to the I.C.E./Dispatch office. Secondly, there is no accessible restroom in the building.

The current policy for accessibility to public/employee services is for staff to meet with visitors or staff with a disability in the former lobby. There is no accommodation for restrooms facilities.

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The issue arises as to whether such policy and practice meet the intent of the embodied ABA concept of “equal accommodations”, and if not, what alterations in practice or building function could be improved.

In the matter of an ABA restroom, the provisions of ABA are not met, and the most direct answer is to modify the present ground floor restroom to a compliant ABA restroom.

In the matter of “equal accommodation” to public/employee service staff, the present practice needs review. If ALL public/employee meetings are held by staff in the lobby, regardless whether the party has a disability or is able-bodied, then, “equal accommodations” could be viewed as being provided to all persons. If on the other hand, able-bodied person meet in private second offices with staff while persons with a disability have to meet in the lobby, then the intent of equal accommodations is not met. Since the public/employee service staff may have to discuss personal issues with either employees or members of the public, the lobby may not meet the conditions for such “private” deliberations in comparison to a private upstairs office.

To correct what may in appearance be perceived as a different level of accommodations for persons with a disability, three options can be considered. The first is an elevator, the second is moving staff with the most direct need to meet with the public to the first floor level, and the third is creating a private conference room on the first floor.

The idea of an elevator is easy to understand. Physically fitting one into the Administration Building would be very difficult. Due to the required travel dimensions above the second floor ceiling, an elevator would have to be located towards the center of the building. While technically feasible, all the alternate locations for an elevator would significantly and seriously affect the historic character of the building. It would be an option difficult to implement.

A second solution would be to move the offices of those staff members who directly service the public and employees to the first floor. This was

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the concept upon which the building was originally designed. The primary administration staff was on the first floor, including the Superintendent, Assistant Superintendent, the Chief Ranger, and clerical. Program support staff was on the second floor. Relocating staff is possible, although not without extensive disruption of an established administrative protocol that by all accounts is working very efficiently and satisfactorily. It could be done, but there would be a period of administrative adjustment.

A third option is much more direct and easy to accomplish. Designating a private room on the first floor where all offices could arrange for meetings in an “equal” accommodation” would remove any appearance of unequal treatment of a person with a disability. It would also provide a small meeting place for secondary support staff to hold sensitive discussion concerning program issues.

Hazardous Materials

Hazardous material studies have been conducted for asbestos for the Administration Building, the Macy House, and the six-unit apartment building. These studies are on file with the Park Safety Officer.

All three of the above buildings were originally heated with fuel oil furnaces. The construction drawings for each of these buildings show buried underground fuel tanks for fuel oil. Each tank is located on the south side of the buildings a few feet away from the foundation. To date, there are no records in the administrative files as to the status of the tanks. It is unknown at this time whether the tanks were ever removed, filled, or still in place.

Conservation Goals

¹ Weeks, Kay D. and Grimmer, Anne E., *The Secretary of the Interior's Standards for the Treatment of*

Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, & Reconstructing Historic

Buildings, U.S. Department of the Interior, Washington, D.C., 1995, pages 26 and illustration on page 59.

² *Pacific Northwest Region Directive: PW-069 - Design and Construction*, page 4.

³ International Building Code, 2003, page 11

⁴ International Building Code, 2003, page 18

IV **Conservation Assessment and Evaluation of the Buildings** **of the Headquarters Historic District**

The structures are experiencing various degrees of material deterioration that affects their structural integrity and maintenance of a sound weather envelope. Based on the goals, existing conditions, evaluations of those conditions, and treatment recommendations, where appropriate, of each of the individual structures are presented in following individual sections.

Existing Conditions:

The existing conditions are based on field observations conducted by the project team during 2009 and 2010. The observations have been supplemented by review of historic drawings and photographs, where available. They may include identification of significant historic building fabric, descriptions of architectural features, materials, and systems, plus descriptions, where appropriate, of any alterations that have impacted the historic fabric. Observations were limited to visible and accessible areas; no exploratory demolition or physical testing was undertaken except as noted. Room and floor designations reflect current usage. This portion of the project had two goals:

1. To understand the materials and physical assemblies of the structure.
2. To report the current condition of these materials and assemblies.

Condition Assessment, Evaluation and Recommendations

Evaluation:

For the purpose of developing a comprehensive Building Conservation Program for the Headquarters Historic District, the existing conditions have been evaluated within two major categories:

1) Investigation and Survey, and 2) Conservation Treatments.

The Investigation and Survey evaluations are based on conditions of these buildings which need further study, but which are beyond the scope of this document. Some of these studies are necessary to implement various Conservation Treatments. Others are more general in nature, addressing such issues as restoration of historic building context for a better understanding of the significance of the site. Investigative issues pertinent to specific buildings will be discussed individually under each structure.

The Conservation Treatment evaluations are based on conditions of these buildings that require intervention for the continued performance and preservation of the structures.

Evaluation Levels:

The buildings of the Headquarters Historic District have been divided into three (3) levels of evaluation as follows:

Detailed:

Administration Building Bldg. #1
Superintendent's Residence Bldg. #2

Moderate:

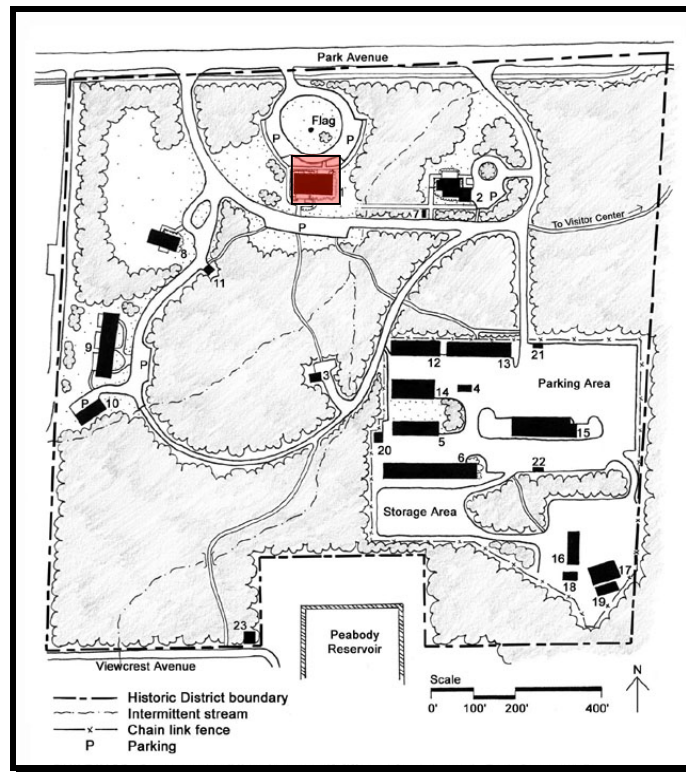
Gas & Oil House Bldg. #3
Transformer Vault & Pumphouse Bldg. #4
Equipment Shed Bldg. #5

Condition Assessment, Evaluation and Recommendations

Equipment Shed and Supply Storage Bldg. #1000
Stone Pathway Lanterns

General:

Radio/Electric Shop Bldg. #8
Auto Shop Bldg. #9
Superintendent's Woodshed Bldg. #12
Garage (BRD offices) Bldg. #16
Apartment Building Bldg. #17
Assistant Superintendent's Residence Bldg. #20
Garden Shed Bldg. #1240
Tin Shed Bldg. #1292



Administration Building: #1

Introduction:

As quickly as the master plan for the park headquarters was identifying program areas within the site, park service architects were developing design concepts for the new structures. Architect Robert Riggs of the regional NPS office adopted the floor plan of the administration building at Mount Rainier, enlarged it, and designed the exterior and interior details with a modernistic idiom. Construction drawings were completed July 31, 1939. Construction began before the end of 1939, and by spring of 1940, the shell of the building was taking shape. Project funding was depleted by the end of June 1940 and the building was “mothballed” until more funds were allocated. The project was restarted in February 1941 and with a lot of finish work still to be completed, staff moved to the new building in October 1941. Due to the war, it took another six years to finish and landscape the building.

Condition Assessment, Evaluation and Recommendations



Figure No 1-1: Construction Progress, June 1940.



Figure No. 1-2: Construction progress, July 1940; from Superintendent's monthly report of August 10, 1940; construction halted at this point until February 1941.

Condition Assessment, Evaluation and Recommendations

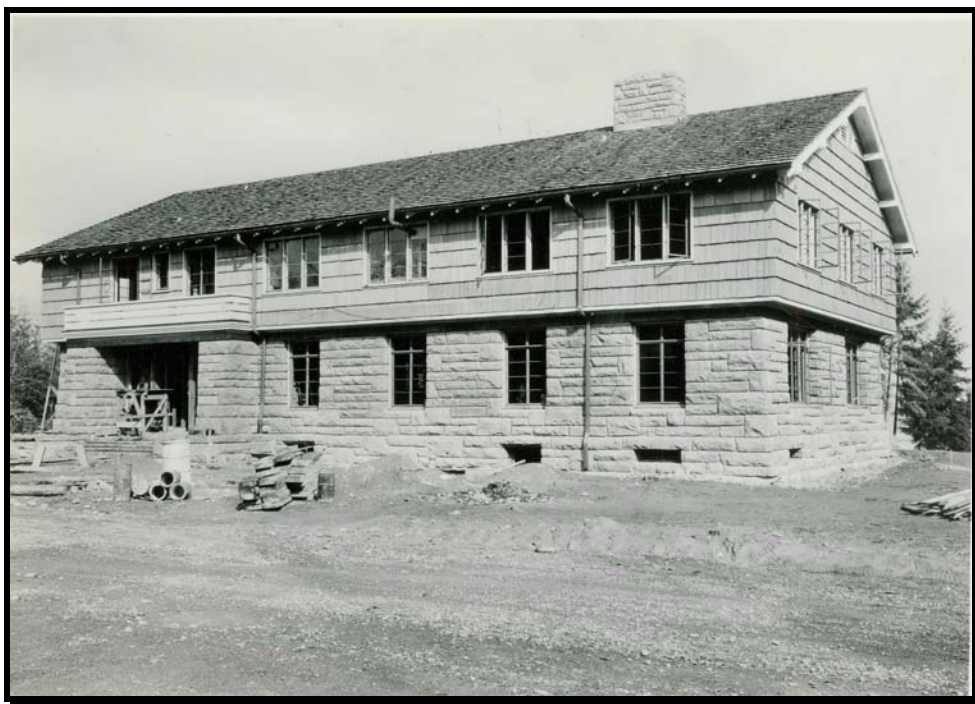


Figure No. 1-3: Construction progress, spring 1941.

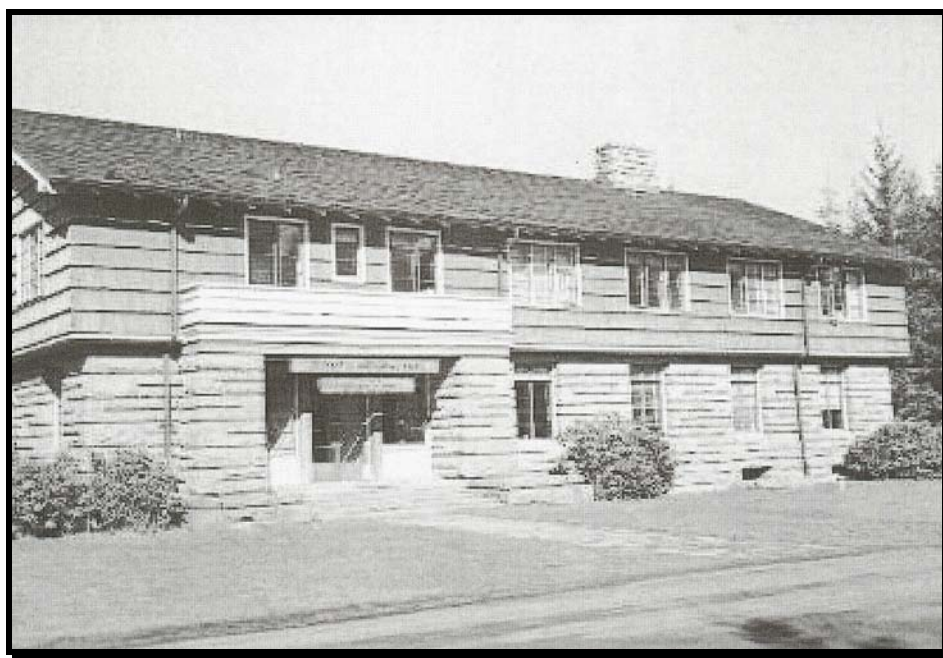


Figure No. 1-4: Administration building, 1950, three years after final completion.



Figure No. 1-5: Administration Building, 1983; note lack of gutters and downspouts except over entry.

There is a complete set of construction drawings for the Administration Building on file with the engineering division. The set consists of eleven (11) original sheets from 1939 and one (1) auxiliary sheet from 1944.

Existing Conditions

Site

The Administration Building was sited on the northwestern corner of the headquarters district on a leveled bench with a view over Port Angeles. The grade is level on the south and west elevation, with a gradual slope to the north. To the east, the grade fades towards a natural ravine. Foundation plantings transition to lawn on all sides of the structure, with a backdrop of forest stands.

The building does not have a foundation drain system, relying on the natural grade for site drainage. The building does have two separate incorporated drain systems, one for the roof gutters, and one for the basement window wells.

The roof gutters were original half-round metal gutters along the north and south eaves. The gutters fed three downspouts on each elevation. The gutter of the front entry roof had two downspouts that discharged into leader boxes. The leader boxes had drain lines that went into the stone walls, and

Condition Assessment, Evaluation and Recommendations

internally connected to the underground drain lines. Similarly, the rear entry balcony has a drain which routes internally in the stonewall and then connects of the drain lines. The downspouts discharged into two separate underground drain lines, one serving two downspouts on the north elevation plus the southwest downspout, and one collecting the downspout of the northeast corner, two off the south elevation, and both entry roofs. Each drain line then was carried away from the building to a point of daylight and discharge. One drain line went to the east into the natural ravine. The other went due north off the northwest corner. Neither daylight points could be located. The one in the ravine is assumed overgrown. The one to the north likely was disrupted with the addition of the front circular drive. Prior to the early 1980's, the gutters and downspouts were removed completely from the building except for over the entries. Subsequently, the gutters were reinstalled using aluminum extruded gutters and downspouts, only this time using only two downspouts instead of three on each elevation. The copper leader boxes of the front entry were abandoned and a new downspout routed around the side of the porch. On the rear elevation, there is no connection to the drain of the shallow balcony; presumably this still has the original connection to the cast iron discharge system.



Figure No. 1-6: At the front entry, note abandoned leader box and new routing of downspout.

Condition Assessment, Evaluation and Recommendations

Built into the foundation were four basement windows with exterior wells. Each window well has a bottom drain. The drain lines from the window wells are carried away, according to the original drawings, 25 feet from the building and into gravel dry wells. All the window wells are filled with duff and debris. It appears doubtful if any drain with any efficiency. Apparently the original downspout design was slightly altered as the center downspout on the north elevation emptied into the window well outside the north basement storage room. From the interior of this room there is evidence of moisture coming through the window frame, possibly one reason the center downspout was abandoned. Current moisture suggests well drain is plugged, or draining slowly under heavy rain.

At the rear entry, there are some minor calcium carbonate deposits on the stone under the east end of the beam bearing, indicating each a roof/flashing leak or a backup of water at the drain.

The original drawings do show a drain within the pipe chase under the outside perimeter of the foundation beneath the lobby. This could not be confirmed.

Structure

Foundation

The foundation of the Administration Building consists of reinforced concrete. The center section of the building has a basement for mechanical and storage. The basement walls are 10" reinforced concrete and the floors are slab-on-grade. The perimeter walls normal to the floor framing are reinforced concrete with an "L" shape section, allowing the exterior stone walls to have a two foot wide bearing at the base of the "L" and the vertical section of the "L" to extend upward to form a shelf. The shelf is the bearing for floor framing. In the unexcavated areas beneath the floor framing, a 2" layer of concrete was laid as rat proofing. Under the first floor lobby, the area was backfilled and a concrete slab poured on which to lay the stone floor.

Condition Assessment, Evaluation and Recommendations

The foundation walls, where accessible, did not show any visible indications of deterioration of the concrete or reinforcement. One could find very minor locations of moisture penetration through cold joints in some locations. There was no rust or discoloration though suggesting reinforcement deterioration.

At the base of the wall, foundation vents were incorporated for the crawl spaces beneath the first floor. All the vents have been closed with plywood, though the crawl spaces do not appear to have any excessive moisture levels. The vents were designed to be elevated 5" above grade, and in many instances the openings are not level with grade.



Figure No. 1-7: Foundation vent.

Walls

The walls are a composite of unreinforced stone masonry and wood framing. The first floor exterior stonewalls are flared roughly 12" at the corners and have a 6" batter at the base. They rest on the reinforced concrete foundation and by design were to start approximately 8" below grade. The batter extends 30" up the wall to a final width of 18" for the remainder of the height. The interior face has a 2 x 4 furring for a plaster finish and to provide for utility runs. At the second floor level, the

Condition Assessment, Evaluation and Recommendations

stonewalls supports a continuous 10" x 14" sill girder, bolted into the stone, that in turn supports the second floor wood framing. The second floor wood framing cantilevers over the stone wall 1' -3". The second floor exterior wood framed walls are 2 x 6 while the first and second floor interior partitions are mainly 2 x 4.

There are no indications of deterioration or distress in the wood frames of the building. The stone masonry walls do have some stress fractures.



Figure No. 1-8: In the center of the picture there is a crack in the stone below the sill stone

In three places on the exterior walls there are vertical cracks in wall stones, all associated with windowsills.

The stones of the batter and flair at the base of the wall are showing signs of deterioration in the form of cracking and discoloration, but not in the degree or condition of the stone of the entry planters (discussed below).

On the west elevation, there is some staining at the top of the stonewall. Its location is directly beneath the second floor women's restroom. The stain exhibits both surface flow and splattering on the stone.



Figure No. 1-9: West elevation, staining of stone

Roof

The roof structure consists of built-up modified Fan trusses. The trusses at the east end of the roof have 2 x 8 top chords for the larger space on the engineering office, while the rest of the trusses on the building were designed to have 2 x 6 top chord. All the rafters have 3" x 8" rough false rafter tails.

At the gable ends, false purlin outlookers were incorporated into the roof framing to carry 3 x 10 verge boards.

There is no indication of distress or distortion in the roof framing.

Chimney

A double flue masonry chimney originally served the basement boiler and the lobby fireplace. The chimney rests on a reinforced concrete foundation and is constructed of brick (fire brick around the fireplace) until just below the roofline, where it transitions to stone. Visually, the chimney top is covered with lichen, the mortar joints, where visible appear sound, but the stone has signs of deterioration on the surface.



Figure No. 1-10:North side of the chimney

Seismic

Following the Nisqually earthquake of 2001, a seismic study of the Administration building was conducted. The results of the study indicated that seven (7) first floor north-south shear walls needed additional anchorage, the first floor needed additional anchorage to the west and east stone walls, and additional anchors were needed between sill plate and floor joists.

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Exterior Envelope

Steps, Landings, and Planter Boxes

At both ground floor entries to the Administration Building, shallow covered entry landings were created by cheek wall extensions from the main building. These cheek wall extensions were of stone and flanked a stone landing served by stone steps. Stone walled planting boxes in turn flanked the steps. The cheek walls of the main north entry were flared while the rear entry cheek walls were squared. The design provided a formal sense of arrival for the building so often associated with government structures.



Figure No. 1-11: North entry on the left and south entry on the right

The stone used in construction of the Administration Building is local sandstone. When used in highly exposed environment such as the planters, steps, and landings, it appears to undergo accelerated deterioration. The stone in these locations exhibits a high degree of delamination of the natural bedding layers of this sedimentary stone. In addition, when wet the steps and landings become very slippery. At the rear entry, the original stone steps were covered with a concrete overlay. The front entry still has its original stone steps and landing.



Figure No. 1-12: Front entry steps and landing.

Walls

The exterior second floor walls are covered with stained wood shakes. According to the original design drawings, the shakes were to be 32" with a 14"+/- exposure and the courses were to "...line with the w'd'w muntins." ¹ The courses also align with the window heads. The shakes appear to be very well maintained and in good condition.

Roof

Based on original design documents and historic photographs, the roof appears to initially to have been a shake roof. It currently is a cedar shake roof, installed in 1998. The roof looks to be in fair to good condition, not brand new but serviceable for more years to come.

From inside the attic, there is evidence of leakage around the base of the chimney, associated with the flashing. The flashing appears to be original copper that has been turned up for re-roofing and then re-dressed down.

¹ Note with detail "Typical Section Thro' Exterior Wall, Administration Construction Drawings, July 14, 1939, Sheet 4.

Windows

The windows are steel frame casement windows, a signature element of the building's design. They speak to the increasing industrial influence on construction of the period. The windows were chosen with strong horizontal lines in mind. The windows have been maintained well, still operating and with little signs of rust often associated with such assemblies. A remarkable well-fabricated series of interior storm windows have been constructed for increasing energy efficiency. With the storm windows in place, the windows perform very well, close to double pane assemblies.



Figure No. 1-13: The windows with muntins aligned with shake siding courses and minimal trim provide a strong visual component within the building's design.

Doors

The front exterior doors are steel frame assemblies. They are in fair condition in that the demands of being operational place stress on issues of alignment and secure sealing. They have a slight warp to the frame that causes them to have some drafts. The metal rear door and side-lites are a replacement for the original pair of steel framed doors, installed in 1991 for accessibility.



Figure No. 1-14: Steel front entry doors

Systems

Electrical

The principle source of energy for the building is electrical. As part of this study, an electrical capacity and distribution assessment was conducted. The results indicated there is a large capacity serving the building that can meet the present and future needs. Some code issues were noted, such as placing bookshelves and pictures in front of electrical panels. Fire issues were noted associated with the practice of storing paper files on top of and around electric baseboard heaters. With some minor improvements, a larger degree of potential backup power can be provided to support critical communications equipment beyond the current system. A copy of the complete report can be found in Appendix No. 1.

Mechanical

The original oil-fired hot water heating system, along with the associated radiators, was removed from the building years ago. In its

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place electrical baseboard heaters are now the primary source of heating for the building (and often a potential fire ignition source as was discovered during the electrical capacity study). There is no air-conditioning. Without the capacity to circulate air, windows are often opened, occasionally competing with the heating system.

Energy Conservation

Energy conservation is a concern that will only grow with time. Any study of a building looks for means to advance lower energy usage with a reasonable investment.

The present building has about 6" of insulation in the attic, a minimal amount under present day standards. The walls are not insulated but the depth of masonry in the first floor walls provides a degree of mass that is beneficial. The most windows have interior storm windows that work well.

The heating system of electric baseboards is relatively inefficient for the application within the administration building.

Fire Alarm

The building has no fire alarm system. It is understood that requests have been issued for bidders to provide a design/build proposal for supplying a fire alarm system to the building.

Interior

Finishes

The present condition of finishes within the administration building represents a substantial amount of original historic fabric in good condition.

First Floor Hallway

The hallway retains the plaster ceiling, plaster walls, natural stained trim, nearly all the original office doors and the original chair rail. The original wood floor has been overlaid with carpet. Changes include the removal of the door to the original south side clerical room and the replacement of the original dutch doors with a solid door at the former chief ranger's office. Handrails were added to the stairs in 1998/99. Only the sidewalls of the staircase has wainscot as originally designed. The original design for the hallway (on both floors) included wainscot throughout. The wainscot was to go below the chair rail, which matched in height the bottom of the glass of the office doors.

First Office Rooms

Nearly all the office spaces have had the original plaster ceilings covered with acoustical tile, presumably to reduce sound transmission. The floors have been carpeted. The former south side clerical room has been divided into three offices, but sections of the original picture rail (both painted and stained) are present.

Lobby

The main lobby is remarkably unaltered, with its fireplace, wood wainscot, natural base, and wood ceiling, though the original design has all the ceiling boards stained, the white paint being an alteration, presumably to increase light reflectance. The main alteration in the lobby has been the removal of the visitor counter and the addition of surface mounted conduit and the ceiling lighting.



Figure No. 1-15: The entry lobby; note desk in the corner is the original custom made desk for the park's first superintendent, Preston Macy.



Figure No. 1-16: Preston Macy at his desk, circa 1941



Figure No. 1-17: Lobby Fireplace

The fireplace in the lobby is a major design element of the room. The surround is of native sandstone. The large lintel stone is cracked in the center. The chimney has a metal cap and is not operational.

Second Floor Hallway

The second floor hallway retains the original door trim, ceiling and wall plaster, picture rail. The wood floor is now carpeted. The originally design for a complete wood wainscot was never finished, the only aspect ever installed being the sidewall at the upper run of the staircase.

Alterations to the hallway include the infill and added doorway of a small vestibule to the right of the head of the staircase.

Lighting

Lighting in historic structures is a challenged balance of original design and efficient functionality. Preserving the original quality of an historic space and meeting current standards for lighting needs in the computer office often cannot be reconciled. There are though specific spaces where consideration of appropriate design characteristics of the original concept should be considered in regards to light. Within the Administration Building that space is the lobby. While presently used functionally as a conference and meeting room, the lobby represents the historic formal space of the administration building. The present lighting in the room, while functional, is modern in design and out of character with the historic qualities of the room.

Evaluations

Site

The site drainage characteristics of the administration building include the natural grade, the roof gutter system, and the window well drains.

The window well drains are mostly covered with duff and debris. They should be cleaned periodically and tested to be operational, which may include hydro jetting of the drain lines.

The natural grade has grown around the structure, most obvious at the vents in the foundation where grade is practically level with the bottom of the vent. The 2003 Cultural Landscape Inventory states the planting beds around the building have grown in density and would be more in keeping if the planting was more restrained and balance instead of in continuous drifts. It appears some of these concerns have been addressed, but on the west elevation especially, the mounding of the grade around the base of plantings has created a negative slope to the building. As future landscape work is being planned, the reduction of the grade and the requirement for a positive slope away from the building should be incorporated in the planning process.

The present gutters of the building are not historic in nature. In the long term, returning the gutters to a half-round style would be more in keeping with the original design. The larger question with the gutters is whether to reactivate all three downspouts as originally designed. The size of a gutter and the required number of downspouts are designed based on rainfall intensity and roof area. Based on the climate data for Port Angeles, the most intense rain has been 3.6 inches in one day during the years 1961 to 1990. Based on that data, the two-downspout system would have capacity IF both downspouts are open and operational. If one downspout is clogged, then the system would not be able to handle the capacity. The original design of three downspouts was more than required, but added a degree of additional capacity to the system. Additionally, there is the question of the operational capacity of the window well system as one of the abandon downspout (north

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elevation center) discharges into a window well, which in turn would have to accept this additional flow.

When and if the decision is made to replace the existing gutters sometime in the future, half-round gutters would be more appropriate and could operate with two downspouts. This only would work, as it must with the present system, if the gutters are kept clean.

The drainage of the entry balcony appears to have a minor leakage based on the staining on the stone at the east end of the balcony. Based on the original drawings, the actual leader from the balcony is routed internally through the stonewall to the underground line. If the leader or drain was leaking, then the stain should be on the west half of the balcony. This suggests the noted leakage is most likely from a split seam or flashing failure on the east end of the balcony roof. To source the leakage, a careful inspection needs to be made of the metal roof deck for split or open seams. If that does not indicate any problems, then test the drain for operational capacity (stick a garden hose down it and see if it drains). If the drain is operational, then temporary plug the drain (as if closed by leaves and duff) and allow water to puddle on the metal deck. It simply may be that when the drain occasionally gets clogged, backup water exceeds the sidewall flashing.

Recommendation:

Regrade around the building to insure foundation vents are above outside grade and the grade is positive away from the structure.

Clean all the window wells and insure drains are operational

Restore the half-round gutters in the future; consider activating original three-downspout system, testing prior to insure all drain lines are operational.

Inspect the rear entry balcony metal deck for failure; test drain line and soundness of metal deck.

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Structure

Foundation/Walls/Roof

The structural elements of building all appear in good condition. The seismic retrofit work conducted after the 2001 study will need to be considered when making any future alterations to the building. Though minor, plans to make the first floor restroom to be ABA compliant may require some new seismic anchor design if the present shear walls are altered.

The stress cracks in the stone of the first floor walls all appear associated with the slip sill stones of the windows. A slip sill refers to a stone sill that fits between the side jambs of the opening, as opposed to lug sill stone that extend into the sidewalls. In masonry walls, the solid wall portions between windows acts as a column. The wall below a window is not loaded per se. When a slip sill is used in a building, the lower bed joint of the stone course immediately below the slip sill is not mortar during the course of the construction of the wall. After several months, once the building has settled, the joint is closed. If this joint is filled during construction, the action of the building settlement will cause the stone to break. This appears to be the situation at the slip sills of the windows. There is no real clean way to correct this condition unless one replaces the stone. The joint is too small to mortar, and if something like epoxy or sealant is used, it will severely stain the stone. A modest amount of moisture is entering the crack, but certainly, given the nature of the stone, some of the clay is swelling and preventing excessive moisture entry. The crack is modest and unless it grows, it is best to leave it alone for the present.

Recommendation

Review seismic anchorage program prior to undertaking any alterations to first floor north-south shear walls.

Chimney

The chimney does not appear to have conservation concerns for the present, but the visual weathering of the stone suggests future problems. When the stone begins to weather, it will break the bond with the mortar, allowing moisture to begin to penetrate into the assembly. As a maintenance matter, the lichen and moss should be cleaned off in the near future and the top of the chimney inspected for open mortar joints and delaminating stone. If these conditions are found, then a repair program with new stone and mortar will be needed.

Recommendation

The next time a high-lift is available, plan an inspection of the chimney, cleaning plant growth and conduct a close look at the stone and mortar.

Exterior Envelope

Steps, Landings, and Planter Boxes

The native sandstone used for the steps, landings, and planter boxes is the same stone used in the walls of the Administration Building. Placed in a vertical application and with only a single exposed face, the stone is weathering reasonable well. That is not the case when the same stone is used in a manner where multiple faces are exposed.

Being a sedimentary stone, sandstone has naturally occurring bedding layers from historic deposition. Properly used in a wall construction, the bedding planes are laid in a natural manner, horizontally to the face of the wall. Without the protection within the wall assembly, stones exposed to the weather will be subject to deterioration due to the nature of the binder material of the sandstone. The nature of most sandstone found on the west slopes of the Cascade Mountains is composed of sand particles bound together by a binder composed of a combination of clay and calcium carbonate. The durability of the stone is associated most with the character of the clay in the binder. The predominate clay found

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associated with these stones is a smectitic clay. These are a family of clays that swell when immersed in water or organic liquids. When a stone that has a portion of the binding material made up of smectitic clay, the clay will swell and cause the stone to delaminate and crack. There is no way to reverse this effect. Stone of the type work well in a dry climate, but invariably suffer damage in a moist climate. In addition to deteriorating from the clay, if the stone is used in a walkway application the swelling clay will cause the surface to become slippery.

At the north main entry to the building, the exposed steps are deteriorating and slippery during wet weather. To address this problem, the extant stone needs to be removed and replaced with more durable sandstone. For walkways and steps, the new stone can be dressed with a honed surface that will create a high coefficient of friction.

The steps and landing, according to the original drawings, have a foundation of reinforced concrete. The stones were mortared to the concrete. This means the old stones will need to be broken out and new stones laid on the concrete to correct the condition at the front entry. It should be kept in mind that this will address the situation of the steps being slippery in wet weather. In freezing weather, both stones and concrete steps can be slippery from the frost and ice.

At the south entry, the stone steps have been covered with concrete. New stone could be used to replace the concrete, but from a practical matter, it would seem best to leave the concrete steps in place for now and accept the alteration, especially since the ABA ramp has been overbuilt on part of the steps.

As for the planter boxes, the existing stone will continue to deteriorate over time. Eventually for the sake of appearance, maintenance of a highly regarded historic building, and an ethic of stewardship, the planter boxes need to be rebuilt with more durable stone.

A suggestion for a replacement stone that is more durable and has similar coloration to the current stone is Wilkeson sandstone of Wilkeson, Washington. This is the stone used at the Washington State Capitol.

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There is a wide variety of color in the stone that could blend, if not match closely to the existing stone. (See Appendix No. 2 for cut pages on this product).

Walls

The stain on the stone of the west elevation appears to be a plumbing leak associated with the restroom fixtures that developed beneath the floor and followed the floor joists (normal to the outside wall) to the exterior wall. The white staining is from dissolved calcium carbonate the mortar used as the bedding joint for the sill girder. The stain does not appear active and it is assumed the leak has been addressed. This should be verified with the park plumbing department.

Recommendation:

Replace the front entry steps and associated portion of the landing with new stone; verify plumbing leak as been addressed on the west elevation.

Roof

The roof is in serviceable condition at present. The only question of the roof is the noticeable sign of leakage at the chimney. The leakage did not show signs of being active when observed in September, but west-blowing winds during the rainy season can force moisture around base flashings depending on their intensity. The situation should be checked during the rainy season.

The way the cap flashing is bent up, it suggests the flashing was not removed during re-roofing and merely re-dressed down. It is always best to redo the flashing properly by removal of the cap flashing and installing the base flashing interlaced with the shingle coursing each time the roof is redone.

Recommendation:

Observe the chimney during the rainy period of the year to see if there is a minor seasonal leakage; specific flashing replacement during re-roofing projects.

Windows

The steel frame windows are in remarkable shape. They function and are well maintained. The biggest issue with the windows is the annual rite of installing and removing the wonderfully designed interior storm windows. The storm windows are very effective in creating an energy efficient window assembly. As will be discussed below, a recommendation will be made to install a ducted mechanical system for heating and cooling. This would allow most of the storm windows to stay permanently in place.

Doors

Steel framed windows and doors can suffer from warp age and misalignment from usage over a long period. Companies that specialize in restoration of steel windows and doors can realign them. Depending on the nature of the misalignment, the glass may or may not have to be removed. This procedure should be considered for the front door.

The front door sidelites, unlike most of the windows in the building, do not have interior storm windows. Providing new storm windows would be an energy efficient improvement.

The rear entry door is functioning well and, unlike the front historic door, meets the requirements of the ABA entry. The original doors were only 30" wide, and with hinge restriction would not provide the 32" required minimum opening.

Recommendation:

Consider retaining specialist to re-align the front steel doors.

Systems

Electrical

The electrical review conducted for the Administration Building noted several code violations that should be addressed. The issue of hallway emergency code exit lighting can be solved with the new inset assemblies in a ceiling. Instead of exposed lights on exit signs, these emergency lights are concealed in a metal box that insets into the ceiling. When the power goes out, the lights go on and drop out of the ceiling boxes, lighting the pathway to the exit. In recent applications where the use of exit signs would marr the historic character of a space or room, fire code officials have allow the use of the ceiling lights as the sole method of creating a lighted pathway to an egress point.

In addition, options were for emergency power to support critical communications was provided, the most practical being the installation of a larger transfer switch. This would allow the use of a larger portable generator (of which one is available in the maintenance yard) to provide power to the panelboard that serve the basement IT communications room.

Recommendation:

Correct the noted electrical code issues; consider ceiling inset emergency lighting over visible assemblies; provide a new transfer switch for increased power to operate emergency communications.

Mechanical

Energy efficient alternates to the current electrical heating system are possible for the Administration Building. The most promising option is a four-zone ducted heat pump system that would provide both

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cooling and heating for the building. Each floor would have two zones (north and south) that would allow for comfort control. The system would supply a fresh air exchange and reduce window opening. There is amply room in the basement and attic for the required air handling equipment and chases are present within the building that would allow vertical movement of supply piping without alteration of any of the historic finishes. The most challenging room would be the lobby where floor penetration for registers through the stone floor would not be advisable. For this room, an air-handler may be needed to be located above a lowered ceiling in the small anteroom between the lobby and the south offices. Location of the heat pumps would be on the east side of the building, where they could be thoughtfully landscaped to lessen their presence.

Recommendation:

Replace the current baseboard electrical heating system with a zoned heat pump system that could provide heating and cooling.

Energy Conservation

One of the most efficient means of improving energy savings is with attic insulation. The present amount of insulation is minimal. Improving the insulation to an R-38 level would greatly reduce energy usage for heating, and eventually cooling.

Prior to increasing the insulation level, all communication and electrical service wiring should be moved to a higher level within the attic. This would make it easier for service personnel to work on the systems without wading through the insulation.

Fire Alarm

The introduction of a fire detection system into the Administration Building is a good idea. The high level of occupancy within the structure and limited egress from the second floor demands a level of protection not currently provided. The issue is the character of the

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system and the details of installation. Fire detection systems, in addition to detection devices, also include provisions to alert occupants to a potential fire condition through sound and site. Manual pull stations will be required too. Within an historic building that contains a high degree of original design and historic fabric like the Administration Building, a careful detailed design analysis is required for the placement of the all the components of the system. One cannot simply let a contractor mount a device at a location of her/his choosing on a wall or ceiling. Where location of such devices will damage or alter historic fabric, different locations should be explored with the regional fire safety engineer in light of the occupancy. The Administration Building has limited public occupancy (people unfamiliar with the building) and a high percentage of occupancy of daily staff (people very familiar with the layout and spaces of the building). In such circumstances, sound devices can be located in recessed alcove ceilings (out of general sight, but audible). Alarm light for the hearing impaired are more problematic, but these sometimes can be located in spaces adjacent to sensitive rooms whereby doorways are lighted by the flashing lights. Under all conditions, the proposed fire detection system should be review by a NPS historical architect prior to installation.

Recommendation:

In the process of designing a fire detection system, a NPS historical architect should review proposed systems and their installation requirements.

Interior

Finishes

Preservation of interior original historic fabric appears to have been an important aspect of the management philosophy for the Administration Building since its construction, and should continue to be a significant aspect into the future. Within the most significant

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spaces of the building, the lobby, and first and second floor hallways, some minor changes have been made, but done with sensitivity to both design and appearance. To the greatest extent possible, these spaces and their details should be preserved.

Alterations inside the offices have focused primarily on creating private office space through the addition of partition walls. Such space has been mostly consumed, and additional office space is now being sought, in some instances through the use of cubicle furniture, and in other simply by adding more desks to a single room. The use of cubicle furniture is more preferred over permanent wall partitions, but as noted in the recent electrical survey, selecting the proper cubicle furniture requires coordination of power/data/communication connections to prevent excessive use of extension cords and creating potential overloading of circuitry. In addition, cubicle furniture eliminated permanent mounting of shelving and files to historic walls and trim.

The last general category of spaces in the building are the basement rooms. These should be viewed and used, as they are, for mechanical and support locations of services. Limited access restricts any consideration of use for staff location.

Lighting

Lighting in historic structures is a challenged balance of original design and efficient functionality. Preserving the original quality of an historic space and meeting current standards for lighting needs in the modern office often cannot be reconciled. There are specific spaces where consideration of appropriate design characteristics of the original concept should be considered in regards to light. Within the Administration Building that space is the lobby. While presently used functionally as a conference and meeting room, the lobby represents the historic formal space of the administration building. The present lighting in the room, while functional, is modern in design and out of character with the historic qualities of the room. Painting the ceiling white has significantly altered one's interpretation of the original

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design. Any return to a stained ceiling would require a proportional increase in artificial light to use the space for conference functions. New compact concepts in LED lighting, with increased efficiency and lighting levels could offer a solution whereby allowing historic lighting to be re-introduced while also providing a second level of lighting for conference use. A lighting designer with experience in historic structures could provide solutions working in conjunction with the NPS historical architect.

Recommendation.

Investigate design opportunities to provide conference level lighting levels in the lobby while restoring both historic lighting and finishes within the room.

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Figure No. 2-3 This photograph is superintendent's monthly report of 10 August 1940, a month after a temporary office had been established in the building for engineering staff.



Figure No. 2-4: View of west elevation, 1943



Figure No. 2-5: View of north elevation, 1943, less than two year after Superintendent Macy and his family moved into the completed building.

There is a complete set of construction drawings for the Superintendent's Residence on file with the engineering division. The set consists of six (6) original sheets from 1939. The drawings do not reflect as-built conditions. Alterations to the plans apparently occurred during construction but were not documented. The alterations include deleting a set of exterior stairs to the basement, and realigning the access stairs of the front terrace to east, as opposed to in line with the front entry door.

Existing Conditions

Site

The Superintendent's Residence was sited across the small ravine east of the Administration Building on a level site. So positioned, it allowed the superintendent to be equal distance from the utility area on the south and office on the west.

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The grade around the structure is relatively level lawn on the east, south and west, with a gentle down slope to the north with a framed view shed to the north. Perimeter lawn landscaping screened the house for a sense of enclosure.

The grade has grown considerable around the building over the years, especially around the back of the building. In several locations, the sills of the foundation vents are at, or slightly below grade. Part of this situation has occurred naturally from vegetation accumulation, but part may also be due to changes in the vent design during construction.



Figure No. 2-6: Existing foundation vent on rear elevation.

As designed the vents were to be located at the top of the veneer stone of the foundation. This is the height of the first floor framing, and perimeter floor joist normal to the vent would have crossed in front of the vent opening. By lowering the vent location, the vent was positioned below the floor framing. The original design had the vent 12" above grade. The relocation of the vent moved it to within 1 or 2 inches of the proposed finish grade. Many of the wooden vent frames are now experiencing deterioration (See further discussion under Foundation below).

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Initially, the roof drainage around the structure was left to natural grading. Downspouts emptied onto splash blocks at the base of the building. This condition was changed fairly recently as there is now an underground plastic drainage system for most of the down spouts at the rear of the structure. A separate clay tile foundation drain was laid originally around the footings of the basement walls and day-lighted in the slope to the north.

The gutter system originally was a combination of wooden and half-round copper gutters. The detail of the exposed rafter end at the roof eaves was slightly recessed below the roof sheathing. The original gutter system was changed out to modern aluminum gutters (most likely when the underground drain line was installed). The rafter tails though had to have an extension to receive the new surface mounted gutters.

Structure

Foundation

The structural foundation varies around the building. The first floor stonewalls found on the east and north portion of the two story section, plus those of the single story living room to the west, extended into grade and rest on a 8" reinforced concrete footing. The building has a partial basement under the two-story section, and where the base walls form the exterior foundation, a reinforced concrete footing and stem wall have a built-in ledge to support an exterior veneer of stone. The remaining foundation walls beneath the kitchen and original laundry (now a lavatory) are stone on a concrete footing. All the interior foundation walls are reinforced concrete.

From the interior, all the concrete portions of the foundation appear in good condition. This is not the case necessarily on the exterior. Areas of the foundation veneer stone on the rear of the building are experiencing delamination of the face in the courses of stone at grade level. As discussed in the section on the Administration Building, the clay content of the stone binder swells with moisture and disrupts the integrity of the stone.

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The other issues of concerns are the foundation vents and the rear basement window. The basement window was part of the original design, but was to be in a stairwell that led down the backside of the building into the basement. In this location, its elevation was below finished grade, but did not matter being in the stairwell. With the abandonment of the stairwell, the window ended up below grade and a shallow stone window well was created for it.



Figure No. 2-7: Veneer foundation stone deterioration



Figure No. 2-8: Shallow window well

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This shallow well has probably never been cleaned out. No drain was observed. The wooden windowsill is deteriorated.

To support the lintel stone over the foundation vents and basement windows, a steel angle was used in some instances and in one location simply a couple of rebar rods. Both the rebar, and especially the lintels are highly oxidized and corroded, enough so that sections of oxidation are flaking off.

Chimneys

There are two chimneys on the building. One serves the living room fireplace and the other is a double flue chimney for the kitchen vent and basement furnace. The fireplace chimney was a concern in the seismic study of 2001 but was found to be of such a design and mass as to not be considered a risk for overturning in an earthquake. There does appear to be some open mortar joints at the top of the chimney. The chimney has a metal weather cap. The other chimney is not capped, as it is active for the furnace. Being highly exposed to the weather, the stones of the chimneys are beginning to show signs of deterioration in the form of cracked exterior faces and delamination. This is most apparent on the corner stones of the living room chimney.



Figure No. 2-9: Surface deterioration on the chimney base.

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Walls/Roof/Seismic

The walls above the stone of the first floor, the two-story framed walls of the rear elevation, and the roof rafters do not show signs of distress or distortion. The 2001 seismic study found no deficiencies in the building structure do the "...the high quality and strength of construction."

Exterior Envelope

Steps, Landing, and Terrace

A significant effort was put forth in developing a stone terrace off the front elevation of the Superintendent's Residence. The terrace was formed by constructing a notch in the stonewall of the house and in a perimeter stone terrace wall. A reinforced concrete slab was laid over consolidated backfill. A full stone course, 6" deep according to the design documents, was then mortared to the concrete slab. This is somewhat unusual as the traditional stone flagging normally measured 1" to 3" in thickness. Associated stone steps also had a concrete foundation. Two openings were left in the terrace on either side of the steps for plantings.

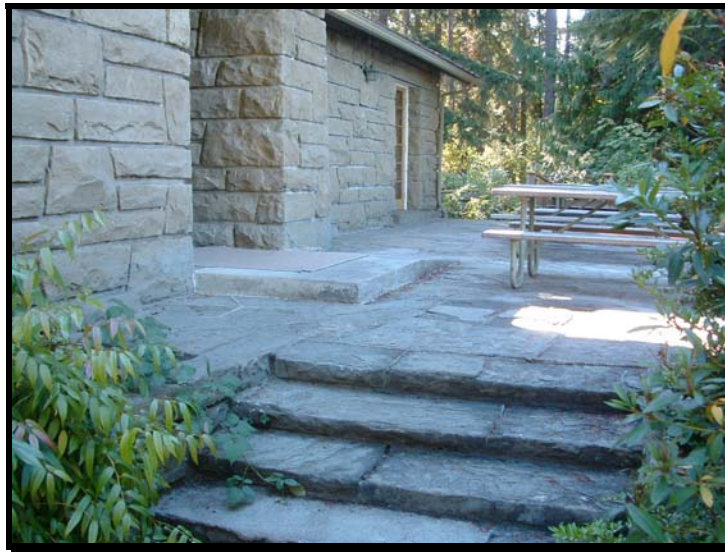


Figure No. 2-10: Steps and Front Terrace

Condition Assessment, Evaluation and Recommendations

Employed in the horizontal manner of the terrace and steps, the local sandstone has suffered irregular surface erosion and delamination in most of the stones. Erosion has caused mortar joint to become proud of the stone surface. Repairs have been attempted and well meaning.

Walls

The non-stone exterior walls are covered with coursed wood shakes that are painted. The shakes were noted on the original drawings to be 25" laid 13" to the weather and doubled coursed. The current shakes are laid 17" to the weather, resulting in fewer courses than shown on the original drawings. Similar to the Administration Building, the design intent of the original drawings was to have the shingle courses align with the muntins of the windows. This did not apparently happen as the present coursing matches early historic photographs of the structure during construction. The shingles appear to be in very good condition.

Along the rear elevations, a trim molding was used as a transition between the foundation stone and the lower shingle course. The molding is very deteriorated in places.



Figure No. 2-11: Note the trim moldings atop the stone



Figure No. 2-12: The foundation trim moldings is quite weathered and deteriorated.

At the first floor stonewalls, the construction detail of the wood frames that hold the steel windows and doors were altered. In changing the design, wood frames were set into a rebate of the outer stone wythe. This created an irregular joint between stone and milled wood. This open joint is accessible to insects.



Figure No. 2-13: Note open joint at wood frame/stone interface.



Figure No. 2-14: Pest control of carpenter ants by a helpful arachnid

Roof

There are three types of roofing on the building. The major portions of the roof are covered with a wood shake. These shakes look to be a fairly recent installation (2000) and are in good condition.

The second type of roof occurs over the access door to the second floor sun porch off the upstairs hallway. This is a shallow slope flat seam metal roof incorporated at the base of a valley flashing. Access was limited to this roof, but there did not appear to be any leakage associated with this location.

The third type of roof is the quarry tile roof of the sundeck. Traditionally a roof of this type is constructed by installing a coal tar and felt built-up roof over a wood deck, and then setting quarry tile in a layer of coal tar. Joints between the tiles were then mortared. Metal base flashing was interlaid between felt courses and carried up the sidewalls. Thru-wall copper drains soldered and set in coal. For extra protection, an overflow scupper was installed at a slightly higher elevation than the drain.

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Figure No. 2-15: Quarry tile roof of sundeck; note overflow scupper has been covered.



Figure No. 2-16: The drain from the sundeck discharges into the leaderbox; the opening to the right of the leaderbox is the overflow scupper.

Condition Assessment, Evaluation and Recommendations

The sundeck roof does not appear to be experiencing any leakage. The new gutter system was designed though to re-route most of the upper roof drainage away from the sundeck. Only moisture that falls directly on the deck is drained through the thru-wall outlet.

Windows/Doors

Like the Administration Building, the doors and windows of the Superintendent's Residence are steel frame. They are well maintained and painted on the exterior surfaces. When opened, both doors and windows exhibit oxidation on interior surfaces of the fixed frames.

Interior Spaces and Finishes

Basement

The partial basement under the residence was designed as a mechanical space. Today, it is used for storage as well as mechanical.



Figure No. 2-17: Basement Storage

Condition Assessment, Evaluation and Recommendations

Living Room/Conference Room

The former living room is now used as a conference and meeting space. Its natural wood interior finish and vault ceiling, coupled with limited natural lighting, makes for a dark space. This has been augmented by running a surface mounted conduit from an original wall sconce outlet to a series of overhead lights mounted on wood members that were added to the original the open ceiling rafters. The stone surround of the fireplace exhibits stains and efflorescence deposits either from a flashing leak or rain penetrating the flue. The stains are from flue soot and the white stains from leaking of calcium from the mortar joints. This leakage did not appear active. It may have been curtailed with the installation of the metal chimney cap. The lintel stone is cracked. Where it cracked there was a small amount of spalling. The crack appears old and inactive. The fireplace is closed off and not used.



Figure No. 2-18: Former Living Room, now conference room.

Kitchen Hallway

From the east entry a hallway runs past the former laundry room and kitchen to the central stairway hall. In the ceiling of the hallway a

Condition Assessment, Evaluation and Recommendations

small loss of plaster is present. From the original drawings, at this location there is a cool water supply line to the upstairs restroom.



Figure No. 2-19: Plaster deterioration in the ceiling of kitchen hallway.

Stairway Hall

In the ceiling of the stairway hall is a crack in the plaster just above the foot of the stairs. This is the location of a double trimmer joist that spans the hallway and carries the floor joists of the northwest corner bedroom. According to the original drawings, the bedroom has 2 x 8 floor joists. The former bedroom is now an office.

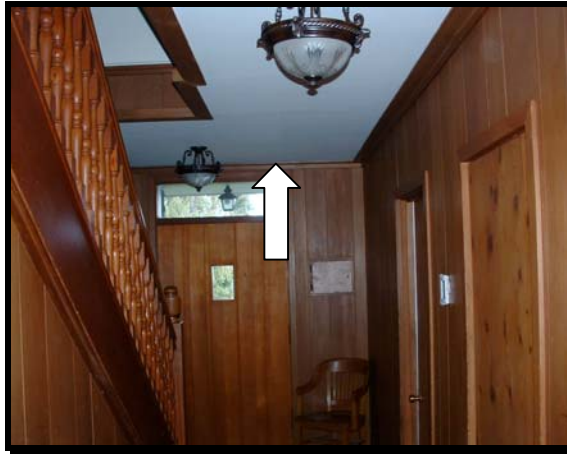


Figure No. 2-20: Crack in ceiling plaster

Evaluations

Site

The challenge of the site of the Superintendent's Residence resides along the rear portion of the structure. The grade, being above or level with the foundation vents, and higher than the windows, needs to be lowered. This will require removal of existing vegetation and regrading the site. Given the level nature of the grade, this will necessitate creation of a swale along the perimeter of the building. Even then, the basement windows will still need to have small window wells created. While feasible, this solution is a major task and disruption to the site.

As an alternate, the vent opening could be reduced in size and the windows eliminated, filling in the area of foundation to above grade level. This action would be changing the original and removing historic fabric, but could be less disruptive than a grade change.

Recommendation:

The better solution is to explore feasibility of a landscape program to regrade the site. It would not require alteration of the building fabric. Yet, it would need to be balanced against the cultural landscape survey recognition of historic planting patterns.

Structure

Foundation

Areas of the foundation veneer stone that are deteriorating are load bearing to some degree. It is the inner portion of the 18" thick stonewall that carries the wall load above. The deterioration has not reach enough depth to be critical at present, but in the course of another decade can weather, and will, to the point where the stone will need replacement. When replaced, the new stone should be selected to have matching color and texture, but with a high degree of durability.

Condition Assessment, Evaluation and Recommendations

The existing shallow window well around the basement window frames need to be cleaned out and the window frames/foundation vent frames restored. The steel angle lintels need to be cleaned and painted. If severe section loss is encountered during removal of oxidation from the steel prior to painting, then the angle needs to be removed and replaced.

Recommendation

Plan in the future to begin a replacement program for the exterior wythe of foundation stone; clean and repair basement windows and foundation vents; clean and paint steel angle lintels, replacing if section loss is occurring.

Chimney

The high degree of exposure of chimney tops requires periodic inspection of the capstones and mortar joints for weathering. Both chimneys appear to be experiencing modest degree of cracked mortar joints and stone weathering. The next time a lift is available, the chimney tops should be inspected. Crack and open joints should be regouted and pointed. Any cracked or severely weathered stones replaced.

Recommendation:

Conduct a close-up inspection of the chimney top for condition and development of a maintenance repair program.

Exterior Envelope

Steps, Landing and Terrace

The deterioration of the stone of the front terrace and steps cannot be stabilized. The problem is inherent in the stone. Replacement is the only long-term solution and will be a major project. If constructed as per original drawings and the stone is not simply a thin flagstone but 6"

Condition Assessment, Evaluation and Recommendations

thick, the larger question will be to decide where to stop. Replacement of the terrace stone and step will bring into question the condition of the perimeter terrace wall, which is of the same original stone. The issue will be whether to rebuild over this wall. If so, then the project becomes a complete terrace rebuild.

To get a better picture on how to proceed, one of the terrace stones needs to be removed along the outer edge of the terrace whereby the condition of the terrace perimeter wall/concrete sub-slab interface can be examined and evaluated. This would also allow inspection of the top of the outer terrace perimeter wall. Depending on conditions, the scope of the project can be refined.

Recommendation:

Consider dismantling a portion of the terrace to further understand the existing conditions in order to develop a more refined scope of a restoration project for the terrace.

Walls

The general field of the exterior walls appears in good condition. The most serious problem is with the plate moldings at the base of the frame portion of the walls along the rear of the building. Deterioration of this molding potentially allows moisture into the base of the structural wall. The molding needs to be replaced, and in the process a flashing assembly installed to provide additional protection for the structural wall.

At the window/door frame interface with first floor stonewalls, the open gaps should be filled with a compressible backerrod and closed with sealant to prevent insect infestation and moisture entry.

Recommendation:

Replace the plate moldings along the base of the frame wall; seal gaps around windows and doors.

Condition Assessment, Evaluation and Recommendations

Roof

The biggest issue with the roof will be keeping the drain of the sundeck free from debris and duff. The overflow scupper should be opened as a precaution.

Recommendation

Reopen the overflow scupper of the sundeck roof.

Windows/Doors

The windows and doors appear in good condition. When painted though, the frames need to be opened so the interior surfaces of the frames and sash can also be painted.

Recommendation:

Maintenance painting procedures should include painting of the interior surfaces of frames and sash.

Interior Spaces and Finishes

Basement

There are no building conservation issues with the basement. A question for management is the use of the space for storage. Both the basement room and most of the crawl spaces under the house are brimming with files, bikes, equipment, etc. As this increases, there will be little space for needed maintenance of mechanical/electrical/ communication systems.

Recommendation:

All crawls spaces should be cleared of storage and left open for maintenance work.

Living Room/Conference Room

The use of the former living room as a conference/meeting room is very appropriate. Improvements of meeting requirements like a projection screen, digital projector, and video conferencing equipment can be introduced into the space by sensitive and well-planned design. While functional, the present lighting system could be improved to better underscore the historic qualities of the space and improve versatility.

At the fireplace, once it is verified the leak in the chimney is not active, the soot and efflorescence can be cleaned. Chemical cleaning will be very difficult on this stone. Consideration should be given to utilizing a very mild form of abrasive cleaning. Aggressive abrasive cleaning like sandblasting is not being suggested. Cleaning with other agents like walnut shells or other less aggressive powders will work better on this stone than chemicals.

Kitchen Hallway

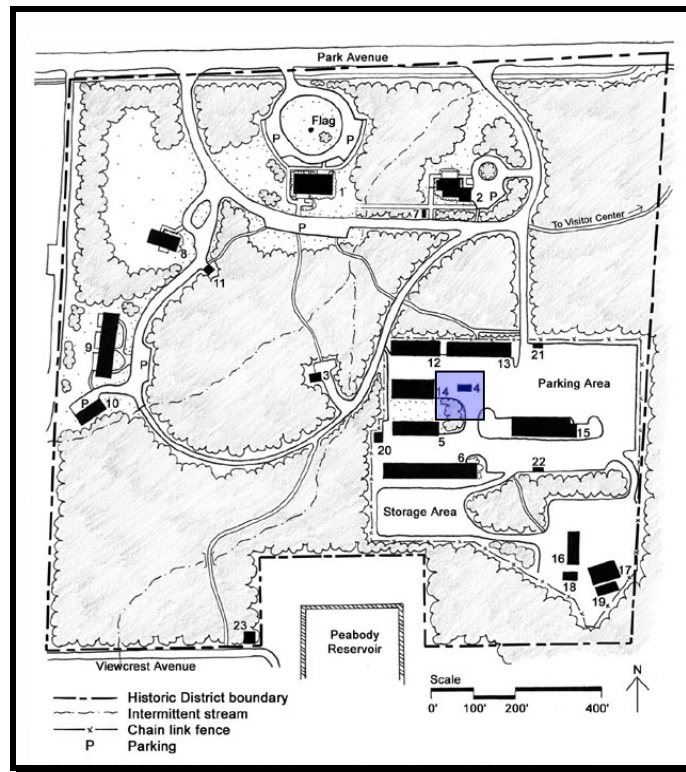
The indication of a plumbing leak needs to be investigated as to whether it is active. It is assumed the staff uses the upstairs restroom, and it appears the bathtub for plants. Repair will require opening the ceiling for access.

Stairway Hall

The crack in the ceiling of the stairway hall is directly below a wall of the second story bedroom above. With 2 x 8 joists under this room, spanning 12 feet, this is reaching the limit for an office loading. Residence construction reused for office needs to take into consideration the additional weight of office files and equipment. The crack in the plaster is a concern of overloading the floor framing system. A review of the current office equipment should be conducted and if it exceeds standards

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for deflection and bending of the floor joists, then such equipment should be moved to the first floor.



Gas & Oil House Building: #3

Introduction:

Unlike the adopted modernistic style of the Administration Building, the other four buildings constructed initially at the Headquarters area were a stronger expression of rustic design. They all followed details that were first developed for the Equipment & Supply Building (#1000). These include a heavy stone wall, sometimes around a frame wall, slightly battered, or flared, corners within the stone wall, wood windows, exposed rafter tails, shake roofs, and false outlooker beams at the gables.

The Gas and & Oil building was the last of these four buildings to be designed, construction drawings being completed in May of 1940. In keeping with the irregular budget allotments and availability of workmen,

Condition Assessment, Evaluation and Recommendations

the Gas & Oil building was the first of the four maintenance buildings to be completed. It was started in June of 1940 and completed by August 1940.



Figure No. 3-1: Gas & Oil House under construction, June 24, 1940.

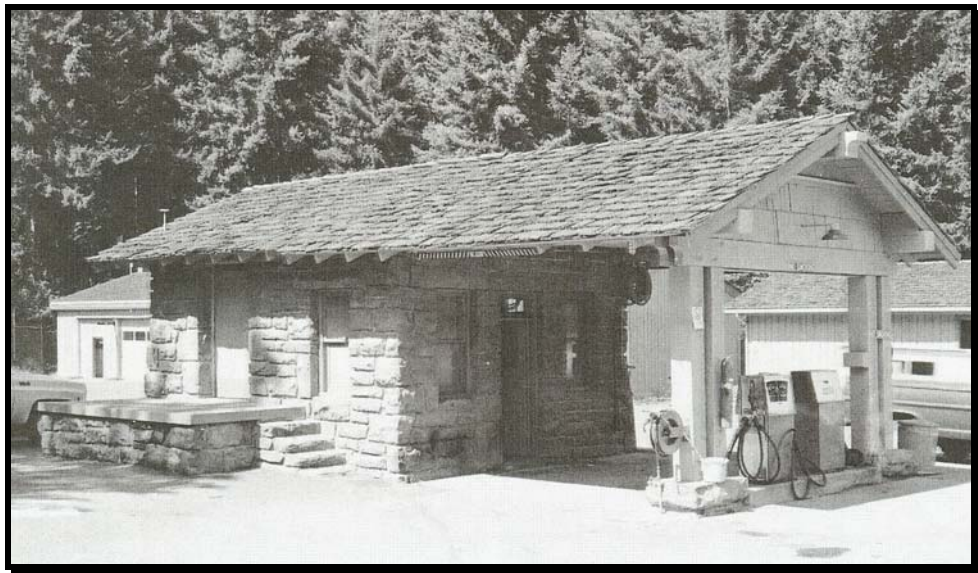


Figure No. 3-2: Forty-three years after construction, these 1983 photographs show the building was still being used for vehicle servicing.

Today, it is no longer used for fueling vehicles but used as storage for parts and fuel for fire crews.

Condition Assessment, Evaluation and Recommendations

Existing Conditions

Site

At the time of its construction, the Gas & Oil Building was the first structure erected in the newly defined maintenance or utility area. According to the location plan on the original design drawings, it was intended to be at the inner corner of a storage yard. As the first building, it's site and grade would begin to define the maintenance area. As the plans for the utility area were refined the pattern of the site evolved and by 1944, the Gas & Oil Building was along the main vehicle circulation into the maintenance area, but offset and buffered on three sides with the surrounding second growth forest.

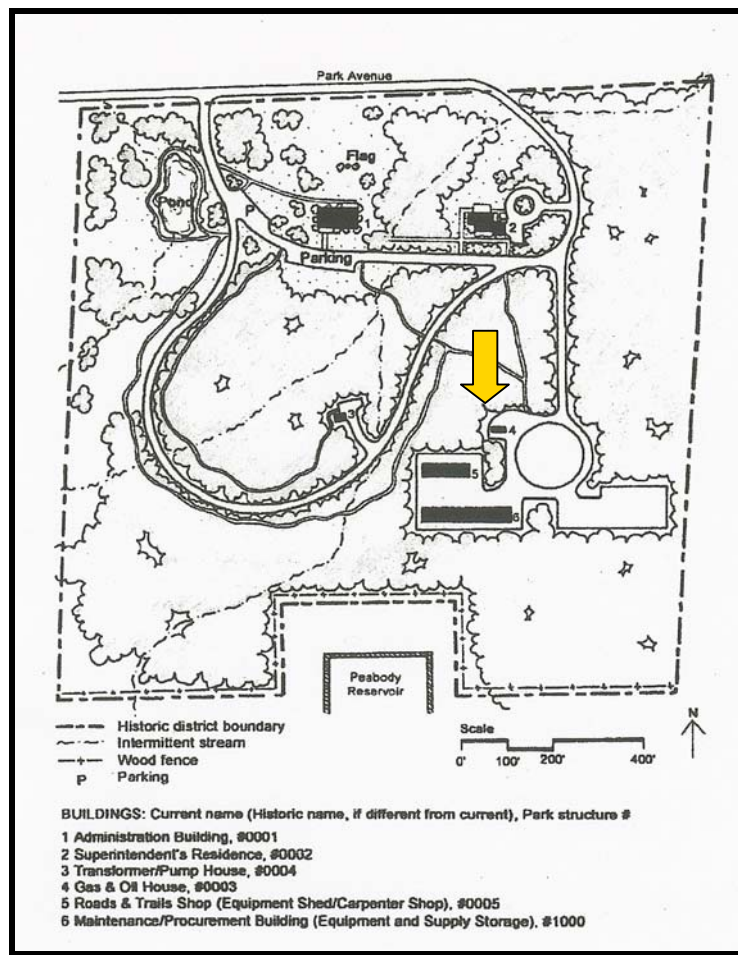


Figure No. 3-3: Headquarters Site Plan, 1944.

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As such, the drainage would have been a simple issue site contouring. Things changed over the years and additional structures were constructed to the west and north, and the site opened to paving on the south and east. Currently, the site is surrounded on all sides by hard-scape asphalt-paving right up to the base of the exterior stonewalls. The paving has a slight slope from south to north. Site drainage flows down towards the building. There is a modest concrete formed grade swale that slopes east from the southeast corner of the building into a swale in the asphalt paving just to the east of where the gas pumps were originally located. Site drainage flowing down against the base of the loading dock appears to move to the west and around the building. The grade along the north elevation slopes down to parking area storm drains.

Structure

Foundation

While other structures were being built with reinforced concrete foundations, the stonewalls of the Gas and Oil House have no such foundations, at least to our knowledge. The original drawings have the stonewalls beginning two feet below grade on compacted soil.

Walls

The stonewalls are of the local sandstone. As with all the stonework of the early years, the corners have an eight-inch flair, a very common detail for the rustic style. The walls vary in thickness. The wall above the floor plane is roughly 12 inches deep. The interior floor is a reinforced concrete slab, and where the floor reaches the exterior walls, the wall was widened by four inches to provide a shelf to support the concrete slab. Since the interior floor has two levels, one at grade and one matching the exterior landing, there is a transverse concrete wall across the center of the building to carry the front edge of the slab. The space beneath the raised slab section was backfilled with earth.

Due to moisture contact at grade, and most likely moving up from the soil below, the low courses of stone are discolored (gray) and exhibiting

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minor surface deterioration. Moderate to serious deterioration of stone has occurred in the stone of the loading dock on the south elevation, especially in the exposed steps, and in the base stones of the columns of the east canopy.

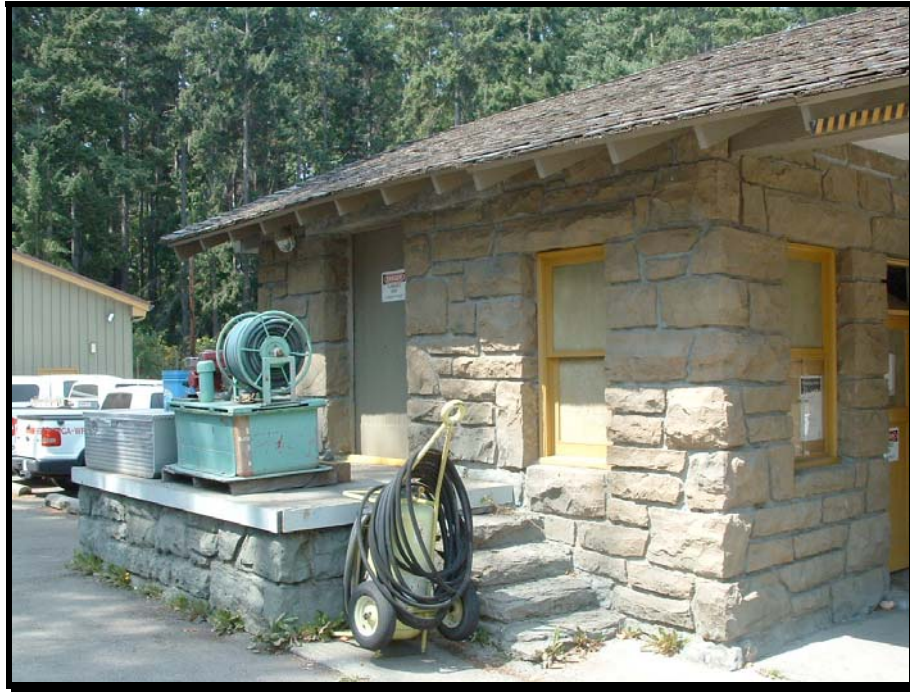


Figure No. 3-4: Note stone weathering in the landing steps.

There also appears to have been some building settlement in an east-west axis transversely across the building. On the north elevation there is a crack that has been repointed beneath the center window. On the south elevation, two cracks run from the base of the door jambs into the concrete slab, coming together just outside the door, and forming a single crack across the slab. There also has been some repointing in the stonewall just above the entry door of the east elevation. The cracks appear stable at present.

There is some minor mortar missing around the door and windows of the east elevation.

Above the south elevation sliding door and above the triple hopper window of the north elevation, there is an original wood lintel (a single

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stone of this length would have to have been deeper in depth for the span than there was room within the building design. These wood lintels have been covered with a thin coating of plaster and tooled to look like stone. There is some minor cracking in the plaster.



Figure No. 3-5: Note the faux stone plaster covered wood lintel above the window.

Roof

The roof structure consists of 2 x 6 rafters with 2 x 6 ceiling joists as collar ties, a 2 x 8 ridge beam, and 1 x 6 struts. The rafters rest on a bolted wood plate atop the stonewalls. The rafters support 1 x 8 decking. The rafters are exposed at the eaves. The rafters appear in good condition, with the exception of a cracked gable rafter on the north side of the canopy. The exposed decking of the north side of the canopy eave shows signs of deterioration.

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Canopy Frame

The canopy frame was the only location where a concrete foundation was used, as it supported the gas pumps. The wood columns were set on base stones that are pinned through the stones into the concrete. Each pair of columns have bolted transverse girders that carry the 10" x 10" beams that span to the building for roof support. At the ridge of the gable there is a false beam outlooker with a cavetto molding profile (a concave curve of roughly a quarter circle). Such outlookers are present on the west gable also. The girders of the canopy have the cavetto profile, too.



Figure No. 3-6: Note the cavetto profiles on the ridge outlooker and cross girders.

The original drawings show the two plate beams as having a cavetto profile. Either they were never executed or developed deterioration and have been cut off. All the exposed beam-ends have been covered with sheet metal for protection against moisture.

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Exterior Envelope

Roof

The original plans detailed the roof to be “rigid asbestos shingles”, presumably for fire protection. It is unknown if these were ever installed. In the 1980”s, the building had a wood shake roof. The current roof, installed in 1999, is wood shingle and looks in good condition. It was changed from shake to shingle based on early photographs of the building.

Windows/Door

All the windows in the building match those detailed on the original drawings. They are all well maintained and in fair condition. The sliding door off the loading dock is a kalamien door. A kalamien door is a wood framed door covered completely with sheet metal and is considered as a fire door. Though the original drawings for the building show a vertical “V” joint wood doors, this kalamien door is probably original as fire protection.



Figure No. 3-7: Kalamien fore door at loading dock.

Evaluations

Site

There is little one can do about the existing site drainage without some intervention with the existing paving, and even then it would be a modest improvement. The south roof eave drains onto the landing dock and landing steps. The eave is not even, being held short at the landing door for headroom, and thus a continuous gutter will not work. It is probably best to just leave the situation for the present.

Structure

Walls

The issue of the slow deterioration of the lower courses of the stonewall is a challenge. The stone has been in service for sixty-nine (69) years, a relatively short time for a building stone. The long-term solution is to replace the existing stone with a more durable stone, but with the exception of the stone steps of the landing dock, the situation has not reach that point yet. That point will be reached when roughly there is a loss of 2 to 3 inches off the face of the stone, which should take several more years. There are consolidation treatments for sandstone, but the consolidants require a specific pore size within the stone. In testing other building sandstones from west of the Cascades, all, like this deposit, had a high percentage of clay in the stone that prevented the use of consolidants. Other sandstone deposits, like the Wilkerson deposit off the northwest corner of Mount Rainier, are so durable as to never need a consolidant. Eventual replace of the stone is the recommended treatment, but it is not needed immediately.

As for the stone steps, their high level of exposure has caused significant delamination and spalling, causing the steps to be a safety hazard. They must get quite slippery during wet or freezing weather. How often they are used is another matter. Obviously, fuel and lubrication supplies are brought into the building on a periodic basis, but probably off the end of

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a truck and onto the dock. The steps can either be replaced, or closed to use. If the steps are frequently used, then they should be replaced. If seldom used, they can be blocked off and eventually be replaced in the future when other work is needed on the rest of the building.

The plaster covered wood lintels do have some cracks, but they do not appear active and they are well protected from the weather. They should be monitored on a periodic basis. If the cracks appear to reactivate, do to further building settlement or movement, then they should be repaired.

Recommendation:

Replacement of the steps should be a priority only if used on a consistent basis by staff; monitor plaster of the lintels for crack reactivation.

Roof

The next time the roof shingles are replaced, which should be a good while given there current condition, all areas of deteriorated sheathing and the cracked gable rafter should be replaced.

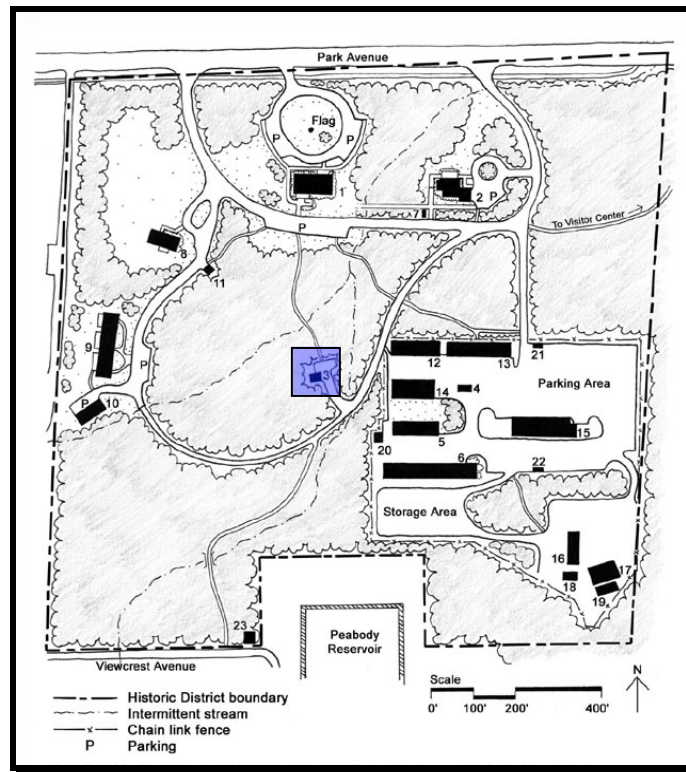
Recommendation:

Repair roof structure items at next re-roofing.

Exterior Envelope

Windows/Doors

The doors and windows appear to have been well maintained. They should stay on a periodic maintenance cycle and be retained as part of the historic fabric of the building.



Transformer Vault & Pumphouse **Building: #4**

Introduction:

The Transformer Vault & Pumphouse building was a critical structure for the distribution of power and water within the Headquarters area. It was sited in the virtual center of the property (see plan above) to efficiently serve all areas. It was designed in July 1939, and is detailed based on the precedents established by the design of the Equipment and Supply Shed. Construction started in the spring of 1940, prior to the start of the Gas & Oil House, but it was not finished until October 1940, two months after the Gas & Oil building was completed.

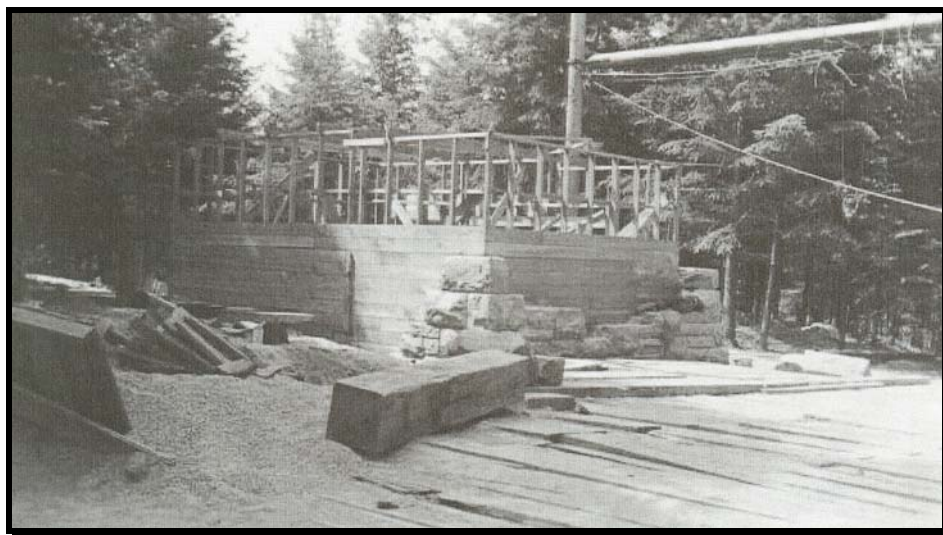


Figure No. 4-1: Transformer and Pumphouse Building, 24 June, 1940; included in the Superintendent's monthly report for 10 July, 1940; noted as temporary inactive.



Figure No. 4-2:Transformer and Pumphouse Building, August 2009.

Existing Conditions

Site

The Transformer and Pumphouse building is sited within the second growth forest just off the original residential circular drive to the west of the maintenance area. A building site was leveled from a gentle gradient descending south to north. On the west, south and east elevations the grade at the base of the structure slopes into the building. On the east side, this is partly due to the level of the roadway as it ascends up the property. On the west elevation, the storage of material and equipment against the building hampers any uphill drainage.



Figure No. 4-3: Equipment and tools stored against the west wall.

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The structure does not have gutters. Moving roof drainage away from the building is dependent on the site contours

About twenty feet to the west of the building is a pit partially covered with a plywood sheet. This pit is surrounded by forest growth and is not easily detected when walking through the area.

Structure

Foundation

Original construction drawings for this building have not been discovered, but as it was constructed in the same summer as the Gas & Oil House, and is similarly detailed, it probably has no concrete foundation. This is further evident along the south elevation where former underground electrical lines entered the building and no concrete foundation is present. ¹The stone at this point is 16 inches wide and below the interior concrete slab floor, suggesting there was a shelf built into the stonewall to support the slab.



Figure No. 4-4: Opening through stone foundation to under interior floor slab.

¹ Transformer & Pumphouse wiring detail, Drawing NP-OLY 5315A; shows 3 –3” conduit gutter under concrete slab floor below original electrical panel locations.

Condition Assessment, Evaluation and Recommendations

Walls

The stonewalls are of the local native sandstone, laid in similar courses and dressed the same as the Gas and Oil Building. This was CCC work. The CCC work was not as crisp and sharp as the stonework on the Administration Building or Superintendent's house. It had a more rustic character, but was well laid. As with the other structures of the period, the stonewalls were flared at the corners. The window of the west elevation has a slip sill that has been poorly repointed.

Roof

The roof structure appears to be identical to the Gas & Oil House. The exposed rafter tails are 2 x 6 at 24" on center, notch over both the top plate and stonewall. The roof deck is solid 1 x 8, exposed at the eaves and gables. Verge rafters are 2 x 8 with a 1 x 2 trim. The north slope verge rafter on the west gable is split. One blocking between rafter tails is loose on the north elevation.

At the gable ends there are false outlooker beams with a cavetto profile. The beam tops have been covered with sheet metal for weather protection. The sheet metal does not go down the face of the beam and there are cracks and checks, along with discoloration, present.



Figure No. 4-5: The false beam-ends are cracked and checked.

Condition Assessment, Evaluation and Recommendations

Exterior Envelope

Roof

The roof was recently replaced with new shakes and is in good condition.

Windows/Door

The paint coating of the three double hung windows and entry door are in poor condition. Both the windows and door have gaps around the trim and stone interface. On the north elevation, the lower sash is missing glass. The windows have been crudely boarded over from the inside.



Figure No. 4-6: Missing glass in north window

The upper sash of the south elevation window has an acrylic panel instead of glass.

The frames and trim of the windows and door appear serviceable. Both the door and windows have been trimmed with a molding that was traditionally used for brick buildings. The door has a concrete stoop both on the exterior and interior faces.

Evaluations

Site

Regrading on the south, east and west elevations should improve the site drainage around the building. The improvements would be to create a positive slope away from the base of the building and into a grade swale. It would also be helpful to discontinue the practice of storing equipment against the base of the building. To the west of the structure, the pit in the ground should either be filled, or properly covered and flagged for location.

Recommendation:

Regrade the site and address the safety issues of the open pit.

Structure

Foundation

The open hole in the foundation on the south elevation should be repaired with new stone. This will require digging out the area and inserting new stone to match, grouting and pointing the joints. The mortar should match the existing in color and texture. The mortar should be a Type N in composition and grade.

Recommendation

Repair opening in the foundation.

Walls

On the west elevation, the joints of the slip sill beneath the window should have the existing mortar removed and a more careful repointing installed. The joints of slip sills (sills that have mortar joints at the edge of the jambs) are prone to failure due to their location and require periodic replacement.

Condition Assessment, Evaluation and Recommendations

Recommendation:

Carefully remove the existing mortar; clean the joints and deep grout joint to within 1 1/2" of surface, then repoint, creating a recessed joint to match the existing joints of the building, making sure the joint has a slight slope for positive drainage.

Roof

Though the roof has been replaced, it is unknown whether the cracked verge board of the west elevation was replaced, but should be if not. It will require removal of the board with the new roof in place but can and should be done.

Recommendation:

Replace cracked verge board.

Exterior Envelope

Roof

All the exposed trim, outlookers, underside of the roof sheathing, and gable end vents should be given a maintenance paint coating. As part of this process, the areas of exposed end grain on the false outlookers should be pre-treated with a borate fungicide that is paintable such as Boracare®. If there is minor end grain deterioration, then the use of a clear penetrating epoxy sealer may be warranted.

Recommendation:

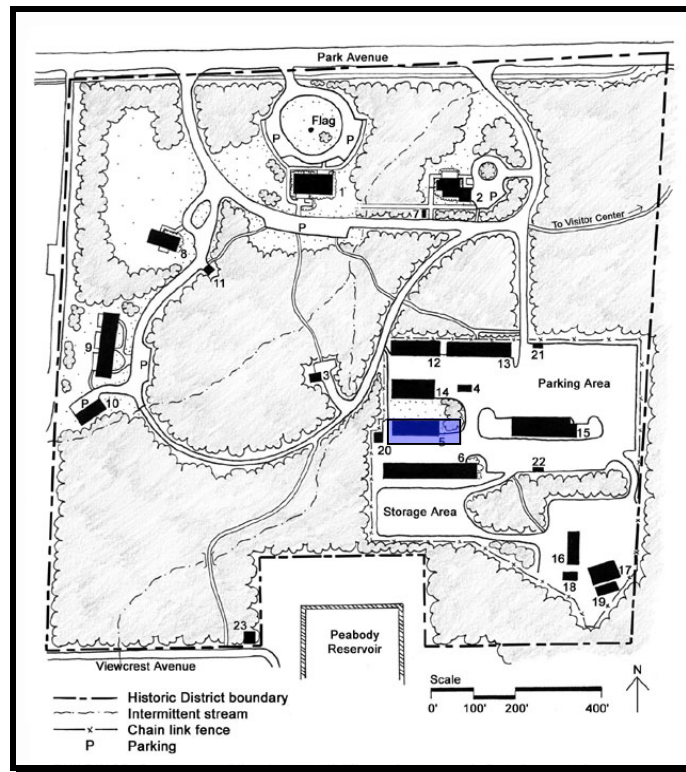
Apply a borate fungicide prior to painting selected areas of trim with end grain exposure.

Windows/Doors

The window sash with broken or missing glass should be repaired. The interior boards over the windows should be removed, the trim repaired/filled, and the complete window/trim assembly painted. If security is an issue, then a more refined and effective barrier design can be developed for this application. On the exterior, the interface gap between frame and stone should have a backerrod and paintable sealant installed for weather protection.

Recommendation:

Repair and paint windows; install exterior sealant components; if required, design, fabricate, and install a more appropriate security system.



Equipment Shed: Roads & Trails **Building: #5**

Introduction:

The Equipment Shed was the third building constructed associated with maintenance and service. The constructed drawings were finished January 1940, prior to the start on any of the buildings of the maintenance area. The building was designed by Cecil Doty, an architect who became associated with many of the modernistic buildings of the Mission 66 era. Influenced by the modern style, his early work followed the precedence of the rustic design, and the Equipment Shed is virtually a smaller version of the earlier design for the Equipment & Supply building (#1000). Doty's design though has subtle adjustments alluding to the future change in park building design. While modest, one detail of the Equipment Shed that came to be integrated into later design was the use of the board on batten in the gable ends of the

Condition Assessment, Evaluation and Recommendations

Equipment Shed. This detail came to be repeated in many of the Mission 66 buildings like the Auto Shop and the rebuilt Equipment and Supply shed, both from the 1960's. Ironically, the rear wall did not use this detail, but is batten over board.

The Equipment Shed was constructed by CCC crews starting in March 1941 and was placed into service prior to the end of the year. It has been altered with the enclosure of several of the bays, the conversion of some bays to offices and material storage, and the installation of a new metal roof. This has resulted in appearance changes to the bay openings, but beyond these alterations, the essential exterior and interior framing is the original.



Figure No. 5-1: Equipment Shed under construction, spring 1941.



Figure No. 5-2: Equipment Shed, August 2009.

Condition Assessment, Evaluation and Recommendations

Existing Conditions

Site

The building sits on a level site with hard surface on the south and west elevation up to the wall line. On the north (rear) elevation there is a natural gentle slope grade away from the building. The gable roof slopes to the north and south elevation. There are no gutters or downspouts on the north elevation. On the south elevation, the exterior gutter is continuous along the eave and has four downspouts that daylight onto the asphalt. The driveway has a storm drain for the run off.

The end downspouts, while draining onto the asphalt, also saturate the stone near the base of the downspout. This has resulted in an accelerated deterioration of the base stone through cracking and delamination.



Figure No. 5-3: Southwest corner; the discoloration of the stone is from excessive moisture from the adjacent downspout; the weathering causes associated mortar cracking and bond loss.

Condition Assessment, Evaluation and Recommendations

Structure

Foundation

The original exterior walls are stone. These stonewall rest on a concrete foundation. On the interior and original south elevation of bay openings, intermediate wood columns have individual concrete footings. The concrete foundations of the stonewalls have minor shrinkage cracks from lack of control joints.

Walls

The exterior walls are composed of a combination of stonewalls and wood framing. The gable ends are stone up to the rake of the roof with a central inset of wood framing for a series of windows. Along the rear of the building a framed wall sits atop a short stonewall.

The walls do not show indications of distress or distortion.

Roof

The structure is composed of 2 x 6 rafters with 1 x 8 straight sheathing. Along the north slope there is a deflection in the plane of roof.



Figure No. 5-4:Roof deflection along the north slope

Condition Assessment, Evaluation and Recommendations

Seismic Study.

In October 2001, a seismic study of the building was conducted following the Nisqually earthquake of February 2001. The study found deficiencies in the roof sheathing, lack of adequate shear walls, and the need to anchor the roof diaphragm to the exterior walls. The study resulted in seismic upgrades to the buildings involving new plywood sheathing and wall anchors.

Exterior Envelope

Walls

The stone of the walls has minor to moderate weather, especially around the base where in contact with the soil. The mortar joints close to the base have areas of failure, again from weathering of the stone.

The wood in gable end walls and rear wall are well painted, as are the windows. The juncture, or interface, of the stone and window frame is quite open in places, to the extent that in some areas there is clear daylight through the wall. At the northwest corner of the stone and window frame interface there is active carpenter ant movement in and out of the openings.

All the false beam outlookers have been capped with metal to protect the end grain from exposure. The outlooker at the southeast corner appears to have considerable interior deterioration.

Roof

The original wood shake roof has been replace with a standing seam metal roof. The roof appears in good condition. The ends of the pans have been screwed to the decking

Windows/Doors

The multi-lite double-hung gable end windows and the single lite double hung windows along the rear elevation appear original to the building, matching the original drawings. Originally, the front elevation was a series of bay doors, one of which included a man door. All the doors and windows now across the south elevation are additions.

The windows and doors appear in good condition with the exception noted of the gaps between frame and stone at the original window frames.

Evaluations

Site

In general the site drainage is adequate. It would be preferable to extend the downspout at the southeast and southwest corners farther from the building to reduce moisture in the stone. Such extension though could interfere with foot and vehicle traffic. As an alternative, the cracks between the asphalt apron/stone/concrete bay slab should be cleaned and traffic sealant installed to reduce moisture into the surrounding soil. This would reduce rate of deterioration of the adjacent stone, but not completely stop it.

Recommendation:

Clean areas around base of downspouts and install traffic sealant in open joints.

Structure

Walls

The stone of the masonry walls along the west elevation, a portion of the east wall, and the corners of the front elevation are deteriorating from moisture. In places this has resulted in cracked and open mortar joints. This deterioration process is inherent in the nature of the sandstone due to its clay content in the binding matrix. Moisture causes the clay to swell and delaminated bedding planes. Where such stone has direct contact with soil or surface drainage, there is little that can be done to halt this process. Eventually the stone will have to be removed and replaced. At present, there is not enough deterioration to warrant such work. There is relatively little load on the stone and loss of stone at the face could continue until roughly a third to half the face is gone before replacement is needed to insure adequate support within the wall. When replaced, a stone of matching color and texture, but with a higher degree of durability should be selected.

Condition Assessment, Evaluation and Recommendations

As a result of this stone deterioration, associated mortar joints have cracked and lost bond with the stone. These joints should be repaired with a match mortar simply to reduce moisture entry and slow the rate of stone deterioration.

Recommendation:

Monitor degree of deterioration in the stone of the lower courses of the masonry walls and eventually plan on replacing when several inches of facing has been lost. All current cracked and open mortar joints in these lower stone courses should be removed and the joints repointed.

Roof

The deflection in the roof appears minor. The deflection appears to occur in the vicinity of the interior beam line. This beam line may have settled slightly or simply been constructed in this manner. The modest deflection of the upper span is probably due to creep in the rafter over many years of service. The seismic study did indicate the rafters were 50% overstressed.

Recommendation:

Periodical monitoring of the assembly for any new movement or excessive deflection.

Exterior Envelope

Walls

Beyond the stone deterioration at the base of the building, the exterior masonry and wood frame walls appear in good condition with one exception. The open gaps at the interface of the stone/frame/windows need to be closed. This can be accomplished with the use of a closed cell backer-rod and a single part, paintable urethane sealant. A silicone sealant should not be used as it will “bleed” into the stone and cause a non-removable stain.

Condition Assessment, Evaluation and Recommendations

The appearance of deterioration in the southeast corner false outlooker beam should be investigated. This can be accomplished by doing a simple drill test. Drill a hole from the underneath side of the beam and collect the drill shaving in one's hand. The shavings will either be bright and clean from solid wood, or dark colored from deteriorated wood. Also, the drive resistance of the drill can also detect interior deterioration. If severe deterioration is found the beam should be replaced. If the beam is sound, then simply plug the hole with a wooden dowel and repaint.

Recommendation:

Install backer-rod and sealant in joint gaps between windows/wood frame and stone; test outlooker for deterioration.



Figure No. 5-5: Test southeast outlooker for deterioration.

Roof

The practice of screwing down the lower edges of the metal pans is a concern. Most standing seam metal roofs, unlike a corrugated roof, are designed to be anchored by clips and allowed to move thermally with the

Condition Assessment, Evaluation and Recommendations

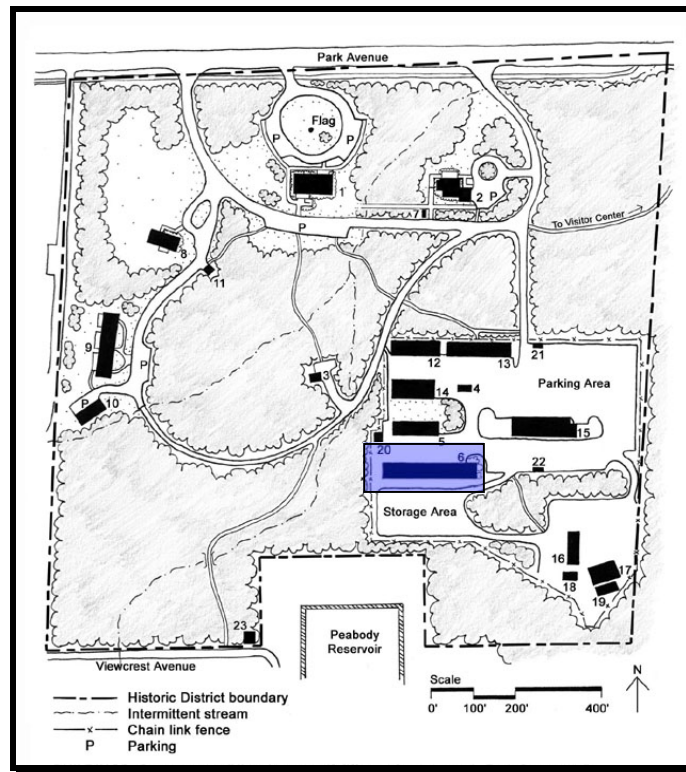
seasons. If the edges of the pans were “bowing up”, then something was not allowing the pans to expand and contract. This lack of movement could come from improper installation or resistance from an underlayment material. In any case, the movement will continue to take place and some form of metal fatigue would be expected to develop, eventually leading to loss of the exterior protective coating or cracking of the metal. When such failure will occur is difficult to predict. The best one can do is periodic monitoring and observation. Eventually when the metal begins to show signs of failure, plans need to be developed for replacement.

Recommendation:

Remove the moss from the main gable roof; monitor the hold down screw at the eave edge of the metal pans for metal fatigue.

Windows/Doors

The windows and doors appear to be well maintained on a periodic schedule.



Equipment & Supply Storage Building: #1000

Introduction:

Of the six original buildings constructed at the Headquarters area, the equipment and supply shed was the first to be designed, as it was considered essential to establishing operations at Headquarters. The drawings were completed in May of 1939. Construction was delayed at first because the title to the land was still in legal review and would not be settled until September 1939, the same month Germany invaded Poland, resulting in World War II. Though the CCC and WPA were still in existence, war funding took priority, and funding for construction at Headquarters limited. Late in the fall of 1939, excavation had begun for the foundations of the Administration Building, the Superintendent's Residence, and the equipment

Condition Assessment, Evaluation and Recommendations

and storage building. By early 1940 the construction effort had focused to other projects, and in an ironic twist of planning, the first building designed for Headquarters was the last to be completed. Though construction initially started in 1941, the loss of the CCC program and the budget constraints of WW II resulted in the building not being fully completed until 1944

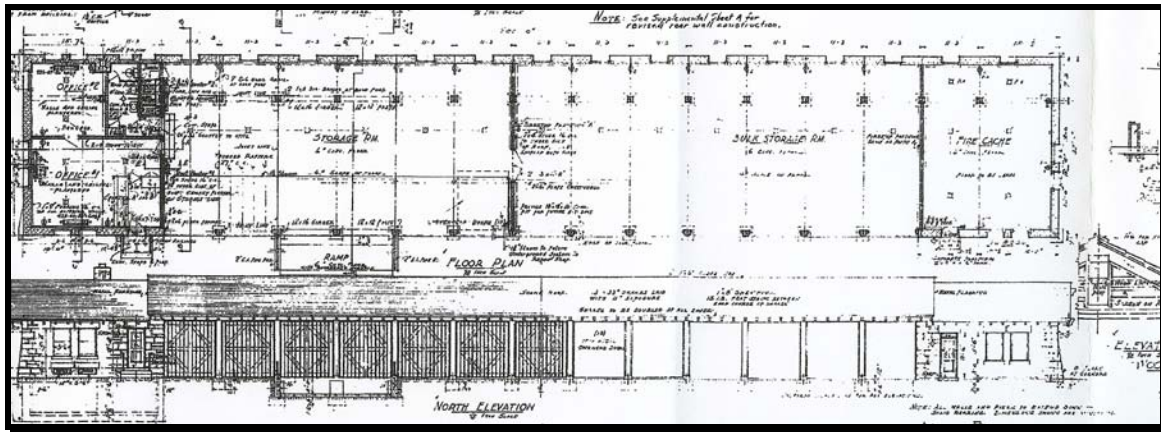


Figure No. 1000-1:Original May, 1939 design for the Equipment & Supply Building.

The original design for the structure was a central series of storage bays. The bays were based on an 11' – 3" module, which had trusses at 27" on center, or a clear distance of 24" between each truss. This design allowed for a 10' bay opening. The bays were formed from wood columns and beams, with a wood framed wall at the rear. The thirteen bays were to be balanced at each end by smaller stone walled administrative extensions. Only the east end had the stonewall construction. The plans were changed and the west end was wood framed. In 1965, the building caught fire and suffered extensive damage. After the fire it was determined the original foundation and slab was salvageable, as were the east end stonewalls. Old column footings were removed and replaced. Paired 3" x 6" wood columns were installed to support built-up trusses at bay. These trusses carried purlins over which the roof deck was applied. The stonewalls of the east end were repaired and new interior partitions created.

Condition Assessment, Evaluation and Recommendations



Figure No. 1000-2: Fire damage of 1965.

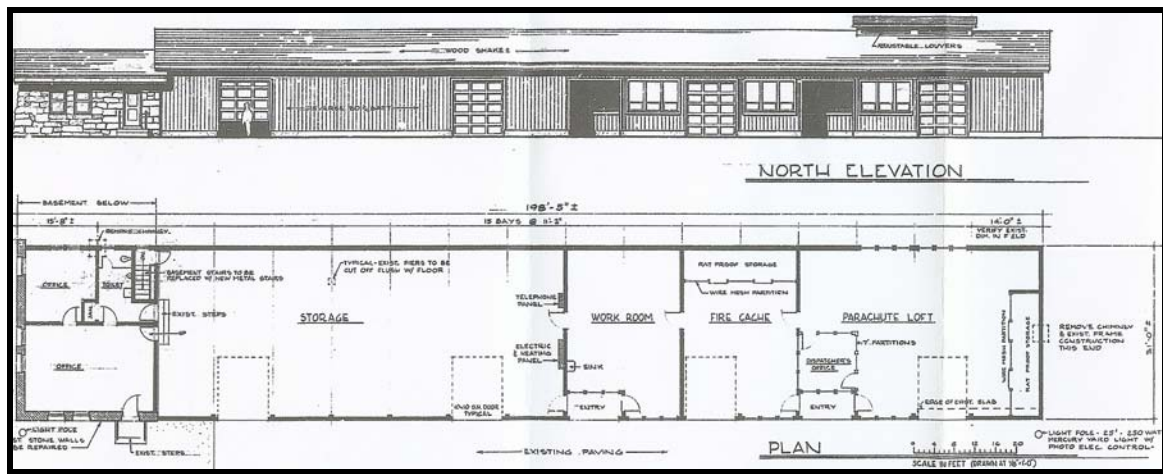


Figure No. 1000-3: The new 1965 design for the rebuilt structure.

The new structure was as large as the original building, including the west extension. In 1984, a new west extension was added. Later, a long narrow south shed roof addition was added (date unknown). Presently, the building contains shipping and receiving, the plumbing shop, carpentry shop, and the maintenance office.

Condition Assessment, Evaluation and Recommendations

Existing Conditions

Site

This 220 foot long and thin rectangular building sits on a bench site cut into the slope of the upper portion of the maintenance area. The front elevation faces onto an asphalt service drive. The side and rear elevations have lawns along the base of the building. The rear elevation, being backed into the hillside, has a modest grade swale for drainage, though compromised by the south shed addition. Since its construction the grade at the rear of the structure also appears to have grown so that the base of the siding is covered with vegetation. The roof drainage daylights into this area for surface runoff. On the front elevation, the downspouts empty onto the asphalt service apron except for the far east corner of the plumbing shop.



Figure No. 1000-4: At the rear of the building, the building had a grade apron to collect water from the above slope; this has been somewhat compromised by the rear shed addition.

Condition Assessment, Evaluation and Recommendations

Structure

Foundation

Much of the original concrete foundation and floor slab was retained in the rebuilding after the 1965 fire. Column footings were enlarged along the rear wall and some new curbing installed along the front elevation. The concrete appears in good condition.

Walls

The major portion of the exterior walls are wood framed with either 2 x 4 or 2 x 6 studding at 16" on center. The sub-sheathing is plywood. Horizontal outrigger framing extends off the studs to create the boxed eaves and carry the built-in gutter. The walls are true and show no indication of distortion or distress.



Figure No. 1000-5: Mortar cracking at southeast corner.

Condition Assessment, Evaluation and Recommendations

The east end wing retains the stone masonry walls of the original building on the north and east elevations. The stone is discolored at the base from moisture with minor face delamination, but otherwise in serviceable condition. There are some cracks and open mortar joints at the southeast corner. The stone still has black and red stains on the main window lintels caused by the 1965 fire.

Roof

The roof structure over the central portion of the building consists of wood framed built-up trusses with double top and bottom chords. These trusses are aligned at the same location as the original at 11'-3" on center. The trusses carry 2x purlins, which in turn are covered with plywood. The roof structure shows no indication of distortion or distress.

Seismic

A 2001 seismic study was conducted on the building. The engineering report that the structure was "...built remarkably well," and while it probably was not designed with seismic forces in mind, the extensive use of plywood "...provides significant lateral strength."¹

Few deficiencies were found, primarily in the lack of foundation anchors in some of the transverse partition walls.

Exterior Envelope

Walls

The exterior walls sheathing is vertical board on batten, similar to what was used on the gable end walls of the 1941 Equipment Shed (Bldg #5). It has been well maintained and is in good condition. The only exception is on the back of the building at the southwest corner of the center section

¹ Seismic Evaluation, Maintenance Facility, Olympic National Park, J. F Sato & Associates, Littleton, Colorado, October 2001, Final Draft, page 38.

Condition Assessment, Evaluation and Recommendations

of the building. Here it appears a portion of a board and batten were removed to install a thru-wall assembly and was closed but never painted.



Figure No. 1000-6: Unpainted siding repair at southwest corner.

Roof

When the building was rebuilt in 1967, the drawings indicate it was to have a wood shake roof with built-in eave gutters. The wood roof has been replaced with a standing seam metal roof, but unlike some of the other buildings of the complex, the built-in gutters were retained. Only the relatively new rear shed addition has an external gutter.

The metal roof appears in good condition, though as with other buildings in the maintenance area, the eave edge of the metal pans has been screwed down to the roof deck.

The built-in gutter of the far west wing appears to be original to its construction in 1984. The gutters on the rest of the building are bright in appearance and, though no information was found to support it, these gutters look like replacements.

All the built-in gutters on the building show signs of leaking. There are nine (9) locations on the rear elevation and one (1) on the front elevation

Condition Assessment, Evaluation and Recommendations

where deterioration is occurring in the fascia and gable ends. In addition, the paint coating of the fascia has numerous “bubbles” of liquid water. Such “bubbles”, some full during the assessment and some broken, are indicative of leaks in the metal gutter, most commonly found at joints in the gutter pans.



Figure No. 1000-7: Paint “bubble” on fascia full of water.



Figure No. 1000-8: Paint “bubble” on fascia that has broken.

Condition Assessment, Evaluation and Recommendations



Figure No. 1000-9: Indications of fascia deterioration can be seen at the corner of the rake and eave.

Besides the issue of the gutters, many of the downspout sections that come through the eave from the gutter to the exterior are deteriorated.



Figure No. 1000-10: Deterioration in the thru-eave downspout section.

Condition Assessment, Evaluation and Recommendations

Windows

The windows are a combination of operable wooden double-hung, fixed sash, hopper, and metal sliders. All appear in good condition with the exception of some aluminum storm windows of the east wing that need repair.

Doors

Over the years, two new man doors have been installed on the front elevation to the receiving office and the plumbing area. The door to the plumbing area is starting to experience surface veneer delamination.

Evaluations

Site

In general, the site drainage around the building is good. The biggest concern is at the rear elevation where the structure backs into the slope. There is little room left for a positive grade away from the walls into a grade swale. This condition should be reviewed to insure that positive drainage could occur.

The other issue is the tendency for grades to grow over the course of many years. This occurs simply from organic build-up and as it happens vegetation begins to hold moisture close or in contact with the wood siding. Eventually, the site requires re-grading to prevent deterioration of the lower ends of the vertical siding, a location that seldom gets painted.

Recommendation:

Review current grade drainage and re-grade if required to provide a positive grade swale around the rear of the building; trim grass and vegetation from the base of the rear wall to expose the lower ends of the vertical siding.

Structure

The structure appears in very good condition. The greatest concern is with damage that is occurring from the leaking built-in gutter. See discussion below under Exterior Envelope/Roof.

At the southeast corner, the open and cracked mortar joints should be repointed using a mortar matching in color and texture.

Recommendation:

Repoint localized areas of stone masonry.

Condition Assessment, Evaluation and Recommendations

Exterior Envelope

Walls

Though minor, the unpainted area of the rear wall should receive a paint coating. At the same time, the assembly should be checked that proper flashing was installed with the installation that was made.

Recommendation:

Check for flashing and repaint.

Roof

The situation with the built-in gutters is the most pressing problem with the structure. It appears the gutters have been screwed in place and have no provision for expansion or contract during thermal cycles.

Built-in gutters should be designed so the gutter “floats” freely and can move with thermal forces through the course of a year. The design requires a series of waterproof slip joints that hold the metal gutter pan. In addition, standard practice is to install a through gutter expansion joint about every 30 feet, making a long gutter into a series of independent sections, each with its own downspout. To allow for the movement, the design must also include some form of slip membrane (often rosin paper) under the gutter. At joints between gutter pan lengths (usually 10 feet) solder cannot be the only means of connection. Solder will not withstand the shear forces of thermal movement and will crack open. At such joints, a combination of rivets and solder must be used.

The gutter condition is serious enough upon visual review that some invasive investigation is warranted. This should be conducted at least at two locations: 1) under a gutter pan joint, and 2) the underside of the gutter outlet into the downspout. The investigation should look at the condition of the underlying outrigger framing and the interior condition

Condition Assessment, Evaluation and Recommendations

of the fascia and soffit. If there is any deterioration in these elements, a repair program for them needs to be implemented.

As for the metal gutters themselves, the options are to try and repair the gutters in-situ, or remove them and install properly designed gutter assemblies. Since a built-in eave gutter is the first installation of a roof, the roof above being built over the top of the gutter flashing extension, removing the gutter requires a lot of disruption to the roof. It can be done, but requires a very experienced sheet metal contractor and designer.

In addition to the gutters, the downspout leader sections that go through the soffit should be replaced where deteriorated and inspected for a watertight joint with the gutter.

Option 1: Do nothing

This only allow the deterioration to continue and if allowed to spread back beyond the bearing point of the truss, then either the roof or ceiling will have to be removed for repair access.

Option 2: Repair and retain the gutter

If the damage is modest, simple “sister” members can be installed, damage repaired, new gutter leaders installed, and the metal gutter cleaned and lined with a fluid applied membrane (such as Decathane by Liquid Plastics Inc).

Option 3: Rebuild eave and install new roof.

If the damage is extensive and corrective action requires work past the wall line, then the roof will need to be removed (the interior ceiling could be removed but this disrupts staff, operations, etc.), the repairs made, and a new metal roof installed, and either abandoning the built-in gutter and providing an exterior gutter off the eave fascia, or fabricating a properly designed built-in gutter.

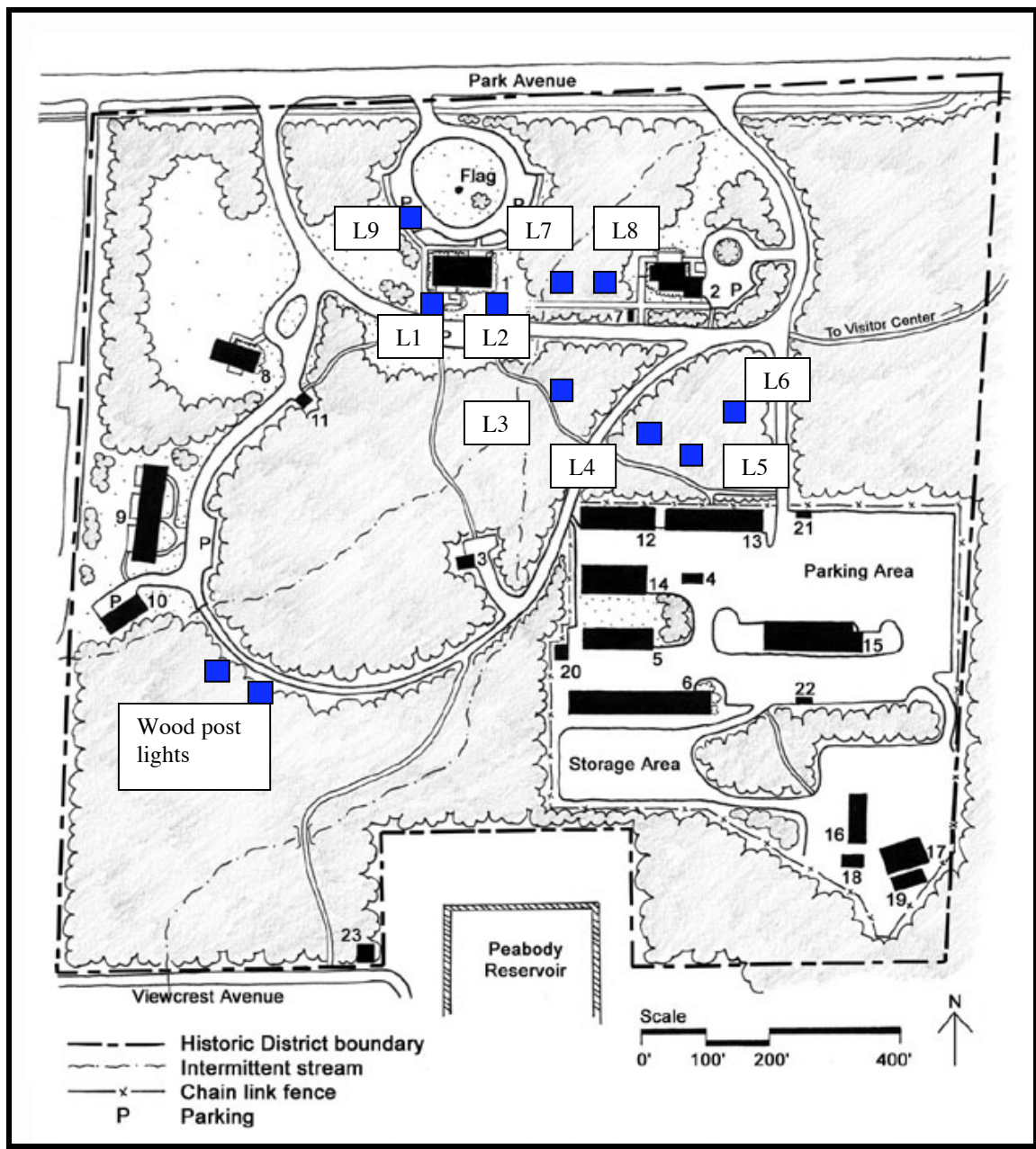
Condition Assessment, Evaluation and Recommendations

Recommendation:

Conduct soffit removal in the area of the downspouts and assess hidden conditions; then choose a course of action depending on extent of damage.

Windows/Doors

Though minor one of the aluminum storm windows in the east office wing should be repaired and where veneer on some of the exterior doors is delaminating, these areas need to be kept painted and sealed. Eventually the doors will need to be replaced.



Stone Pathway Lanterns

Condition Assessment, Evaluation and Recommendations

Introduction:

1940 was a year of great progress in the development of the Headquarters area. The overall general site plan has been formulated, building plans approved and some funds allocated. By June 1940, the Superintendent's Residence, the Administration Building and the Gas & Oil Building were 50% completed. At the same time a large WPA crew was roughing in the landscaping of the site. Many details still needed to be worked out and it was in this period that Landscape Architect Max Walliser developed a plan for extending lighting and power throughout the site. The plan called for a combination of ground level floodlights for walkways and pole-mounted streetlights for roadways. His June 4, 1940 plan shows a series of ground level floodlights along pedestrian walkways from the Julia street entry, through the Administration area, and up to the Utility area. As originally conceived, there would be eleven (11) of these ground level floodlights.

By October 1940, the site lighting design was developed. The pole-mounted roadways lights were deleted, and were substituted with a four (4) foot high wood post within a built-in, side-mount floodlight. There are two wood lights remaining southeast of the BRD building. For the walkways, stone benches were designed with built-in side-mount floor lights. The design drawings indicate that the total walkway lights were still to total 11. Presently there are nine (9) extant on the Headquarter grounds. There is no information whether nine was the total of construction or two have been lost over time. The lights were not activated until 1953 when power finally was run to the lanterns.

The walkway floodlights were constructed matching the dimensions shown on the original drawings.

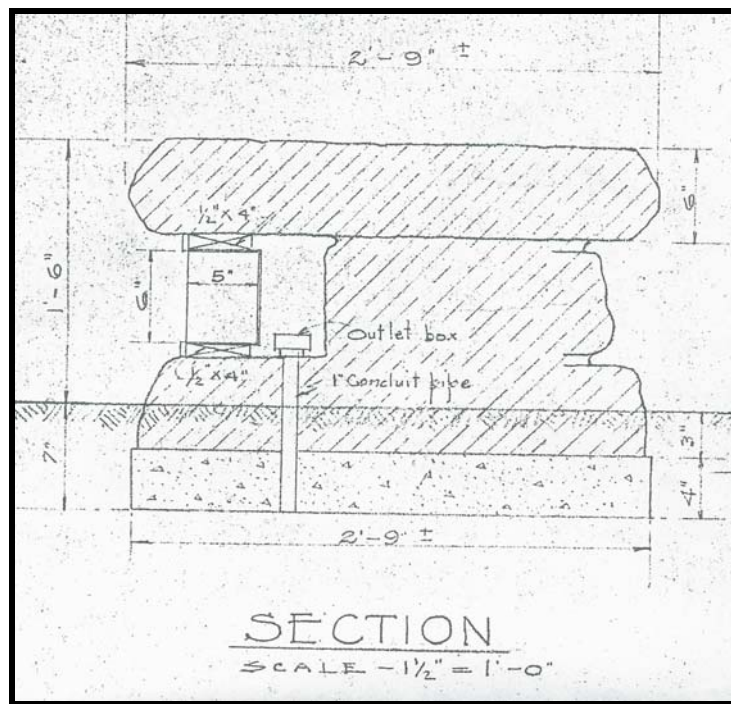
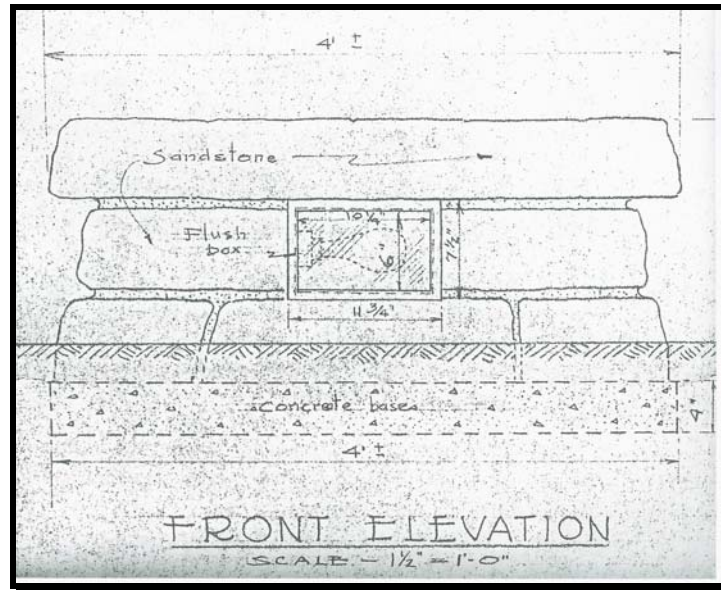


Figure No. SPL-1: October 8, 1940 design drawings for "Floodlights for Walks: Combination Seat.

Condition Assessment, Evaluation and Recommendations

For a discussion of condition assessment, each walkway light is numbered according to the identification numbers on the site map of this section.

The stone used for the lanterns is the same stone on the buildings at the Headquarters District. As discussed under the Administration Building, the stone is sandstone that weathers well in a vertical application like a wall or chimney. When used in a horizontal application like in steps or a plaza, the stone will delaminate along natural bedding planes due to swelling of clay in the binder medium. A number of lanterns have broken or missing stone. Replacement with matching stone could be feasible if the original source was found, but durability would be limited. A longer lasting solution is to use a visually compatible stone that has better weathering properties. The suggested stone is a Washington State quartzite sandstone from the Wilkeson quarry (www.wilkesonsandstone.com).

All the light fixtures are damaged and need repair. A matching replacement light will probably be difficult to find. There are enough original pieces remaining to use as a model for making new fixtures. There are a number of custom light fabricators in the Northwest that could make new lights. The cultural resource office at the Park has retrieved the most intact light for future reproduction purposes.

The general recommendation will be to repair the stone, replace the light fixtures, and re-power the lights. For energy conservation, consideration should be given to have a timed switch for limited activation for evening or dark day use only. In late 2010, L3 and L9 will be retrofitted with LED fixtures and put on timers with new exterior LED pole lights

Lantern No. 1:



Figure No. SPL-2: Lantern No.1

Existing Condition:

Two top stones are spalled. There is missing mortar on the top joint. The lower NE stone is delaminating. The original bronze frame and amber lens are extant.

Recommendation:

Replace broken and delaminating stones; re-mortar open joints; replace light.

Condition Assessment, Evaluation and Recommendations

Lantern No. 2:



Figure No. SPL-3: Lantern No.2

Existing Condition:

Broken and dislodged top stone; oxidized bronze frame; original plastic clear panel but damaged amber lens.

Recommendation:

Replace broken stone and reset; provide new light fixture.

Condition Assessment, Evaluation and Recommendations

Lantern No. 3:



Figure No. SPL-4: Lantern No.3

Existing Condition:

Moss covered stone appears in fair condition; missing lens and clear panel.

Recommendation:

Provide new light fixture.

Lantern No. 4:



Figure No. SPL-5: Lantern No.4

Existing Condition:

Stone appears in good condition; missing frame, lens and clear panel.

Recommendation:

Provide new light fixture.

Condition Assessment, Evaluation and Recommendations

Lantern No. 5:



Figure No. SPL-6: Lantern No.5

Existing Condition:

Heavily oxidized frame; no cover plate, clear panel or lens.

Recommendation:

Provide complete new fixture.

Lantern No. 6:



Figure No. SPL-7: Lantern No.6

Existing Condition:

Stone moss covered but appears in good condition; oxidized light box; missing frame, lens and clear panel.

Recommendation:

Provide new complete new light fixture.

Lantern No. 7:



Figure No. SPL-8: Lantern No.7

Existing Condition:

Stone in good condition; oxidized light box; missing frame, lens and clear panel.

Recommendation:

Provide complete new light fixture

Lantern No. 8:



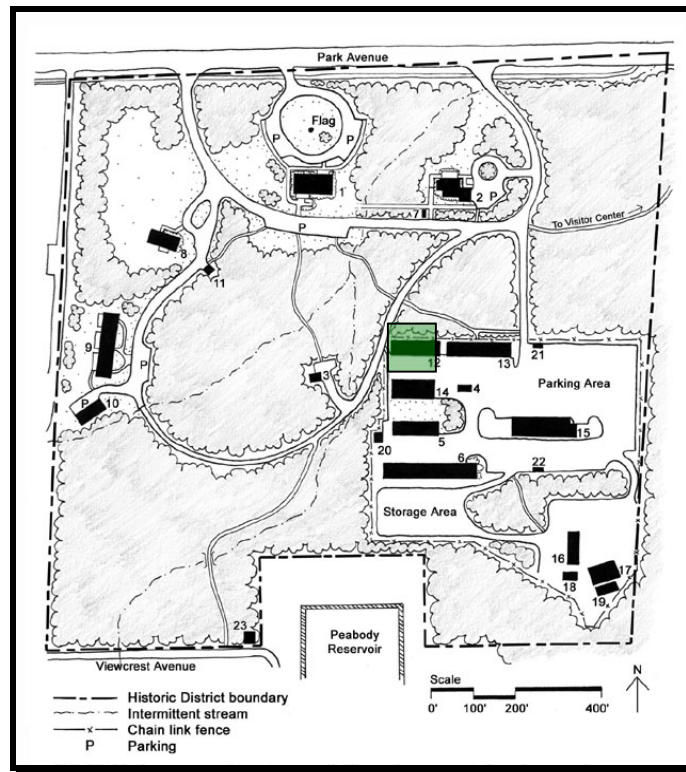
Figure No. SPL-9: Lantern No.8

Existing Condition:

Front top stone beginning to delaminate; broken/missing stone at NE corner; oxidized light box; missing cover, lens, and clear panel.

Recommendation:

Replace delaminating and broken stone; provide complete new light fixture.



Radio Electric Shop: Building #8

Introduction:

As noted in the April 1956 Master Plan Outline, this structure was proposed as an equipment storage shed. It was completed in January 1958 as one of the first buildings funded through the Mission 66 program. Originally constructed as a nine-bay equipment storage facility, it has evolved over the years to become the shop building for the park's electrical and radio communication service and repair program. It is a long rectangular structure with a small shed extension on the north elevation. It is unknown if the shed was original or a later addition.



Figure No. 8-1: View looking northwest, November 2009.

Existing Conditions

Site

The building sits on a level site in the far northwest corner of the utility area. It has hard surface asphalt and concrete door aprons on its south elevation, with natural grade falling off on the north side. Having a long, simple east-west gable roof, the roof drainage is to the south and north, collected by attached eave gutters and day-lighted at grade. A built-in swale in the front asphalt driveway directs water to a nearby storm drain. On the north side, the drainage is directly into the area of second growth forest that separates the administrative and utility areas. The north slope gutter and downspouts are clogged with debris.

Condition Assessment, Evaluation and Recommendations

Structure

Foundation/Walls/Roof

The building has a simple concrete foundation supporting wood framed walls and roof structure. The walls are true and there are no visible significant cracks in the concrete foundation. Roof structure visually shows a slight deflection from ridge to eave, while there is a slight deflection in the ridge at the west end.

Exterior Envelope

Walls

The exterior walls are sheathed with vertical board-on-batten, a common design element of several of the Mission 66 structures within the Park.

Roof

There are two types of roofing used on the building. The primary gable is covered with standing metal roofing. The metal appears in good condition with no obvious discontinuities. There is a modest growth of moss next to the standing seams, especially on the north slope. The eave edges of the metal roofing have been screwed down to the deck.

The small north elevation shed has a cedar shake roof, heavily covered with moss and needle duff.

Windows/Doors

The building has small wood framed windows, solid man doors, and garage door. They are well painted and appear in good condition.



Figure No. 8-2: View north slope of roof; note build-up of moss and duff along standing seams and the deflection of the seams.



Figure No. 8-3: View of moss build-up on roof of rear ell

Condition Assessment, Evaluation and Recommendations

Evaluations

Site

The site appears to have good drainage. The close proximity to the second growth forest on the north side of the building requires a higher frequency of gutter maintenance to insure proper drainage of roof to site.

Recommendation:

Clean the gutters on the north side at least twice a year.

Structure

Foundation/Walls/Roof

The deflection in the roof appears minor. Wood members, like concrete can experience long-term deflection called “creep”, a phenomenon not completely understood. Induced by loading, when the load is removed the member will not return to its original shape. Trying to force a member back will put a negative force on the assembly. It is better to live with minor creep and keep loading light, as one would expect the loading to be in the headquarters areas. Also, lightweight wood trusses are design to have a camber built-in at the time of assembly due to the axial loading of the members. If the camber was not created, then a deflection will often occur.

Recommendation:

Periodical monitoring of the assembly for any new movement or excessive deflection.

Exterior Envelope

North Shed Roof

Condition Assessment, Evaluation and Recommendations

The shake roof of the northern shed portion of the building has appears to have be reaching the point where it needs to be replaced. This roof may be from the original construction as the complete building had a shake roof. Replacing the shake roof with metal has precedence on the rest of the building, and for maintenance purposes a new metal roof would be acceptable.

Recommendation:

Replace the shake roof with a new standing seam metal roof.

Main Gable Roof:

There are two concerns with the standing seam metal roof of the main gable portion of the building. First is the presence of moss growth along the sides of the standing seams. Moss secretions can slightly change the electrostatic condition of moisture, allowing for corrosion to occur on the surface of metal. Most metal roofing today have coating to prevent such corrosion, but the presence of the moss is curious and should probably be removed, first from its modest loading of the structure, and second from its potential for corrosion potential. It should be noted that most proprietary “moss removers” have strict warnings not to be used on metal surfaces, thus they should not be used here. It would appear mechanical removal by brush or broom without disruption of the metal coating would be preferred. If in removing the moss, the coating on the metal is found to be compromised, then it is recommended contacting the manufacturer for the preferred overcoating.

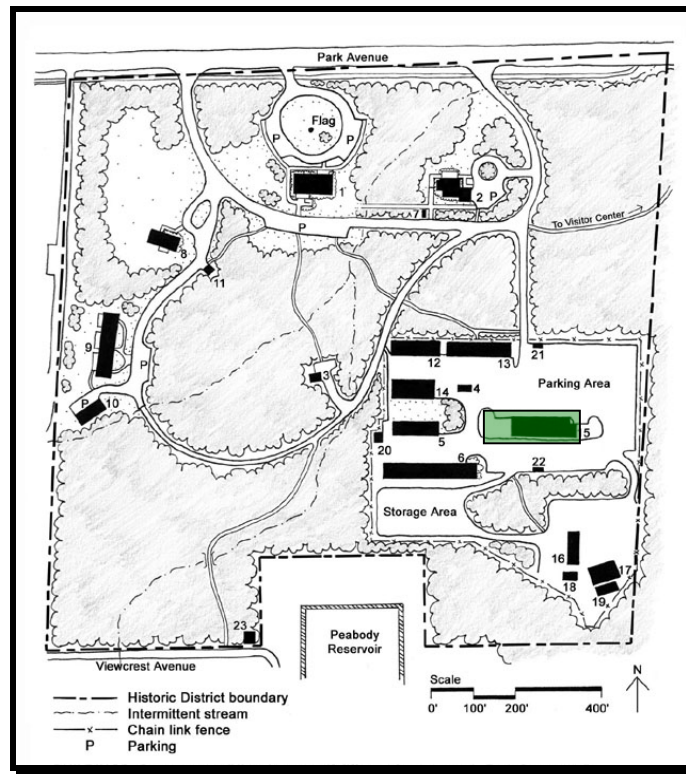
The second concern is the practice of screwing down the lower edges of the metal pans. Most standing seam metal roofs, unlike a corrugated roof, are designed to be anchored by clips and allowed to move thermally with the seasons. If the edges of the pans were “bowing up”, then something was not allowing the pans to expand and contract. This lack of movement could come from improper installation or resistance from an underlayment material. In any case, the movement will continue to take place and some form of metal fatigue would be expected to develop,

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eventually leading to loss of the exterior protective coating or cracking of the metal. When such failure will occur is difficult to predict. The best one can do is periodic monitoring and observation. Eventually when the metal begins to show signs of failure, plans need to be developed for replacement.

Recommendation:

Remove the moss from the main gable roof; monitor the hold down screw at the eave edge of the metal pans for metal fatigue.



Auto Shop: Building #9

Introduction:

Prior to the Mission 66 program of improvements, the servicing of park equipment occurred in the 1930 equipment repair shop at the Elwha Ranger Station. In the remodel of this building in 1935 by the CCC, the building was raised, making for taller equipment bay openings. It was an indication of the growth in size of maintenance equipment.

By the mid 1950's, park maintenance equipment had become far more extensive and larger in size. The Auto shop, originally called the Garage and Repair Shop in the April 1956 Master Plan, was constructed to address this critical problem of creating service areas large enough to accommodate modern equipment. It was specifically built with service bay openings extra wide and twelve feet tall. Ironically, the major criticism of the building

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today is the “small openings and shallow depth” of the service bays. The Park now owns maintenance equipment too large for the structure. The only addition to the building was in the 1980 when a small storage extension was constructed on the east end.

The structure has five uniform maintenance bays on the west end. Presently, the first four are used for service, the eastern fifth bay for storage. On the east end is a larger oversize bay reserved for welding. Large south facing windows provide natural light into the service bays. A small extension on the west end houses an operational office.



Figure No. 9-1: Auto Shop; view looking southwest, November 2009.

The building is a long, rectangular plan with gable roof. It has concrete foundations, stepped at the rear for the increased grade. The walls are simple 2 x 6 frame, covered with vertical board on batten siding. The roof structure has split-ring composite wood trusses supporting a series of purlins. Diagonal 2 x 6 roof decking covers the purlins. Originally, the roof was composed of wood shakes with built-in eave gutters. The eave gutters

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have been abandoned, over-built, and a new standing seam metal roof has replaced the shake roof. One of the more unusual original design details was the concrete bay floor of the first four western bays had radiant hot water floor heating. The system has been abandon, but it is interesting to note that an aspect of modernistic design derived from residential construction was adopted for this garage building.

Existing Conditions

Site

The Auto shop is the dominant structure of the Utility area. It sits just slightly east of the center within the yard. The long rectangular building was built into the natural slope on the south elevation and faces a large level asphalt apron to the north.



Figure No. 9-2: The central downspout on the south elevation is deteriorated at its base; note moisture absorption on concrete foundation.

The simple gable roof slopes to the eaves on the north and south side. Both eaves have a gutter and downspout system. The gutters daylight in the front. On the backside of the building, the west end gutter daylights to grade and the east end gutter transfers to the gutter of the east addition. The middle

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gutter though drains into an underground line. The connection at this drain point is not complete, some moisture is absorbed by the concrete foundation, and it appears the gutter is somewhat clogged with debris. It is assumed this line connects to an underground foundation drain. The original drawings indicated downspouts were to drain into bell end terra cotta tiles that were connected to underground drains on the north side of the building "...that were to terminate as directed by the contracting officer."



Figure No. 9-3: The uphill side of the building captures both the drainage of the parking area and the roof drainage.

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Structure

Foundation

The foundation is a poured-in-place reinforced concrete foundation. It is painted to match the sidewalls and is in good condition with the some minor exceptions. There are both cold joint cracks and shrinkage cracks in the foundation.

Walls/Roof

The walls are 2 x 6 at 16" oc with assumed horizontal wood sheathing. The sheathing is covered with board on batten vertical siding. The roof structure is a series of built-up split ring trusses with 2 –3 x 10 upper chords and 2-3 x 6 lower chords.

The walls and roof show no visual signs or indications of distortion or poor condition.

Exterior Envelope

Walls

The walls are wood framed and covered on the exterior with “board on batten”, where the wider board is applied on top of the smaller battens. The siding is overall in good condition. There is only one location on the rear elevation where there is a damaged section. Cause of the damage appears to be from a vehicle with a long bed backing into the building from the upper parking area. The damage is appears to be confined to just a couple of boards. The damage is not recent as it was painted over the last time the building was painted.



Figure No. 9-4: View of damaged siding

Roof

The roof is a standing seam metal roof that has only one penetration. It replaced the original wood shake roof. It appears to be in good condition. When the metal roof was installed, the original built-in gutters were covered over and exposed aluminum gutters attached to the face of the original built-in gutters. At the same time, repair of the soffit occurred to close the hole of the downspout from the built in gutter.

Windows/Doors

The windows area wood framed and doors solid panel. They appear in good condition.

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Interior:

The industrial interior is a combination of plywood or plaster covered walls with expansive exposed roof trusses. Insulation has been added between the roof purlins.

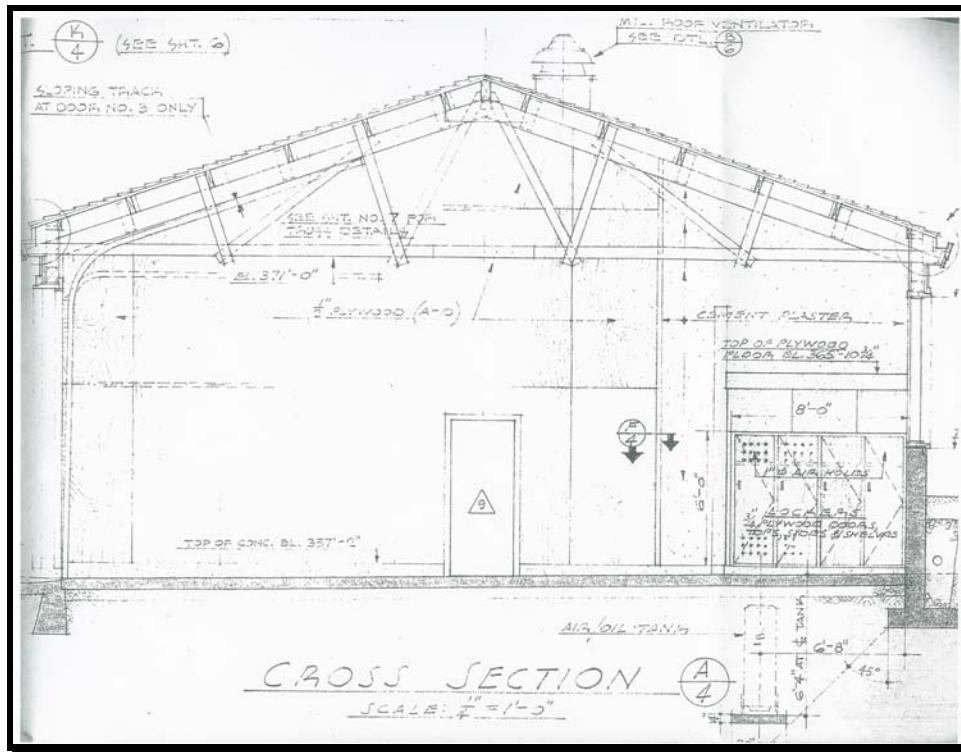


Figure No. 9-5: Cross Section of the Auto Shop from the original drawings; note the concrete retaining wall on the south side with foundation drain, the built-up roof trusses, and the built-in gutters at the eaves.

Evaluations

Site

Roof drainage off the south slope of the building to the up-hill side is of some concern. The maintenance foreman stated there was no problem with any moisture leakage from the south side into the building. Given the moderate amount of rain and snow at the site, the foundation drain must be working. This is remarkable given the age of the system. There must be a very good waterproof concrete foundation coating and an ample size to the system as these are often problematic areas after 50 years of service. Since asphalt now covers the area noted for the termination of these drains, it is assumed there is enough below grade ground water drained to service the building. If there ever is noted buckling of asphalt or seepage of water from cracks in the asphalt, then some additional research should be conducted to see if in fact such conditions are caused from the drainage system.

Recommendation:

The connection with the middle downspout and drain line should be repaired and if moisture is backing up, the drain line flushed open. The gutter needs to be cleaned.

Structure

Foundation

The cracks in the concrete foundations should be addressed to prevent any moisture entry. If left unrepaired, moisture entry can cause corrosion of reinforcing steel, additional cracking, and spalling. Cracks are either dormant or active, and are signs or symptoms of underlying causes. There is no sign presently of the cracks causing concrete deterioration. The small cracks are most likely from shrinkage. Tolerances for cracks left un--repaired vary with environment and function. In a saltwater environment, the American Concrete Institute guidelines recommend that

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the maximum size of a crack left un-repaired should not exceed 0.007", or about the thickness of two new dollar bills.



Figure No. 9-6: View of hairline crack under beneath the window

Cold joints are where two separate “pours” of concrete meet. Often, good practice involves the installation of a “water-stop” at such joints within the body of the structure. If a “water-stop” was not used, then a cold joint can open completely through a wall. Such cold joints also act as expansion-contract joints, so should be considered an “active” joint.



Figure No. 9-7: View of “cold joint”.

Recommendation

The shrinkage cracks should be repaired using a paint-able epoxy grout. Existing paint will have to be removed and the repair repainted after it cures.

The cold joint should be cleaned and enlarged to at least 1/4” in width and closed with a sealant.

In both instances of the cold joint and the shrinkage cracks, the soil at grade should be removed down to the existing applied foundation waterproof coating when repairs are made.

Exterior Envelope

Roof

To date, no details have been located describing exactly the method used to cover over the original built-in gutter. When a built-in gutter is covered over there is always the concern that any leaking will allow the gutter to fill up, allowing for deterioration in a closed space that cannot

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be monitored until damage occurs. Any sign of peeling paint, paint “bubbles, or other indication of moisture accumulation should be investigated.

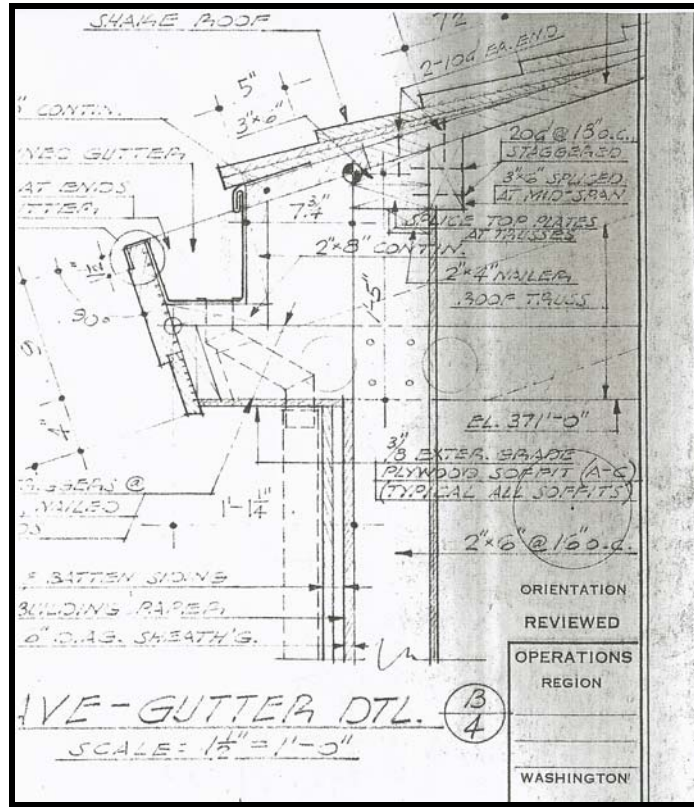


Figure No. 9-8: Original detail of built-in gutter

Recommendation:

Periodic inspection of the fascia and soffit of the eaves should be conducted to insure no moisture is entering the concealed gutter.

Interior

From the interior of the building, one can see small “bubbles” developing in the coating of the insulation. They appear at intervals similar to the location of the standing seams. They suggest concentration of moisture

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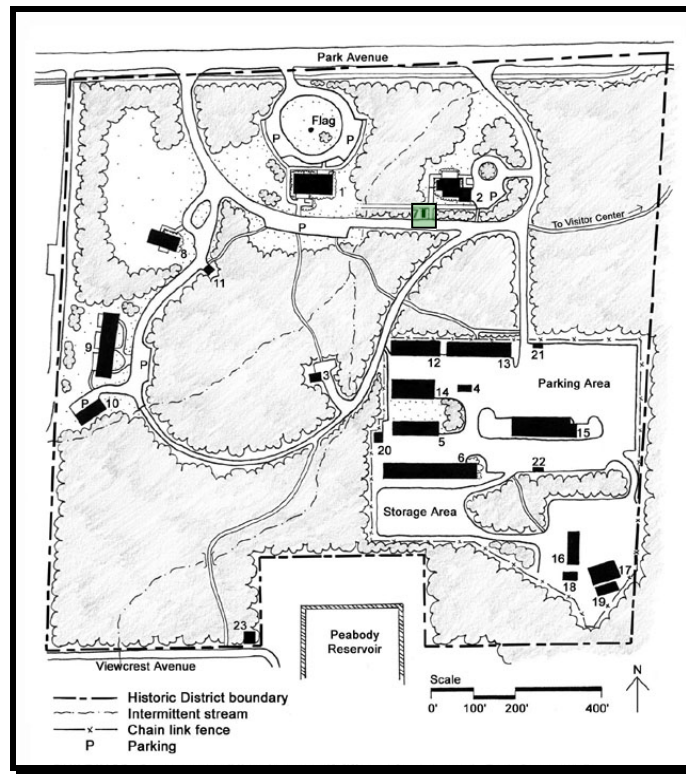
is occurring either from leaks in the metal roof or possible development of condensation within the insulation. In theory, the insulation coating should act as a vapor barrier, and the linear line of the bubbles is suggestive of the standing seams. Since the insulation is on the underside of the wood roof decking, trapping moisture in this location will lead to deterioration of the roof deck. An inspection of the bubbles (just use a pin hole) should be made to verify the presence of moisture. If present, then more in-depth discussions should be conducted with insulation representative and a roofing specialist to develop a course of action.



Figure No. 9-9: View of “bubbles” in insulation.

Recommendation:

Conduct an inspection of the insulation for moisture presence; if present, research options of treatment with roofing specialist.



Superintendent's Woodshed: Building #12

Introduction:

Superintendent Overly constructed this structure in 1952 from salvaged materials. It was originally used for tool and wood storage. Park staff installed a new door on the building and set it on a new foundation in 2008. Presently, Park Rangers use the building as a Law Enforcement evidence locker.

Law Enforcement policy precluded entry into the structure. Only general observations were made from the exterior.

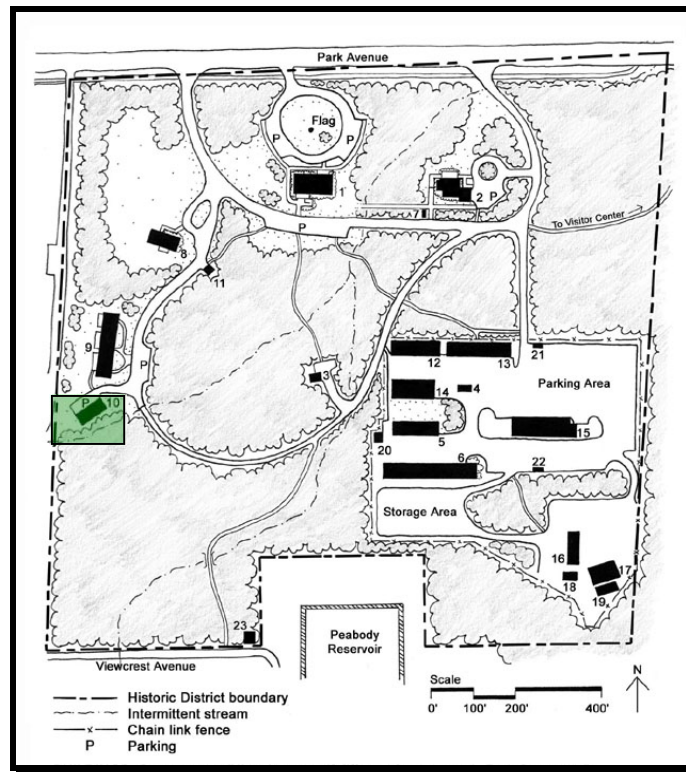


Figure No. 12-1: Superintendent's Woodshed, November 2009.

General Discussion:

The structure is a small, rectangular building with simple shed shake roof and coursed shake siding on the walls. It is a quiet, compatible structure for the setting of the original Superintendent's residence, located to the fireplace side of the house.

In addition to the new foundation and new door completed in 2008, it appears the building received a maintenance painting and replacement of some wall shakes. Based on the exterior appearance of the structure, it appears in good condition.



Garage (BRD Offices): Building #16

Introduction:

This structure was an integral element of the Mission 66 building program. Designed around suburban planning principles, new employee housing projects included the essential element of shelter for the staff person's automobile. The garage was constructed in conjunction with the six-unit apartment building in 1958. Over the years it has been remodeled to offices, then to a bunkhouse, and then back to offices, the function it serves today. During the course of these transformations, the building was never enlarged or significantly altered on the exterior with the exception of an infill wall in four of the six garage bays and a small exterior entry porch on the north elevation.



Figure No. 16-1:BRD Offices (former apartment garage), November 2009.

Existing Conditions

Site

Located at the upper most extension of the original employee housing area, the structure sits on a relatively level site cut into an existing slope at the time of construction. Grade is shallow on the north, south and west elevations, but is nestled against a large earth berm on the east elevation. There is some surface drainage off the berm to the base of the building. The downspout from roof drainage enters terra cotta tiles so it is assumed there is a foundation drainage system.

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Structure

Foundation/Walls/Roof

The foundation appears to be a standard simple concrete stem wall and footing with concrete slabs for the original garage bays. No unusual conditions were noted in the concrete.

The walls are wood framed and support common style Fink trusses. In the two remaining south end bays (the ones still retaining the original garage doors and used for storage), broken ends of truss struts are protruding through the ceiling. According to a staff member of the building, a tree fell on the roof several years ago, causing damage to the roof. The damage was inspected and the staff was advised “not to worry about it”.



Figure No. 16-2: Southeast corner of the roof showing damage caused by tree fall.

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Exterior Envelope

Walls

The exterior walls are 1 x 3 battens over 1 x 8 boards. The wall framing has 2 x 4 horizontal nailers at 2 ' oc. No damage or deterioration was observed in the walls.

Roof

According to the original documents, the roof was originally wood shakes. The shakes have been replaced (time unknown) with a standing seam metal roof. The roof was framed to include a built-in gutter along the eaves. The gutter was metal lined and flowed to three downspouts, one at end and one in the center of the gutter. Most of the downspouts are very deteriorated at the point of where they go through the eave soffit.



Figure No. 16-3: Deterioration of downspouts on west elevation

When there is deterioration of the downspout leader that goes through a soffit from a built-in gutter, it often indicates deterioration has spread within the framing of the eave. The type of decay found is rotting of the rafter tails, associated blocking, and the cradle supports for the metal gutter.



Figure No. 16-4: Southwest corner of roof eave showing current deterioration.

Windows/Doors

The windows are double-paned metal slider assemblies, presumed installed during one of the several remodels. They appear in good condition.

Evaluations

Site

The site drainage does not appear to be holding excessive moisture at the base of the building. The daylight location of the apparent foundation drainage system is not known. There is an accumulation of moss at the base of some downspouts but this appears to be more associated with deterioration in the downspouts than with blockage of the drain system.

Recommendation:

Monitor the base of downspouts during rain periods to observe whether the foundation drainage system is accepting roof runoff and not backing up; clear the system if backup is observed.

Structure

Foundation/Walls/Roof

While there is no visible leakage in the ceiling under the roof area crushed by the falling tree, it is difficult to believe it has not created damage to the water tightness of gutter and deterioration in the framing below.

Recommendation:

Conduct soffit removal in the area gutter damage and assess hidden conditions; if modest, remove selected sections of roofing, conduct truss repair, and install new roof. See discussion of gutters below for options for the gutters.



Figure No. 16-5: Southeast corner of roof eave showing current damage.

Exterior Envelope

Roof

To fully determine the extent of damage, the soffit should be removed and all the framing beneath the gutter inspected. Depending on the extent of damage, there are several options.

Option 1: Do nothing

This only allows the deterioration to continue and if allowed to spread back beyond the bearing point of the truss, then either the roof or ceiling will have to be removed for repair access.

Option 2: Repair and retain the gutter

If the damage is modest, simple “sister” members can be installed, damage repaired, new gutter leaders installed, and the metal gutter cleaned and lined with a fluid applied membrane (such as Decathane by Liquid Plastics Inc).

Option 3: Rebuild eave and install new roof.

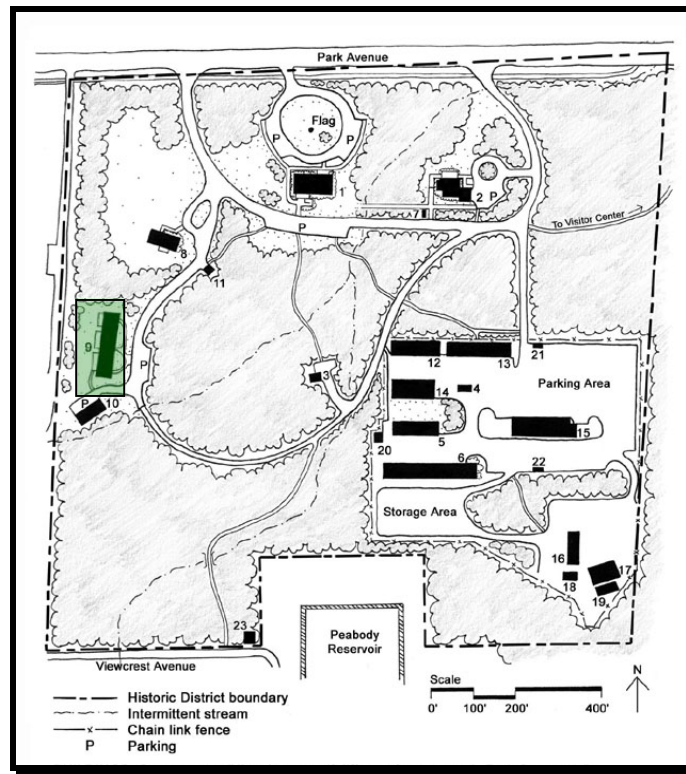
If the damage is extensive and corrective action requires work past the wall line, then the roof will need to be removed (the interior ceiling could be removed but this disrupts staff, operations, etc.),

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the repairs made, and a new metal roof installed, abandoning the built-in gutter and providing an exterior gutter off the eave fascia.

Recommendation:

Conduct soffit removal in the area of the downspouts and assess hidden conditions; then choose a course of action depending on extent of damage.



Apartments: Building #17

Introduction:

A major emphasis within the Mission 66 program of the late 1950's and early 1960's was employee housing. Using standard elements for residential design of the period, the small apartments have areas of floor-to-ceiling glass, an open floor plan, and small rear patios. Constructed in 1958, the apartments step down along the sloping sight to reduce mass and compliment it's setting.



Figure No. 17-1:6-Unit Apartment Building, November 2009.

Existing Conditions

Site

Though on a sloping site, the original construction drawings show a perimeter underground drainage system to serve the downspouts of the front roof slope. At the rear of the building the downspouts empty into troughs cut in the sidewalk that daylight into the yard. These troughs are plugged at the yard line in several cases.



Figure No. 17-2: Drain troughs for rear elevation downspouts.

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The sidewalks are in fair condition. The patio slabs at the rear are cracked from ground settlement. Apartment #3 has an overlaid slab on the original sidewalk, presumably for ABA accessibility.

The construction drawings indicate a 1000-gallon underground fuel tank at the south elevation of the building. There are no park records on whether this tank has been removed.

Structure

Foundation/Walls/Roof

The building has concrete foundations and concrete slabs on grade. Walls are 2 x 4 with sub-sheathing and sheetrock. There are two firewalls shown on the original drawings that reach to the roof. The roof is assembled with standard wood trusses and shows no sign of excessive deflection or distress.

Exterior Envelope

Walls/Roof

The exterior walls are batten on board. There is only one minor batten split on the north elevation.

The current roof is a standing seam metal that replaced the original shake roof. Originally, the roof had built-in gutters at the eaves, but these have been overlaid with the new metal roof and exterior gutters installed. With one exception, it appears the present downspouts are in the same location as the ones for the built-in gutters. There is some minor damage to the current downspouts and gutters, both of which are filled with duff and debris.



Figure No. 17-3: Existing gutter damage

Windows/Doors

The windows are double-pane aluminum and all appear in fair condition.

The doors are solid core, plywood veneer with a paint finish. Where protected under the eaves they are in good condition, but where exposed to weather and sun on the rear elevation, some are beginning to delaminate.



Figure No. 17-4: Delamination on exterior doors

Evaluations

Site

Along the rear of the building, the sidewalk troughs that serve the downspouts need to be periodically cleaned and checked for proper drainage.

Recommendation:

Clean and service downspout troughs

Structure

Foundation/Walls/Roof

These features appear to be in good condition and well maintained.

Exterior Envelope

Walls/Roof

It is important to periodically survey the eave of buildings that have had built-in gutters covered. The slightest failure in the roof can lead to filling the concealed gutters and leading to eave and roof frame deterioration.

The present exterior gutters have some minor damage that should be repaired and the gutters and downspouts clean periodically.

Recommendation:

Clean the gutters and downspouts; check eaves for any signs of moisture penetration into the covered, and now abandon, built-in gutters.

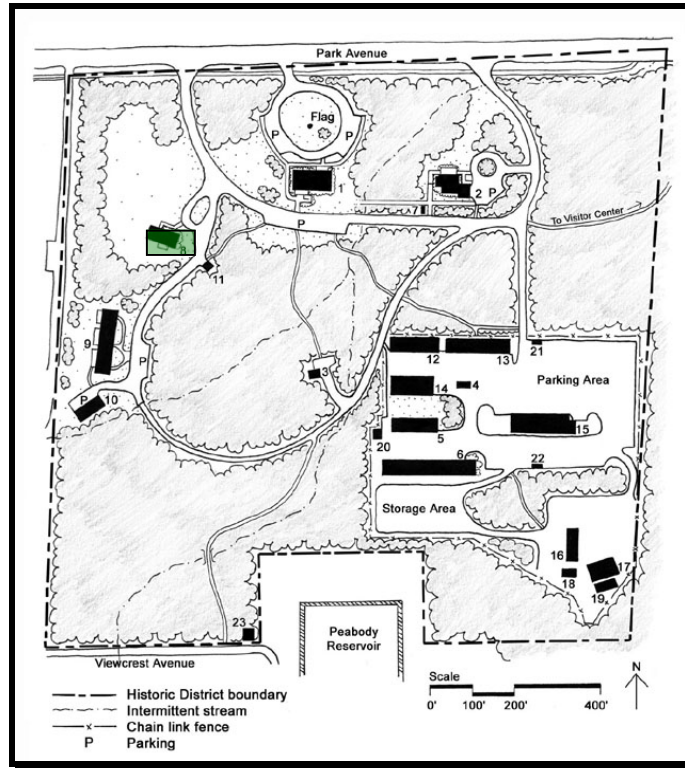
Windows/Doors

It is very difficult to arrest veneer delamination on a door once it has begun. Maintenance painting will usually only last one season, as it will crack. Veneer can be repaired but is not justified for such plain doors. In the short term, painting the sill of the door will reduce moisture entry and the doors can be kept in service for a few more years. Eventually, new doors will be needed.

Recommendation:

In the short term, repaint the doors seasonally, and make sure the sill of the door is sealed. In the long term, plan on replacing the doors.

Assistant Superintendent's Residence:
(I.C.E. House)
Building #20



Introduction:

One of the most critical goals of the Mission 66 program was improvement of employee housing for park staff. With 1000 new houses planned and restricted budgets for the program, park architects developed a set of “standard plan.” These plan were developed in part based on a survey of employee wives as to their desire in housing and with the outlook that the designs would be similar to the many modern houses being constructed by post-war development across the country. Thus, a popular style was the suburban ranch house.

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The “Standard Plans for Employee Housing” were issued in early 1957 for the summer construction season. There were five variations of a three-bedroom ranch house. Minor adjustment of the plans based on siting and local materials were allowed. The plans were a simple rectangular with an open living-dining area, recessed entry, rear facing kitchen, and attached single car garage. The assistant superintendent’s house has an added fireplace in the living room. The present building uses the bedrooms and living room for offices, with additional walls added for enclosure of the living room. The garage has been enclosed and is used as an evidence room for law enforcement, and was not available for inspection.

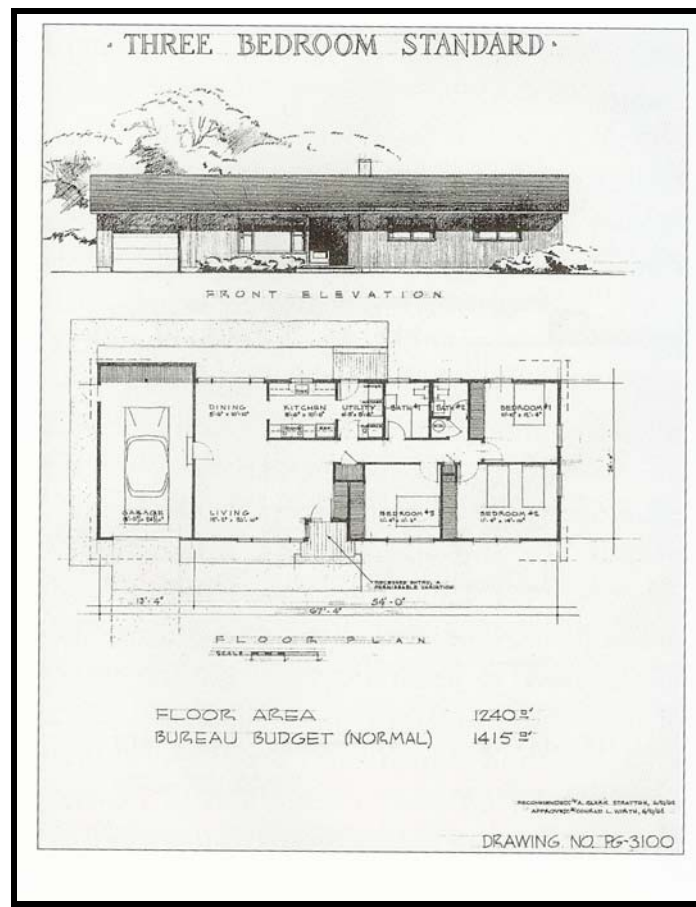


Figure No. 20-1: Single family standard plan



Figure No. 20-2: Original Assistant Superintendent's house; now used to house law enforcement investigations, communications, and enforcement, i.e. "Ice House".

Existing Conditions

Site

The building sits on an open level setting on the uphill slope of the west side of the headquarters residential, just north of the 6-unit apartments. The building is has planting close of the foundation on the front (north) and east sides, but is open on the other elevations.

Though the original plans do not show any foundation drainage system, the existing downspouts do go into underground lines. Daylight location is unknown. The level site, especially at the rear of the house appears to have a shallow drainage pattern as the stone of the open patio are moss covered and have cracked mortar joints from ground swelling. The stone appears to be a combination of sandstone and andasite.

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Structure

Foundation/Walls/Roof

The foundation is concrete and looks to be in good condition. It is a double stepped foundation, narrowing to only 4" beneath of exterior walls. This step was inserted to allow for cast-in-place mechanical ducts to be placed in the floor slab and vent at the base of the walls.

The walls are wood framed with sub-sheathing. They appear square and with any distress.

The roof was constructed of built-up wood trusses with glued plywood gussets. There is no sign of excessive deflection or distortion.

Exterior Envelope

Walls

The exterior walls are composed of vertical board on batten over sub-sheathing. The walls show no indication of distress and are well maintained.

Chimney

The chimney above the roofline is brick around a clay liner. The mortar of the brick is showing signs of deterioration from moisture. At the base of the chimney, some of the counter flashing is bent up, suggesting the building has been re-roofed.

Roof

The roof is a simple gable with cedar shakes. It appears to be in fair condition. It drains at the eaves into exterior attached metal gutters. The original drawings indicate that built-in gutters were initially constructed but have been over-built and abandon.

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Windows

Perhaps the buildings most interesting feature from a detail point is the classic offset wood slider windows in the original portion of the house. These windows, when closed, present a flush exterior surface to the weather. Upon opening, the active leaf offsets to the interior within grooves in the windowsill. The windows have storm windows. Some of the storm windows have minor glazing deterioration. The historic wood windows are in fair condition. Some attempts have been made to do minor repairs with strap metal, but overall have survived well. When the garage was enclosed, metal-framed windows were installed.



Figure No. 20-3: Offset horizontal slider windows; note groove in the windowsill.

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Interior

Wood finishes

The interior of the building still contains most of the original natural “V” groove vertical fire wood wall and natural finished plywood cabinetry. Even the added wall to close off the living room matches the original. These features should be retained as part of the buildings significant elements.



Figure No. 20-4: Original natural wood finishes.

Cast-in-place Duct Work

The original heating system had ductwork cast into the floor slab. This system has been abandoned for electrical baseboard heating, but the ductwork is still in place.

Evaluations

Site

A critical aspect of site maintenance is keeping the gutters and drainage system operational. The excessive dampness at the northeast corner of the building suggests some moisture is backing up in the underground drainage system at the point of where the downspout enters at this corner.

Recommendation:

The gutters need to be kept clean and monitored to be sure drainage is occurring through the underground system. If overflow is noted, the drainage may need to be hydro-jetted.

Structure

Foundation/Walls/Roof

There is no appearance of maintenance problems with the building's structure.

Exterior Envelope

Chimney

The mortar joints of the brick chimney above the roofline will need to be repointed in the near future just to provide protection against continuing deterioration within the assembly. In addition, the cap flashing around the base of the chimney should be carefully dressed down and properly lapped for moisture protection. During the next re-roofing program, the flashing should be removed and re-installed to insure that the base flashing for the shakes (if used) are properly interlaced with each shake course.

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Recommendation:

Repoint chimney at next maintenance cycle and repair cap flashing.

Roof

While the shake roof appears to still have some service life, the fact that it is laps over a built-in gutter require extra vigilance in monitoring for any leakage into the old gutter system.

Recommendation:

Monitor the condition of the fascia and soffit of the eaves on a yearly basis.

Windows

The windows, though in fairly good condition, need periodic painting. During the painting, the glazing of the storm windows should be replaced. For those windows where surface metal has been used for minor repair, the window frame should be removed prior to painting and properly repaired.

Recommendation.

Conduct maintenance painting of the windows and repair prior to repainting.

Interior

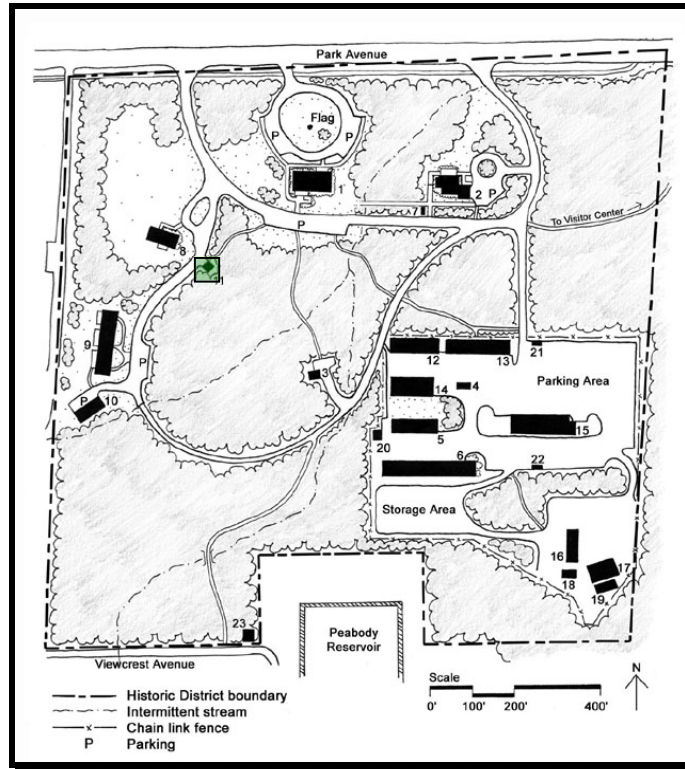
Cast-in-Place Duct Work

Upon lifting a register, the ducts are very dirty and filled with material. These are good conditions for mold growth, especially if ductwork joints

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are subject to any moisture from the floor slab. Consideration should be given to cleaning the ductwork system.

Garden Shed: Building #1240



Introduction:

Since the Mission 66 era, this small utility structure is the only new construction at Headquarters outside the utility area. It was built in 1968. The original structure was a simple rectangular enclosure with a shingled gable roof. At an unknown date, an overbuilt roof was construction on the south side of the original structure to shelter an equipment bay. The new roof enclosed the gable on the front of the structure, and was supported by a solid back and sidewall. The floor of the new bay is concrete. Both the new overbuilt roof and the original north roof slope were covered with a metal roof system.



Figure No. 1240-1 View looking at the west elevation, November 2009.



Figure No. 1240-2 View of short "pony wall" located above the sidewall of the original wall below; the original shingle roof is still visible, November 2009.

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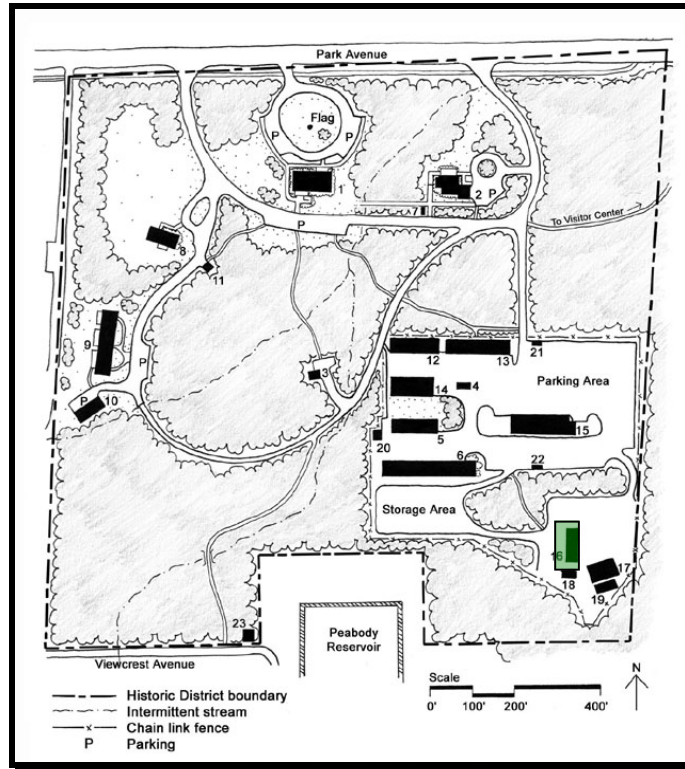
Existing Conditions

Based on an exterior assessment, the structure is in good condition for use as a storage building. The frame appears square and plumb. The exterior siding is sound and, at least beneath the open equipment bay, there does not appear to be any roof leakage.

Evaluation

This quiet, small service structure serves the landscape maintenance needs of the residential area. It requires little maintenance other than periodic painting and monitoring any damage from tree limbs to the metal roof.

Tin Shed: Building #1292



Introduction:

In April of 1956, Park Landscape Architect Max Walliser completed an updated master development plan for the Headquarters area. This would be the first plan included in the Mission 66 Edition, completed in March 1961. Within the 1956 development plan, one of the proposed new buildings in the Utility area was a 24' x 60' Army surplus steel frame structure in which to store lumber. During the lean funding years of the early 1950's, Superintendent Overly had little for building construction. One response was to seek surplus World War II structures for reuse. He obtained this structure from Fort Worden and the development outline of the master plan notes the dismantled structure was already on hand in the park in April 1956. In his Superintendent's Report for April, Overly included a picture of the

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building as it was being re-erected. The caption to the photograph as “Building No 13, Headquarters Area, Master Plan Drawing NP-OLY-2099-E, completed by park crews, April 1956.” In the Master Plan development outline the building is noted as No. 14. Currently, it is numbered 1292.



Figure No. 1292-1 This photograph is from the Superintendent's report of April 1956.



Figure No. 1292-2: View of northwest corner, November 2009.

Existing Conditions

Site:

The building is located in the southeast corner of the Utility Yard on the second bench from the main level of the yard. The site is relatively level with just a slight slope to the east. Untended landscaping of natural origin surrounds the building.

Structure

The structure was designed as a pre-fabricated steel construction. Members were fabricated to be assembled with a series of either riveted or bolted connections. The design was based on modular units so a structure could vary in size dependent on the function and use.

The structure is single story with a gabled roof. Double door entries were located on each end. There were no side windows. The structure has been modified by installing sliding track doors along the east elevation. It is not known whether this was done upon its re-assembly in 1956 or later. At present, the building is used for storage of a variety of materials both within the building and in exterior racks along the west elevation.

The foundation consists of individual concrete piers that support the primary "I" beam columns. Angle iron pieces appear riveted on the columns at vertical intervals for horizontal cross members and steel rod "X" bracing. The walls are a single layer of corrugated galvanized iron sheeting bolted to the frame. The roof is formed with lightweight iron trusses, upon which is laid corrugated sheeting. Horizontal "X" bracing is present between bases of the trusses. Roof purlins are channel sections over the trusses.

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The gables ends have wood double doors with four lite glazing. There has been at least one attempt in the past to paint the east, north, and west wall a gray.



Figure No. 1292-3: View of southeast corner, November, 2009, showing the “I” beam column with original angle brackets



Figure No. 1292-4: View of northwest corner, November 2009, showing a channel purlin.



Figure No. 1292-5: View of original north gable entry doors, November 2009.

Evaluation

As a utilitarian storage structure, the building serves a purpose for essentially keeping material dry. To that end, it works. As for the condition of the structure, it is showing signs of age.



Figure No. 1292-6: Note on steel column recognizes the lateral movement of the frame.

The alteration of the east elevation to add a series of sliding access doors has compromised the bracing of the southeast corner column. The last bay door should be removed and a set of “X” braces and wall re-installed to stiffen this corner.

Where exposed to the elements, the originally painted metal frame members are showing surface rust from light to heavy. Where such expose occurs, the members need to be cleaned and painted. The heavily peeling paint is most certainly lead based, and proper precautions should be taken when working in the building or when conducting any repaint program.

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The galvanized roof sheeting is quite rusty, meaning the protective layer of zinc has been lost. If the roof is not leaking, then there are a few more years before a new roof will be needed; eventually, if the building is to continue to function as weatherproof storage, a new metal roof will be required in the next decade.

Appendices

Appendices

Appendix No. 1:

Administration Building Electrical Review

Appendix No. 2:

Wilkeson Sandstone