

Oregon Caves

Historic Structures Report



PREFACE

This Historic Structure Report was completed as partial fulfillment of the requirements for the Master of Science in Historic Preservation at the University of Oregon. It represents an individual effort by the author as a student project. It is hoped that this report will serve the National Park Service and concessionaire at the Oregon Caves National Monument as a reference guide for the treatment of the historic Chateau, a National Historic Landmark, and other similar buildings on the Monument.

Certain issues were not covered in the report, as they were beyond the scope of responsibility. Seismic, life safety, and ADA accessibility concerns are not addressed in the report, as they require the assistance of a professional in those fields. Structural system observations are made, but a professional must be consulted in this area. Cost estimates for the work are also not provided, as they are dependent on performance of the work and where materials and supplies are obtained. Two other issues, lead paint and weatherization, are also not specifically covered but deserve attention. Lead paint may be encountered when the exterior paint work is done on the valleys and painted wood elements such as the windows. The paint should be tested before work begins, and appropriate containment measures taken to reduce the threat to both workers and the surrounding environment. The Chateau has not seen the installation of storm windows and insulation in its exterior walls. These elements, especially the storm windows, constitute a threat to the historic character and materials of the Chateau. These items should not be installed in order to preserve the character and fabric of the building. This will result in additional heating costs, but will better pre serve the Chateau.

The concessionaire is referred to in this report as the Oregon Caves Company (OCC). The original company was named the Oregon Caves Resort, and the name was changed to the OCC in 1953. The holdings of the Oregon Caves Company were transferred to the Canteen Company of Oregon in 1977, which was renamed the Estey Corporation in 1988. For ease of reference, Oregon Caves Company refers to all of the above mentioned corporations, as the concessions have had some continuity of management since the original organization of the Oregon Caves Resort in 1923.

The floor numbering system is taken from the 1989 Historic American Buildings Survey drawings of the Chateau. These drawings are included in [Appendix A](#). The individual room numbers used in the report are the numbers posted on the entrances to the rooms, and are marked on these drawings as well. References to the cardinal directions are problematic in this building, as it is a modified "U" shape. Throughout this report, the directions used refer to the wall or direction that is closest in orientation to the cardinal direction described. For example, the wall of the structure that lies next to lies next to the road on the northern side of the building is called the north wall, even though it does not face directly north.

It should also be mentioned that all work recommended in this report should adhere to the Secretary of the Interior's Standards for Preservation. These standards are included as [Appendix B](#). The Secretary's Standards for Restoration are also included in this appendix.

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PART I

Site and Building History

Developmental History — Pre-Oregon Caves Company

The Oregon Caves have served as a popular attraction in southern Oregon since the 1870s. The first recorded cave entry was in 1874, when Elijah Davidson discovered the caves on a hunting trip. There are differing accounts of the discovery, but mostly in the finer details of the discovery. In the fall of 1874, Davidson had just killed a deer when his dog Bruno picked up a scent. Davidson instructed Bruno to follow the scent, and the dog raced up the hill and disappeared into a dark hole in the side of the mountain. Davidson heard the sounds of a fight within the cave, and in order to save his dog he entered the cave. He used matches to light his way initially, but soon ran out of light. He followed the stream out of the cave, and shortly thereafter his dog emerged from the cave.

Davidson returned to the cave with the deer carcass and hung it outside the cave entrance. This lured a bear from the cave, and when Davidson returned a short while later the bear had eaten the deer and was sleeping nearby, where Davidson shot it. The killing of the bear, especially the timing, is the main discrepancy between different accounts of the story. The location of the bear when shot is also disputed.

After killing the bear, Davidson and members of his hunting party returned to explore the cave, using pine torches and matches. Davidson returned to the cave over the next few years many times, bringing small groups of family and friends with him. In early trips, stalactites were broken off to mark the route out of the cave. By 1877, exploration parties were using rope or lengths of string to mark the trail out of the cave. [1] 1877 also marked the discovery of the 110' exit. [2]

By 1880, news of the cave had spread throughout the Illinois valley. In that year two brothers, Homer and Ernest Harkness, took a squatter's claim at the main entrance to the caves. Exploration of the cave continued, and development around the mouth of the cave began. The caves were publicized in the *Grants Pass Courier* by Homer Harkness and Walter Burch in 1885, advertising that there was camping, good pasture, and "medicinal" waters at the cave. Harkness and Burch, from Leland, filed a mineral claim on the 160 acres surrounding the cave on May 19, 1885. Their intent was to construct a "trail or waggon [sic] road to said caves in the near future." [3] They were unable to acquire the land, however, because the land was unsurveyed. Burch later sued the Oregon Caves Company over the claim, insisting that his claim was valid under the Timber and Stone Act of 1878 (20 Stat. 89). However, a state judge dismissed the suit in 1925 in Josephine County Circuit Court because



Main entrance to the Oregon Caves.

the Act of 1878 required that the land be surveyed.

Local entrepreneurs continued to develop the cave by removing formations that blocked passages. Work continued on developing trails to the cave, drawing more visitors. Advertising by W.G. Steel in his book The Mountains of Oregon and an expedition organized by the San Francisco *Examiner*, in 1889 and 1891, respectively, broadened interest in the cave. The *Examiner* expedition aroused interest in developing the cave as a resort, and the first proposal for a hotel at the site was made by A.J. Smith of San Diego in 1891. Acting as superintendent for the Oregon Caves Improvement Company, he proposed a 500 room hotel at the site, electric lighting for the cave, and a streetcar line from Grants Pass to the cave site. [4] These early proposals, however, amounted to little permanent development at the cave due to financial difficulties. Vandalism continued within the cave itself, as visitors broke off formations for souvenirs.

Mineral claims were halted not only by the lack of a survey in the area, but also by presidential intervention. President Roosevelt withdrew 10 million acres of forest land from settlement and claims in 1903, a result of land fraud trials in Oregon involving government timber. The Civil Sundry Act of 1891 allowed the President to set aside timber land from the unallocated public domain as forest reserves. The Southern Oregon Forest Reserve was established in 1903, withdrawing the cave area from settlement. This Forest Reserve was transferred to the Department of Agriculture from the General Land Office on February 1 1905, due to the difficulties the Department of the Interior had during the period of the land fraud investigations. The U.S. Forest Service was established under the Department of Agriculture on July 1 of that same year, with Gifford Pinchot as Chief Forester.

The USDA Forest Service then held control of the Oregon Caves area as a part of the Southern Oregon Forest Reserve. Mineral and settlement claims were forbidden by Roosevelt's withdrawal of the land. In 1906, the Siskiyou National Forest was established within the boundaries of the earlier Southern Oregon Forest Reserve. This allowed mineral entry and settlement under the Forest Service guidelines, but only under certain conditions. By this point, the cave area had experienced limited development and construction, including a small cabin built by the *Examiner* group, a camping area near the cave entrance, and blasting and obstruction removal within the cave itself, mostly by Burch and Harkness.

1906 saw the passage of a bill in the U.S. Congress that was critical in shaping the history of the caves. On June 8, 1906, Congress passed An Act for Preservation of American Antiquities, more commonly known as the Antiquities Act. This act allowed for the President to set aside as National Monuments "historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon lands owned or controlled by the Government of the United States." This act became the cornerstone of preservation within the federal government, preserving all types of resources. It allowed preservation advocates an easy way to meet their needs, resulting in a broad range of sites united in name but not in content.

The bill was important in that it allowed for the protection of areas to be preserved without a distinct purpose (as seen in the establishment of National Parks - the preservation of areas with exceptional natural beauty), growing to include areas that local and federal officials sought as national parks. However, the bill did not stipulate that the areas be funded, and all national parks required support and approval in Congress because they involved federal allocations. Instead of pushing for a bill to establish a national park, which would all be held up to the example of Yellowstone for natural significance, officials could lobby for the proclamation of a National Monument. This was much easier to achieve because it only required the signature of the President. However, these areas were not seen as resources of the importance of National Parks, a status that hindered the development of the National Monuments, especially following the establishment of the National Park Service in 1916.

The ambiguous language in the Antiquities Act allowed for a wide range of possibilities. It allowed special interest groups to gain protection for areas that federal agencies deemed unworthy of protection by other means. Many areas that could be protected under the Antiquities Act did not meet the amorphous standards for National Parks. President Roosevelt used the language of the act, especially the "scientific interest" clause, to establish monuments with a wide range of significance. The ambiguity in the act gave him vast latitude to create his own version of the boundaries of the monument category. There were limitations, however. National Monuments could only be established on federal land, including unallocated public domain, National Forests, and military reservations.

Most of the early National Monument proclamations established protection in areas that had previously been placed in temporary withdrawals. There was little argument about the suitability of reserving places already withdrawn from public exploitation, places which were predominantly protect the cave. [5] Associate Forester Overton W. Price responded, stating that the monument proclamation had been submitted to President Taft. On July 12, 1909, Taft signed Proclamation No. 876 (36 Stat. 2497), officially establishing the Oregon Caves National Monument. This 480 acre tract was protected from "any use of the land which interferes with its preservation". The monument fell under the jurisdiction of the Forest Service, as they controlled the surrounding Siskiyou National Forest. National Monument status was deemed appropriate not only for the potential scientific possibilities, but also because of the amount of vandalizing by visitors. The Forest Service also saw the establishment of the Monument as a way to engender local support for the Siskiyou National Forest, in addition to the possibility of federal appropriations to promote tourism within the region. The size restriction of 480 acres did not preclude timber harvesting in the surrounding forest, and was in accordance with the Antiquities Act requirement that the size of such reservations be limited to the smallest area compatible with the proper care and management of the objects to be protected.

About the time of the Monument's establishment, the Forest Service was receiving requests for permits and leases to develop the cave site. As early as 1908, the Forest Supervisor in Grants Pass received a request from G.O. Oium to develop electric lighting within the cave, make improvements in the circulation system within the cave, develop a guide service, and place tents for rent on the site. [6] Other early attempts to secure a Special Use Permit by local entrepreneurs to establish a guide service and provide lighting within the caves were made, but the Forest Service did not initially act on the requests.

The Forest Service was hesitant to act on these requests because it was still attempting to define its own role at the Monument. The discussion involved the Forest Service's ability to let contracts on government lands, their position with respect to the cave guide service, control over the cave entrance, and other policing activities. The guard issue was settled in the spring of 1911. A guard was provided primarily as a protection against vandalism with a secondary purpose of providing a guide service through the cave. [7]

The issue of permits for construction on National Monument land was debated within the Forest Service. In 1912, a USDA solicitor stated that the Forest Service did not have the authority to issue a permit for the development of the Monument as a resort facility. As a National Park, however, the Oregon Caves would be allowed development under a concessionaire contract. This spurred an early attempt to garner National Park status for the Oregon Caves, led by the Game and Fish Protective Association, a local group pushing for the creation of a 200,000 acre park to facilitate hotel and road building. This attempt failed, even though two separate bills were introduced in Congress to try to establish a National Park at the site.

The passage of the Term Occupancy Act on March 4, 1915 allowed the possibility of concessionaires at the Monument. This bill permitted the Forest Service to lease land for the construction of hotels, summer homes, concessions, and other recreational uses. Local entrepreneurs were again encouraged by

this act, but the Forest Service was reluctant to grant a lease to most of the development schemes because the applicants did not possess sufficient capital to make worthwhile improvements. The Secretary of Agriculture stated the official view in the statement "it is our policy to encourage the development of recreation areas, like the Oregon Caves, in every way possible." [8] The lack of a road into the Monument was also a concern for the Forest Service, as the ability to draw large numbers of visitors would be necessary before a long-term permit was issued.

Even though the Forest Service was now allowed to make long-term concession contracts, the agency remained cautious about development at the cave site. Planning concerns were of high importance to the District Forester from Region 6, headquartered in Portland. Assistant District Forester C.J. Buck summarized the agency's agenda and process in a letter to Siskiyou National Forest Supervisor MacDaniels in February of 1920. Buck wrote:

I think there is no doubt but that the Forest Service is obligated to undertake a plan of development at the caves. It is also absolutely certain that our responsibility cannot be redeemed unless the kind of improvements, location and landscaping of the grounds are worked out with great care. A recreation plan for the development of this place is absolutely necessary... Personally, I do not feel that proper development can be had unless considerable work on the ground and thought is given the matter... The matters I am particularly concerned about are outside the Caves, such as planning the location of the road, camp grounds, hotel site, parking grounds, guide's cabin and other improvements. The area of suitable land is so limited that considerable foresight must be exercised in placing the improvements where the effect will not be displeasing... As a fundamental part of that plan, I would put the location of the road. [9]

The Forest Service did have an obvious desire to develop the site, but without a road their efforts would be fruitless, as only 1800 visitors a year were making the arduous trip to the cave.

The issue of the construction of a road to the Monument was paramount in the Forest Service's consideration of issuing long-term permits for development. An auto road had reached nearby Holland in 1912, fifteen miles from the cave. California's announcement of an appropriation to construct a highway from Crescent City to the Oregon border furthered the interest in the development of the project, as even more visitors could reach the site via the planned Redwood Highway. The contract for the road construction to the caves was let in 1921, with a time limit of 180 working days for its completion. Work started in August of that year, with a major effort in clearing brush and trees from the right-of-way. It was estimated that over a million board feet of timber and a "correspondingly large" amount of brush would have to be removed. [10] The work proceeded quickly, and by October the road was 1/3 complete. [11] The 11.7 mile road was officially opened on June 27, 1922, at a final cost of \$295,000. In terms of visitor numbers, the new road was quickly a success. Visitation to the Monument jumped from about 1900 people in 1921 to over 10,000 in 1922.



The Oregon Caves Highway, soon after completion.

At this time, a tent camp was being run at the caves by McIlveen under the first contract granted by the Forest Service on the site. Food was also provided for visitors at the cave. The increase in visitation prompted the Forest Service to draft the first development plan for the area. This included the development of a number of small cottages at the confluence of Grayback and Sucker creeks for visitor

accommodation on land recently transferred from the General Land Office to the Forest Service. The development at the Monument included a proposed 25 x 35 foot log house to be built about 700 feet down Cave Creek from the main entrance to the cave and a number of small cottages near this hotel. The proposed Union Creek development near Crater Lake was taken as the model for the development at the Monument. Buck envisioned a ranger cabin and picnic tables in the area near the cave entrance. The Forest Service was clear on the style of the development from the start. A Special Use Permit drafted in 1922 includes a condition that "All buildings and structures shall be of the same general style and of an accepted type of rustic architecture." [12]

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Site and Building History (continued)

Oregon Caves Company Development

At the time of the completion of the Caves Highway (now Oregon 46) in 1922, McIlveen was operating a tent camp under a Special Use Permit from the Forest Service at the caves. A group of local businessmen from Grants Pass saw the caves, Monument, and general area as having a high potential for development, and in 1923 filed an application for another permit. The District Forester, George Cecil, had been working with the group for at least a year on the development of the application, and felt that the group was comprised of "responsible business men of Grants Pass, none of great wealth, but all sound, public-spirited citizens, whose names are more than sufficient to back paper of this kind." [13] The District Office in Portland sent news to Forest Supervisor MacDaniels on March 16 that the term lease had been approved. [14]



The tent camp above the Chalet.

The Special Use Permit granted to the newly established Oregon Caves Company essentially involved three critical components. First, the OCC was to establish a guide service for the cave, including the availability of coveralls and appropriate light sources. Second, the OCC would be allowed to construct a "permanent guide headquarters station building" immediately, containing an office and registry room, ladies' dressing room, public rest room, and an optional lunch room or kitchen. These requirements could be met through either one or two buildings on the Monument, with Forest Service approval of the design prior to construction. The quality of the building(s) was kept to a relatively high level, with the stipulation that the construction cost a minimum of \$2,000. [15] The third component of the application was a proposed resort development at the mouth of Grayback creek.

The Grayback Creek component of the permit contained a set of minimum requirements, agreed upon by the Oregon Caves Company and the Forest Service. The OCC was to develop, by June 15 of 1923, a tent camp including a dining facility and kitchen to accommodate 30 overnight visitors. A permanent store with camping supplies would also be constructed by this same date. Within a year of that, the company agreed to complete a main resort building with a lobby, dining room, and kitchen to accommodate 60 people, construct a pressure water system, and build outdoor restroom facilities. By July of 1925, the company was required to accommodate 30 more people in new "cottages" or in wings attached to existing structures. By July of 1926, the OCC was required to develop cottages, wings, or other permanent structures to accommodate a total of 60 visitors. The original concession development at the

Oregon Caves was to be a split between the resort development at the Grayback Creek site (8 miles from the cave) and the construction of limited facilities on the Monument. [16]

In order to properly formulate a development plan, Arthur L. Peck of the Oregon Agricultural College in Corvallis (now Oregon State University) was persuaded to visit the area and advise the Forest Service and the Oregon Caves Company on how to lay out the development at both sites. Peck, a professor of landscape architecture at the college, advised the company to make use of a flat area within the ravine near the cave entrance, about 100 feet to the east of the entrance itself. Peck's plan was to introduce a "good sized building on the terrace, where Mr. McIlveen's mess tent was last year, with a porch from which a view of the entire lower valley could be obtained." [17] The porch was intended to extend "beyond the house so that it would include the spring that was opened on this terrace, and this porch would form an entrance to the path to the Caves and also to the trail up the gulch leading to the upper entrance. Upon this trail there would be one or more small buildings as on an irregular street. There would not be many of these, as there is no need for them, the dining-room and office being in the large building." [18]

Peck, in agreement with the 1922 Forest Service plan for the monument, decided on an architectural style for the development around the cave entrance. His idea was that the buildings should respond to the local climate, which involves heavy snowfall during the winter months. An "Alpine type" of structure was needed to serve this end, but it also suited the particular landscape of the site. The notion of the Chalet was born, and to answer additional landscape aesthetic concerns Peck decided the building should be finished with a cladding of Port Orford cedar bark or sugar pine shakes. Either of these options would quickly weather to a silver gray or reddish brown, blending in with the colors of the surrounding landscape. The architectural style was chosen chiefly because of its suitability to high elevations and the surrounding mountains and big timber. The picturesque and distinctive style contributed to, instead of distracting from, the landscape.



The original Chalet and evening bonfire.

The new building, the Chalet, was constructed in 1923. This was the first permanent construction by the Oregon Caves Company at the Monument, containing a lunchroom, cave tour registration Oregon Caves Chateau office, restrooms, and seven rooms to accommodate visitors and employees. The massing of the 1-1/2 story Chalet was primarily located to the north of the "porch" that evolved into a breezeway separating the two portions of the building at the ground level. The breezeway, or porch spoken of by Peck, spanned the base of the ravine and linked the larger northern portion of the building with the smaller southern portion.

The original Chalet was replaced with a new building during 1941-1942. The new structure retained the same general massing locations and design ideals of the original, but was set back ten feet further from the road to facilitate pedestrian circulation. Gust Lium, an architect and contractor from Grants Pass, was responsible for most of the design. The new Chalet was larger than the original, yet it still fit into the confined and rugged topography of the Monument. Lium took the functions contained in the original structure and

answered the demands for a new building on the same site with expanded facilities, showing his adaptation to the limits imposed by a confined site. The building cost \$25,000 to construct, exceeding the initial estimates by about \$8,000. However, the Oregon Caves Company was eager to finish construction before wartime inflation took effect in the area. This 1942 version of the Chalet exists today, the second permanent building to occupy the same site. It continues to play its traditional role as an important facilitator of the visitor experience at the monument, and is the focal point for day use visitors to the Oregon Caves.



The guest cottages.

The concessionaire's next development at the Monument was the construction of a series of guest cottages in the ravine east of the Chalet. These seven cottages were also designed and built by Gust Lium in 1926, the same year that the Redwood Highway opened between Crescent City, California and Grants Pass. The cottages were sited above the Chalet and a nursery ("Kiddy Kave") just to the east of the Chalet, with short, steep, switchback trails connecting each cabin to the main trail. The tent cabins employed by McIlveen under his permit were still in the area as well, creating a mixture of structures in the gulch. The cottages were all laid out with the same floor plan, yet the exterior of each was distinct through subtle design changes such as the addition of small dormers in varying configurations and varied entrance details. The cabins held to Peck's basic design ideal of the development at the Monument, with Port Orford cedar siding and a rustic exterior appearance.

This development was closely followed the next year by the construction of a guide dormitory, north of the Chalet and set up on the hillside above the road. As originally built, the dormitory had only its vertical cedar bark cladding as a decorative feature. Like the Chalet and cottages, the dormitory was designed and built by Lium. It remains at the site today, a two story rectangular building somewhat hidden from view by plant growth. The placement of the dormitory was contrary to Peck's original decision to site the building west of the cave entrance.



The guest cottages, looking down toward the Chalet.

By the middle of 1927, the resort at the Monument could accommodate about 56 visitors, plus the concession staff of about 20. [19] The money spent on the development at the cave site precluded any development of the Grayback Creek area, which was originally to be the main focus of resort development. The financial expense and attention to the day-to-day operation of the concession at the Oregon Caves "made Mr. Sabin (the manager of the resort, and a founding member of the OCC) very doubtful about whether they want to do anything with Grayback." [20] As early as the fall of 1924, it was fairly obvious to the Forest Service that the company was planning to abandon the permit for development at the Grayback site. The original Forest Service plan for development of the caves featured Grayback as the main resort, with the area immediately surrounding the caves serving as a subsidiary development. The concessionaire chose to develop the cave site first, and the plan to develop a resort at a distance away from the caves on government lands never came to fruition.

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Oregon Caves Chateau Construction

Only one year after the completion of the Chalet, the Oregon Caves Company began thinking of further development of accommodations at the Monument. Fred Cleator, a forester who essentially functioned as a landscape architect and recreation planner for the Forest Service, reported in July of 1927 that the concessionaire was considering the "possibility of a large new hotel unit costing about \$100,000 with dining room on lower level to be traversed by Caves Creek inside." [21] The Oregon Caves Company already had accommodations for 20 people in 10 tent houses, 42 people in seven double cottages, and 25 people in the Chalet and guide dormitory. [22] However, due to the rising number of visitors, the company sought to increase their capacity. The needs expressed to the Forest Service by George Sabin, manager of the resort, were "an ample lobby, increased dining room and kitchen facilities, and heated rooms." [23] The opinion of the company stockholders was that the term for the Special Use Permit granted by the Forest Service should be increased to twenty years at a minimum in order to justify the expense of construction by the concessionaire. The cost estimate for the new building was reduced to \$50,000 from the earlier estimate of \$100,000, yet the company still wanted some measure of stability and control over the development through a longer term permit.

Professor Peck was brought back to the Monument again to assist in the planning of the proposed hotel. Peck argued that the site at the head of the gulch formed by Cave Creek would be the ideal location at the site, because a hotel building at that location would fit well with existing and future developments. He proposed that the head of the draw be filled in to form a court, as the new building would serve as "the hub of all further improvements." [24] The new construction would also allow for some circulation improvement at the road level, which would be widened by five feet. [25] The new structure would also be an aesthetic improvement at the site because it would allow the tent cabins to be removed. These were initially a temporary arrangement, and Peck found them intrusive and disapproved of their location and existence. [26] They were allowed to remain by the Forest Service, but only if the new hotel was under construction by the 1930 season. They could be used only until the completion of the hotel, according to the agency.

By the summer of 1930, Mr. Sabin and the Oregon Caves Company were anxiously awaiting word on the approval of their plan to build. They wanted to get materials to the site before the heavy rains set in, but a decision was not officially made by the Forest Service until June 1 of 1931, when a Term Permit for 20 years was granted to the Oregon Caves Company allowing the construction.

Sabin, Peck, and Lium met with the Regional Forester in Portland about the proposed hotel design. The Forest Supervisor, J.H. Billingslea, felt that the plan was "unusually well adapted to the location, and conceived only after very careful planning." [27] Like the earlier cottages and Chalet, the hotel was to be built in the Rustic style. The style was dictated by the Special Use Permit, which stated "all buildings

shall be of the same general style and of an accepted type of rustic architecture."

Gust Lium's rustic design for the Chateau appeared as a perspective drawing in *The Morning Oregonian* on August 7, 1931 and the *Medford Mall Tribune* on August 18, 1932. It fit within the ideals of the style, using local materials in a structure in harmony with the site. The building's massing, proportion, and siting within the natural context were critical to the style, and the Chateau proved to be exemplary in all aspects. As a representative of the rustic style, the richness of texture in the exterior treatment and a juxtaposition of shapes yields a refined aesthetic that is both decorative and functional. The steeply pitched roof, Port Orford cedar bark cladding, and varied intersecting roof forms give the building a rugged appearance that blends with the mountainous site, complementing the surrounding landscape. The location of the building is also critical, for even though it is a 28,000 square foot structure its location at the head of the ravine and its six stories allow it to be less intrusive, as the lower three floors are below the level of the road.



Lium's perspective drawing of the Chateau from the *Morning Oregonian*.

The use of local materials is also an ideal of the rustic style, and the Chateau succeeds gracefully in this aspect. This was especially important at this somewhat remote site. The stone for the fireplace was taken from the nearby hillside, and the lumber used was cut in the middle of Sucker Creek. From there it was trucked to the Villair and Anderson Mill on the Caves Highway at Milepost 14, where it was cut and trucked to the site. The cedar bark was obtained locally as well, taken from a railroad tie cutting operation on Grayback Creek upstream of the Grayback Camp.



Construction photo showing the concrete forms.

Lium was a builder and architect (not formally trained) from Grants Pass, arriving in that town in 1923. He was a prolific local builder, completing over 50 houses in the Grants Pass area and a number of commercial and institutional structures. He also completed many projects for the Forest Service throughout the Siskiyou National Forest and six Rivers Forest. He was a leader of CCC construction crews, completing most of the wooden structures at Patrick's Creek campground and possibly some of the rock walls in the area. He was also remembered for his construction of the U.S. National

Bank Building, a marble faced structure that was torn down in the early 1960's in Grants Pass. The building was solidly built and hard to demolish, a trademark of Lium's construction. He gained a reputation for constructing buildings that were built to last, regardless of style or setting. Lium was involved in the construction of the Chateau from the start, serving as both designer and contractor.

Work on the Chateau began in September of 1931. Lium utilized a small crew for the construction, which was delayed due to the Depression and the negotiation with the Forest Service of a longer term permit. Lium's crew was usually less than 20 men, yet the construction was complete by May of 1934. This fact, taken in conjunction with the Oregon Caves Company's financial

troubles during 1932 and 1933, reveal Lium's management skills and construction ability. The company was allowed to sell \$25,000 worth of stock to help finance the construction of the hotel, but had difficulty locating investors. The Oregon Caves Company's finances were such that they had a hard time paying the fee for their term permit, choosing instead to place all free capital into the construction. Sabin wrote to the Assistant Regional Forester in March of 1934 that "even under these difficulties, we have steadfastly held to a determination, not to cheapen the finished product in order to complete" the construction. [28]



The Oregon Cavemen hard at work on the Chateau.



The Chateau just prior to completion. Note that the peeled log and steel fire escapes have not been installed.

When completed, the new Chateau was praised both locally and regionally. Lium's skill at adapting the many requirements of the large structure to a confined site set the building apart, and the rustic character of the building fit within the Forest Service development scheme for the Monument. It became the showcase structure for the Monument, a hub of activity for both day visitors and overnight guests. The building officially opened May 12, 1934. One newspaper account of the newly opened structure commented

The new Chateau, unquestionably responsible for the major part of business increase at Oregon

Caves, is deserving of more than casual examination, for several reasons: Native materials were used in all places possible, which employment has resulted in a building entirely in harmony with its surroundings. [29]

Another regional publication described the Chateau in the following way: "Successful effort has been made in the construction of the Chateau, both without and within the building, to keep it in harmony with the rugged wildness of the section, and yet provide a comfort unexcelled by metropolitan hostelryes." [30] George Sabin, the manager of the new hotel, commented that "it's unique, and something different. It's constructed for the place in which it stands, and there is comfort everywhere." [31]

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Post-Chateau Development by the National Park Service

Shortly after the completion of the Chateau, the Oregon Caves National Monument received a change in administration. It was transferred from Forest Service jurisdiction to the National Park Service by an Executive Order issued on April 1, 1934. The transfer was to officially take effect on October 10 of that year, but NPS administration of the Monument may have begun by August 10. The order transferred 16 National Monuments administered by the Forest Service to the NPS, all in the western states. Each retained its status as a National Monument, yet the scale and features (of natural or scientific interest) varied greatly. The press release announcing the transfer from the Department of Agriculture to the Department of the Interior stated that "the functions of administering these areas for national monument purposes was transferred to the National Park Service of this Department (Interior), and that office is prepared to assume jurisdiction at once." [32]

The National Park Service admired the development at the Monument by the concessionaire, especially the rustic character of their buildings. As a result, the NPS worked closely with the Oregon Caves Company over the next eight seasons in their development of the site. The NPS utilized Civilian Conservation Corps crews from Camp Oregon Caves, located at the Grayback site that was once to have been the concessionaire's main resort facility. The NPS intention was to make all new work harmonize with structures already in place at the caves, and through its planning process the CCC projects were coordinated with the concessionaire's improvements. The NPS process was aimed at obtaining a workable consensus from a wide variety of reviewers through comprehensive site planning and the preparation of master plans for each site. These plans were critical to the agency as it tried to obtain funding for CCC and other budget requests, and the master plan supplied a rationale and justification for each project.

The NPS used a systematic development process, blending architecture with natural features and placing equal emphasis on each. At the time of the transfer to the NPS, the Monument contained a wide variety of structures, each designed for a specific purpose and built in the rustic style, the favored style of the agency during this period. The style was adapted regionally by designers in the Pacific Northwest, and the regional interpretation of the rustic style came to be termed "Cascadian". The stylistic moves by Lium and the Oregon Caves Company in their construction is perhaps the primary reason that the NPS admired the development at the Monument. The NPS took



The Ranger Residence in 1999.

jurisdiction over a monument with a great number of structures, including the Chalet, guest cottages, Chateau, a rustic service station constructed in 1931, "Kiddy Kave" (the daycare facility), a powerhouse for the cave lighting system, the guide dormitory, and a guide shack near the entrance to the cave.

The NPS continued to develop the site to suit their particular needs. A ranger residence was constructed by the NPS using CCC labor in 1935-1936 on the hill above the guest cottages to the east of the Chalet. The building was designed by Francis Lange, the Resident Landscape Architect at Crater Lake National Park. His original design utilized Port Orford cedar bark cladding, laid horizontally instead of vertically. Sabin argued that this detail would not fit within the established design precedents at the monument, but also that the building would not shed water effectively. The siding was changed to run vertically, matching the other main structures at the monument. As the first government structure at the Monument, the NPS realized that its appearance should blend with the development by the concessionaire. The building achieved this aim. A checking and comfort station was also constructed by the NPS in the main parking lot, again employing the rustic style. The structure was placed at the road into the caves area, so that the NPS could achieve a measure of control over the one lane road to the cave area. The building was virtually the last CCC project at Oregon caves, completed in June of 1941. The combination of administrative and restroom functions in such a small building made the checking and comfort station unique within the National Park system.

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PART I

Site and Building History (continued)

General Physical Description

The Chateau sits on a reinforced concrete foundation in the head of the canyon formed by Caves Creek. The building site was blasted to clear a large enough site. The first floor, containing the boiler room and workshop, is smaller in scale than the floors above, matching the topography of the site. Its walls and floor are bare concrete that taper inward, creating a narrower space at the east end of the room than the west. A hole has been cut high in the north wall of this room, providing access under the north wing of the building. The south wall has an opening cut for the boiler exhaust vent that runs under the second floor to the base of the chimney. The west wall is penetrated by two windows and a double door providing access to the small exterior terrace. The ceiling is also formed of concrete, with reinforced beams as an integral part of the structure.

The second floor houses storage areas, limited employee housing, the employee dining room, and large refrigerators and freezers. This level is more expansive than the first, widening to fill the entire width of the valley head inside the road. The floors and exterior walls are constructed of reinforced concrete. The post and beam structural system begins at this level, resting on the exterior walls of the first floor and four columns placed in the middle of the space below. The base of the marble chimney is visible at this level, appearing as a large, stuccoed, rectangular masonry mass in the south wing. Openings on this floor are concentrated on the west side, with a series of double-hung windows in the employee dining room and employee quarters. A double swinging door is present at the west end of the south wing, providing access to an exterior terrace. One opening is present at the east side of the south wing that has been boarded over. The internal walls of this level are framed conventionally with dimensional lumber, and the north wall of the north wing has a wood frame wall running its entire length covering the exterior concrete wall. A dogleg stair in the center of the floor at the west side leads up into the dining room.

The third floor has a combination of structural systems. The exterior walls on the north and south sides are concrete, with the east and west walls making the transition from concrete to wood. The kitchen, dining room, coffee shop, and lounge/bar area are contained in this floor, as well as a dumbwaiter to the second floor, men's restroom, and the conduit containing the diversion of Caves Creek that runs through the space from east to west, a signature element of the building. The dining room and lounge areas are a single open space supported by the wooden post and beam structural system. The kitchen and dining room are separated by light wood framed walls, with two doors between the rooms. The kitchen is separated from the coffee shop by the fireplace mass and a freezer. Circulation between these rooms is achieved through a set of double doors. Exterior penetrations include three doors to the west, two to the east leading to the pond and courtyard, and a series of windows on each of these sides. The windows at this level are primarily large fixed windows with rows of smaller lites above the large pane. The main vertical circulation for guests starts at this level with a large staircase leading up to the lobby level.

The fourth floor, containing the lobby, office, front desk, and five guest rooms is entirely wood framed with either heavy timber or dimensional lumber. The lobby consumes most of the south wing and center sections of the building, with the office and front desk at the east end of the south wing. The guest rooms are located in the north wing, and a women's restroom is present in the northwest corner of the central trapezoidal section. The main entrance to the structure is located on the south side of the southern wing. The lobby windows are primarily large fixed panes with smaller lites across the top, similar to those in the dining room. The office windows and windows in the guest rooms are primarily double hung wood windows. The interior walls of the guest rooms and the partitions separating the office from the lobby are light wood framed with dimensional lumber, as are the exterior walls. The lobby and stair area contains the heavy timber system, supporting the floors above. The post and beam system ends at the ceiling of this level, and the floors above are constructed entirely of dimensional lumber.

The fifth floor is accessed from the main staircase that starts in the dining room and continues up through the lobby. The staircase is constructed with peeled log stringers supporting oak treads and a madrone and fir handrail. The floor contains eight single guest rooms and three suites composed of two adjoining rooms. Double hung windows are the primary fenestration, and two fire doors lead out from the west end of both the north and south wings onto the steel fire escapes. This level is the last full size floor in the building, as the roof shape constricts the size of the top floor.

The sixth floor, the top floor of the building, is reached via a stair in the south end of the fifth floor hallway. The floor contains two guest suites and seven individual rooms, although only five are in use for this purpose. The fenestration at this level is a combination of double hung and casement windows, with two doors leading out to the fire escape in the two unused guest rooms. Access to the attic is available through two hatches in the ceiling of the hallway at this level, and the lower attics are accessible through doors at the ends of the hallway and through access panels in the bath rooms of the south wing.

The roof is covered with cedar shingles, and has its own sprinkler system. It is formed by a variety of intersecting roof shapes, including a main gable with cross gables at the north and south wings, shed roof projections at the sixth floor, and a few small dormers. An access hatch is located just above the chimney, which is exposed marble with six clay tile flues. The valleys are open, containing crimped flashing. The rafter tails are visible at the eaves, and log brackets support the gable ends. The overhangs are large, and the building does not have a gutter system. A painted verge board is present at the gable ends.

The exterior walls are sheathed with shiplap covered by building paper. Port Orford cedar bark is the primary exterior cladding, and is nailed to the sheathing. Openings at windows and doors possess simple surrounds, and all windows have weathered wood sills. A steel catwalk and fire escape system are present on the west façade, lag bolted to the building. The bottom two floors on the west side are the only ones lacking the Port Orford cedar bark siding, and are painted concrete.

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PART I

Site and Building History (continued)

Chronology of Alteration

In the past sixty-five years since the completion of the Chateau, the building has undergone minimal changes and alterations. The integrity of the historic fabric, inside and outside the building, has been kept at a high level by the Oregon Caves Company. The concessionaire is responsible for the maintenance of the structure and all areas within five feet of the building. The structure's National Historic Landmark designation in 1987 by the Secretary of the Interior proves that the structure retains a high level of integrity in its fabric and even furnishings.

The earliest alteration was the addition of the rooftop sprinkler system, completed in 1934. Its purpose was to wet the roof down each evening, as required, before the campfire program. A large bonfire was constructed every night in a flat area between the cave entrance and the Chalet, and as a precaution against fire the sprinkler system was installed. The roof sprinkler system was presumably connected to the existing network of fire hose plumbing, which was present at all floors.

To complement the meal service in the dining room and Chalet, the Chateau was altered in 1937 by the addition of a coffee shop in the east end of the south wing. The space was originally used as storage, but was renovated to serve the new purpose. The plans were done by the Grand Rapids Store Equipment Company of Portland, and included a soda fountain on the east wall, knotty pine wall paneling, a parquet floor, birch and maple counters and shelves, and bright steel stools with red leather upholstery. This area could seat 23 patrons.



The original Coffee Shop.

That same year, 1937, a generator was added in the boiler room on the first floor for emergency power. A generator still fills this spot under the windows on the west wall, and may be the original.

The Chateau's heat system was, and remains, a hot water radiator system. In 1946 an oil burner and 3000 gallon holding tank were installed to meet the demand from this structure and the Chalet, which was also heated by the same plant after its reconstruction in 1942. The availability of wood was another critical factor in this shift, as down wood for the boiler was becoming increasingly hard to find in the immediate area. This boiler is still in use today, and 1998 the firebox was replaced.



Typical Chateau guest rooms before...

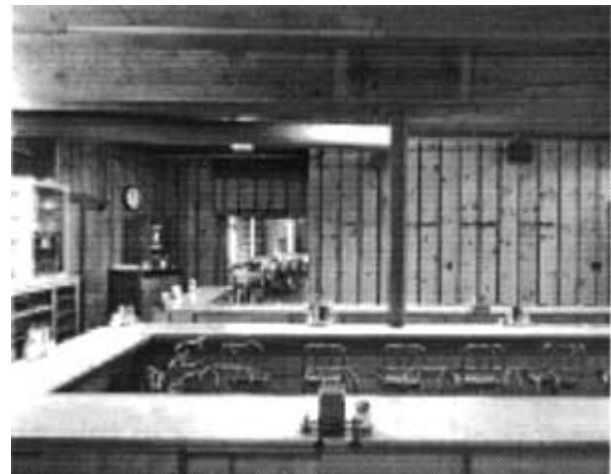


...and after the sprinkler.

Perhaps the most significant alteration to the Chateau in terms of its interior appearance was the addition of a fire sprinkler system in 1950. This system runs through the inhabitable spaces in the Chateau, instead of through wall and ceiling spaces. The visual intrusion into the guest rooms is the greatest impact of this alteration, with some rooms containing four inch mains and other feeder lines branching out from these. The system itself is nearly historic by the Secretary of the Interior's age standards, but was installed in a less than sensitive fashion. The sprinkler system was modified and added to in 1961 as well, but the extent of the work involved during this period is unclear. The entire system received new sprinkler heads during the off-season early in 1999, as required by code.

About the same time the interior sprinkler system was installed, a series of fire doors was also added. These doors are present on the fourth and fifth floors. At the fourth floor, the door is located in the north wing in the hallway that is raised above the level of the lobby. The fifth floor doors are located to each side of the main staircase, leading into hallways running to the north and south. The doors themselves are steel, built into walls spanning between the two original walls at each location. The new walls are clad with a fiberboard product that does not match the historic Nu-wood panels.

In 1954, the Oregon Caves Company remodeled the 1937 coffee shop. The space was enlarged by the removal of a kitchen restroom and relocation of the stairs to the second floor, which were moved under the main stairway from the dining room to the lobby. The capacity was increased from the original 23 seats to 45 through a new counter design that weaves through the space. The heavy timber column in the center of the room was removed and replaced with a steel post to facilitate circulation in the tight area between the stools. The interior finishes remained the same, and the stools retained their red leather seats and bright steel finish. The original double hung window to the north of the door leading out to the pond was increased in size and replaced with a large fixed window, matching the one on the south side of the door.



Coffee Shop after 1954 remodel. Note the steel post.

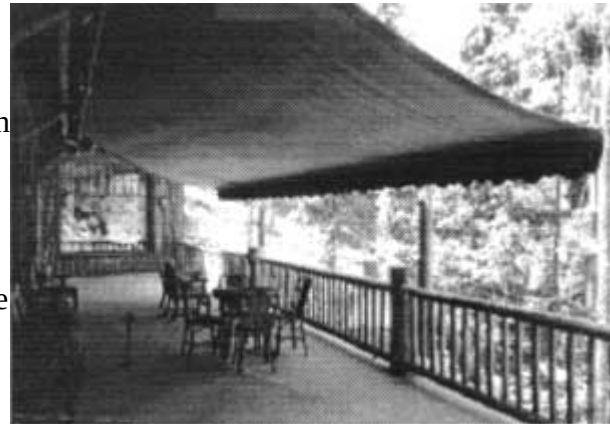
A ramp was built from the kitchen to the second floor storage rooms in 1954 as well. This exterior alteration



The front desk after alteration.

allowed employees to access the supplies below more easily. The front reception desk in the lobby was also changed about this time to allow for a display section and increased space at the desk.

The largest exterior alteration to the Chateau during its existence



Historic view of the veranda.

occurred in 1958. Historically, wooden verandas were located on the west side of the structure, spanning from the north wing to the south along the western edge of the center section of the building. These verandas allowed visitors to the Chateau to relax and take in the view of the valley from either the third or fourth floor level. The log structure was a handsome component of the original building. It was removed in 1958, after the cumulative effect of overloading by snow caused the veranda to be condemned. The concessionaire elected to replace the wood structure with a series of steel catwalks bolted to the side of the building. The visual impact of the catwalks is minor, but the building lacks the original character of the peeled log veranda, a significant element of the west façade. Three doors, one at the dining room level and two on the lobby level, were removed and replaced by large fixed windows.



The new fire escapes.

Four years later, in 1962, the original fire escapes at the west end of the north and south wings were replaced. The original escapes were made from peeled logs with steel treads. These were replaced by all steel fire escapes as a life safety precaution.

December 22, 1964 saw the most damaging event to the Chateau. A 200-year precipitation event caused water and debris to begin flowing down the gulch above the Chalet, and this may have been augmented by the failure of a concrete dam. Witnesses described a 17-foot wall of water and debris moving down the canyon, through the open archway in the Chalet, and down into the lower trout pond by the Chateau. Mud, silt, and debris flowed into the Chateau at the third floor level, causing approximately one-quarter of the floor to cave in. The area in the east end of the north wing is hardest hit, and the original maple dance floor is replaced by plywood subfloor over new joists, with asphalt tile finish flooring. The heavy timber support for this area was replaced by two laminated beams bolted together. These new beams sit on the original post and notch in the concrete at the east end. A report following the flood stated that about 3 feet of mud, gravel, and debris covered the rest

of the dining room floor. Two feet of silt were deposited in the kitchen area, and one foot was deposited in the coffee shop. This is the reason for the wide 12" baseboard in the coffee shop as it hides the stain on the walls from the silt. The coffee shop also lost its original parquet floor in favor of asphalt tile following the flood. The second floor walk-in freezers and chef's quarters were also damaged by silt and debris, and the boiler room contained about a foot of silt. In addition, the madrone balusters on the main

stair had to be replaced. An estimated 3500 cubic yards of debris entered the Chateau, and the damage to the concessionaire was estimated to total \$100,000. The Chateau remained closed until May 26 of 1965, opening as scheduled for Memorial Day Weekend.

At some point the electrical system was upgraded in the Chateau, with grounded outlets installed in all rooms. Electric supplemental heaters were installed in a few of the guest rooms, especially on the lower floors. The dates of these alterations is unknown.

The interior wall finishes, comprised mostly of a pressed fiberboard material sold under the name "Nu-wood", were altered in 1989 by the application of a fire retardant glaze. The product, manufactured by American Vamag Company Inc., is sold as "Albert DS". The glaze was applied to all interior fiberboard panels, altering the original matte finish. The glaze was brushed or rolled on, and gives the walls a glossy appearance.

A final note about alterations to the structure needs to be made. The bathrooms in all areas of the building have gone through updating of one type or another fairly systematically. This is an ongoing process, as the concessionaire seeks to provide a high level of comfort in a way that is easily maintained. Few historic elements remain in the bathrooms, with the exception of lavatories, sinks, and a few fixtures in limited cases. The wall and floor finishes have been replaced in virtually all of the baths.

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PART II

Recommendations for Programmatic Use and Development

Over the past two years, the National Park Service has developed a new General Management Plan and Environmental Impact Statement for the Oregon caves National Monument. The final version contains four alternatives, A through D. Each alternative forces the NPS to play a slightly different role at the Monument, and impacts to many areas under each alternative are examined. Areas such as viewshed protection, building use, trail maintenance, protection of cultural resources (including the five historic structures in the National Register District established at the Monument), visitor services, and cave interpretation are covered in the document, among others. The author was supplied with the December 1997 draft of the GMP, and informed that the information would be essentially the same in the final version.

The four alternatives have different impacts on the historic structures at the Monument, especially the Chateau. However, every alternative lists the protection of historic structures within the Oregon Caves Historic District as a primary goal. The NPS states that "the visual ambiance and character of the historic district would also be retained and protected in compliance with the National Historic Preservation Act and NPS policies." (page 13) The next page of the list of common actions for all alternatives, however, is contrary to this statement. In action #11, it is stated that the NPS will seek a "suitable alternative for Port Orford cedar siding — Since Port Orford cedar is becoming more difficult to locate due to the Port Orford cedar root rot, a suitable alternative would be found to replace Port Orford cedar for use as siding for the historic buildings in the National Register historic district." (page 14) The replacement of the historic siding material would have an adverse effect on the historic resources, and the "visual ambiance and character" of the buildings would be substantially altered. The National Park Service is characteristically an excellent steward of historic structures, but the consideration of this proposed action and the irreversible nature of the alteration must be considered. This action would result in a significant loss of historic integrity in both appearance and materials, and should not be considered as a treatment option. As stated in the exterior assessment and recommendations section, the siding should be preserved at any cost.

The first of the four alternatives is Alternative A: No Action Alternative. Under this, conditions would remain the same at the Monument, which would continue to operate under the guidelines of the 1994 Resource Management Plan. The Oregon Caves Company would continue to manage and operate the Chateau, with responsibility for the maintenance of the structure. The company's maintenance responsibility extends five feet from the building, so the concessionaire would be responsible for the majority of the work proposed in this report. The Chateau would continue in its historic function, and would be open to the public.

Alternative B is known as the Minimum Requirements Alternative. Under this alternative, the NPS would acquire all the existing possessory interest in the structures on the Monument held by the concessionaire. Under the current arrangement, the concessionaire retains all rights and responsibilities

of ownership of the buildings, except for legal title. The title remains vested with the United States. It includes the right to just compensation for the depreciated value of the company's investment in the structures, estimated to be \$825,000. To acquire this interest, the NPS could either buy the company out or "extinguish" the interest over a 30 year period. At the end of the 30 years, the company's interest in the structures would be depreciated to zero. The cost of this action is offset by a reduction in franchise fee payments, required under the Special Use Permit granted to the concessionaire. This method of acquiring interest in the structure is potentially dangerous, for if the concessionaire knows that their interest is being extinguished they could elect to neglect the structure and save money. At the end of the 30 year term, the building could potentially be in very bad condition without any investment by the company in building maintenance.

The use and function of the Chateau is most seriously affected by this alternative. The building would cease to serve its historic function, instead being adaptively reused and converted into NPS administrative offices and collection storage. The plan states that "some alterations may need to be made to the upper floors of the Chateau in order to accommodate the administrative offices and related communications equipment and office configurations." (22) The lobby area and coffee shop level of the Chateau would be retained and open to the public under this plan, but lodging would no longer be provided in the building for the public. The loss of function and the impact on the visitor experience in the building represent a loss for the Chateau. The alterations are objectionable as they would destroy, possibly irreversibly, the historic fabric, which has retained a very high level of integrity. The plan represents a significant public impact, and a potential loss of a historic resource for the public. The Chateau's National Historic Landmark status warrants its preservation with the fewest alterations possible, and the function of the building should also be preserved in order to allow the public to appreciate the historic character of the Chateau.

Alternative C is the preferred National Park Service alternative. It is titled the "Enhanced Protection of Monument Resources and Visitor Experiences." Under this plan, the NPS would acquire possessory interest in all structures at the Monument, including the Chateau. The building would continue to operate in its historic function, under the direction of a concessionaire who leases the structure from the NPS. National Park Service ownership of the structure may provide a better maintenance alternative than the current system, and accordance with the Secretary of the Interior's Standards would be followed. Currently, the concessionaire occasionally proceeds with alterations to the structure without a Section 106 review. One example is the walls within the dining area on the third floor. They were erected without the proper review process, an issue which is potentially avoided by NPS ownership. This plan provides the best alternative of the four for the building, as it retains its historic function and remains fully open to the public.

The final alternative provides for "Increased Visitor Services and Recreation Opportunities Combined With Increased Watershed Protection." (49) Under this alternative, the operation of the Chateau would continue under a concessionaire similar to the current condition and Alternative A. It is not as objectionable as Alternative B, but perhaps not as favorable as Alternative C, the preferred alternative. However, the building has lasted 65 years under the direction of the concessionaire, and there is no reason to think that the level of care given the building would change.

Alternative C, the preferred NPS alternative, would provide the best option for the preservation of the historic Chateau. The historic function would be retained, and the building would not be substantially altered (with the possible exception of the siding issue discussed earlier, which should not be considered). This alternative is superior from a preservation standpoint as well, as the NPS is an excellent steward of historic structures.

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PART III

Structural Observations

Structural System, Observations

The Chateau's structural system is grounded with a reinforced concrete base spanning the gorge at the bottom two floors. With the exception of a crack in the west end of the north wall of the Boiler Room, this foundation appears to be in good order structurally. The main potential structural problem of the Chateau first appears intermittently on the third floor, where there is some lateral displacement of the exterior wall on the west side. The problem becomes much worse just one level up, especially in the north wing of the structure.

The walls are significantly out of plumb in this area. Each individual door jamb and window opening were measured to determine how far out they were. A four foot level was used against trim at these openings, the rationale being that the door and window trim is nailed directly to the dimensional lumber frame of the structure. The wall surfaces and floors were not used, as local variations could have distorted the actual readings. The plans on the following pages (pages 35-38, omitted from on-line edition) represent the direction and distance of the lateral displacement. All dimensions are the variation from plumb in a four foot span, with the direction indicating which way the top of the piece has moved in relation to the bottom. If the piece was within 1/8" of plumb, the measurement was not recorded.

The fourth floor of the north wing is the worst in the building in terms of displacement. In this area, deviations of up to 1-11/16" were found in a four foot vertical span. The north wall of the wing is the worst, leaning generally out to the north and to the west. The interior finishes have been affected very little by this shift in the building, and with the exception of a few doors that have been shaved or do not operate properly, they are in good shape. The puzzling aspect of this discovery is that there are no readily apparent separation points either inside or outside the structure, indicating that the north wing mass is tending to move as a coherent unit.

However, the amount of lean decreases at the next level up. While there are still deviations of up to 7/8" at the fifth floor level, the walls generally become more plumb at this level. At the sixth floor, the building leans predominantly to the west, but only in two locations toward the west end. The fifth floor leans predominantly to the north, primarily in the eastern end. This seems to indicate that the framing at each floor level is shifting independently, and the wing is not moving as a whole.

The capacity of this end of the structure to withstand various loading conditions should be analyzed by a professional engineer. While the deviation from plumb is not affecting the primary finishes, doors are being altered to retain their operability. Keep in mind that this wing of the building was most seriously affected by the 1964 flood, and the damage could have potentially been caused at that time. Careful recording of the building and its movement in this wing may reveal that the building has settled into this position and is moving no farther. This, again, should be done by a professional structural engineer who

can determine the severity of the deviation and propose a remedy, if required. The engineer or consultant should have experience working with historic structures, and a working knowledge of the Secretary of the Interior's Standards for Preservation.

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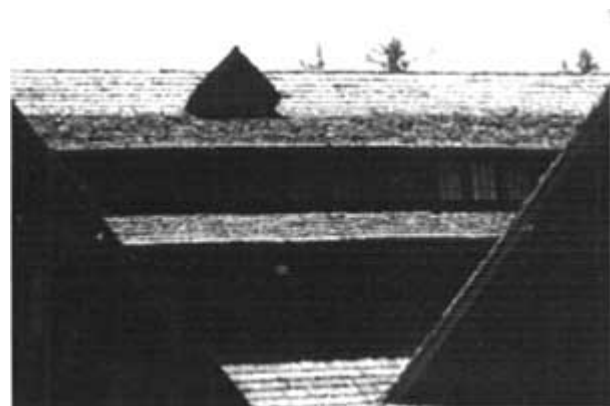
PART IV

Exterior Assessment and Recommendations

Roofing and Flashing

The roof of the Chateau is formed by a series of intersecting shapes. The main gable, running north-south across the center portion of the building, intersects two main cross gables over the north and south wings. Two large gabled dormers project from the northern and southern sides of these wings, facing out to the surrounding hillsides. Two small gable dormers were cut into the main gable at the time of the sprinkler system installation in 1950. The third floor guest rooms are covered by the two gables of the north and south wings, and shed dormers that protrude from the east and west sides of the main north-south gable.

This complex series of roof shapes and intersecting forms is unified by the treatment of the roof. It is covered with wood shakes, 1/2" thick and 24" long. The exposure varies from 9 to 10 inches, but is consistently within this range. There are two layers of shakes on the roof, both split and re-sawn. It is evident that a second roof was applied over the original shake roof, keeping the same exposure and character of the original. This second roof was applied sometime after 1950, when the two small dormers were added in the attic on the east and west sides of the building.



Roof, general field on the east side.

The roof is supported by full dimension 2" x 6" rafters, 24" on center. The roof peak is created by the intersection of the rafters, and there is no ridge member. Eight inch lap sheathing is used as the substrate for the roof, and is not fit tightly together. There are small gaps between each piece, typically less than 1/8". The 3/4" thick sheathing is laid horizontally, and is covered by building paper beneath the bottom layer of shakes.

The top layer of shakes is beginning to deteriorate. While the attic has remained dry, the shake roof has steadily deteriorated. There are many missing and broken shakes, and most are curling. The exposure is larger than the recommended length of 7-1/2" as described in Architectural Graphic Standards, but the shakes have weathered fairly well. The formula for exposure is given as $(\text{Length}-2") / 3$, which results in the equation of $(24-2) / 3$ or $22 / 3 = 7.33$. This is rounded up to the 7-1/2" dimension given on page 76. A ten inch exposure is typically reserved for vertical surfaces, according to Graphic Standards. The ridge shakes, also experiencing areas of missing and broken pieces, are cut to fit



Fascia board for gutter.

tightly around the projecting rooftop sprinkler system.

The Chateau does not have a gutter system; instead the water is allowed to run off the roof at the edges. The rafter tails are exposed, as is the sheathing beneath the eaves. The only area that the rafter tails are covered is above the main entrance to the hotel lobby on the south side of the building. A 2" x 6" board has been nailed to the rafter tails to serve as a backer for a gutter that is not in place during the winter. This board is allowed to project slightly out from the edge of the eave, and as a result all of the runoff above the board flows over it. The board is saturated in periods of heavy rain and snow melt, and the moisture is wicking into the ends of the rafter tails above the door. The sheathing in this area is also wet as the water travels through the rafters and fascia board.

The wide overhangs of the Chateau have created problems in one area. On the west side of the structure, in the southern valley that runs between the intersection of the south wing cross gable and the main gable, the sheathing is broken. This is most likely due to snow loading, since the area is protected from sunlight during the winter months as it faces north.

Another problem of the overhangs is that the rain is not allowed to reach all areas of the roof and wash them free of debris. Moss and lichens have begun to grow on the roof in areas that are protected from the weather, especially under the shed roof sections on the north and west sides. The growth is uphill of the drip line of the eave above. The shed roofs that project over the lower entrances to the building are suffering the same growth problems. The entrance to the coffee shop and dining room from the pond area are experiencing heavy growth, as are the roof structures over the stairs to the boiler room and outside entrance to the kitchen.



Sheathing damage.

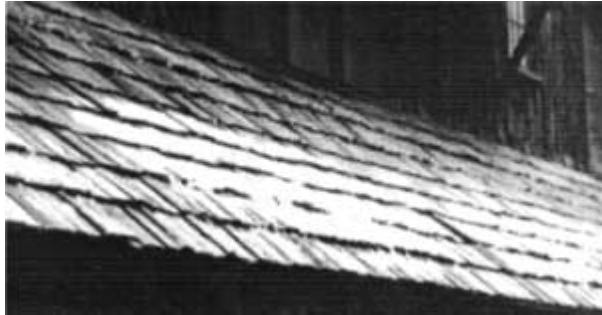


Growth uphill of drip line.

The roof valleys are flashed with galvanized sheet metal that was historically painted with a red lead paint to protect the metal. The valleys are all open, and the flashing has been crimped to prevent runoff from one roof plane from running under the shakes on the opposing roof plane and infiltrating the wood structure. These valleys are losing their paint as years of runoff have eroded the paint surface. In some locations the zinc galvanized coating is also eroding, and the valley

flashing is beginning to rust.

An access panel, located in the attic just east of the chimney, provides a close look at the chimney area and roof. From this vantage point the problems with the shakes are readily visible.



Rooftop sprinkler, main ridge.

Just south of the hatch and chimney is a large area of sheet metal roofing that is woven under the step flashing of the chimney. The sheet metal was originally galvanized, but over the years the zinc galvanizing has worn off, leaving

exposed steel sheet metal. The hatch itself has galvanized step flashing woven in with the shakes, which is coated with red lead paint. The hatch cover is removed by lifting it off of a projecting frame, allowing inspection of the hatch. The hatch is clad with sheet metal, lapped and painted with a red lead paint. The original design provided for the hatch to be held in place by its own weight, which proved to be insufficient. The hatch has blown off of the projecting frame from time to time, and as a remedy it has been connected to the building temporarily with a piece of 12-gauge wire wrapped around the rooftop sprinkler system pipe.



Small dormer, west side. Note the damage.

Recommendations for Treatment: Roof

The treatment of the Chateau roof can be broken down into seven different components. These are both short and long term solutions, and are also basic maintenance. The recommendations for roof treatment are:

- Keep the roof valleys clear of excessive snow loads. One valley has already received sheathing damage due to overloading, and the historic fabric has been compromised. The damaged area should be repaired before the next winter to avoid further damage.
- The fascia board for gutter support should either be removed or the gutter permanently installed. The concessionaire has undergone a Section 106 review for the addition of a gutter above the main lobby entrance, and is allowed to place a gutter at this location.
- The roof hatch near the chimney should receive a more permanent locking mechanism. Providing a set of stout latches and hinges would protect the door from being blown off of the building, and would reduce the risk of the hatch being dropped inside the attic after removal and falling through the historic fabric of the ceiling.
- The growth on the roof should be kept to a minimum. A moss killer should be applied to the roof to reduce the growth, protecting the shakes from accelerated decay. Care should be taken when applying the chemical so that excess does not fall to the ground and damage vegetation around the eave line of the building.
- The sheet metal roofing between the chimney and the ridge should receive a new layer of paint to

protect the metal. The material, galvanized steel, is still sound, but neglect could result in further decay of this system, allowing water to infiltrate the attic space. The joints between the sheets should be inspected to make sure they are weathertight before the area is painted. If repair is necessary, the work should be done prior to painting.

- The galvanized metal in the valleys should be repainted before the galvanizing is compromised. This needs to be done with care to avoid excessive amounts of paint on the shakes. The valleys should be cleared of debris and inspected for damage prior to painting.
- Within five years, the roof will need to be replaced. The number of broken and missing shakes increases every year, and while the attic is dry at this point the chance of water infiltration into the building envelope increases every year. The historic exposure, texture, and thickness should be maintained, and the ridge detail should be kept the same. A copper or galvanized ridge flashing may be installed to curtail moss and lichen growth on the roof, but will not help in areas that are under the eaves. The fungicide should be used to control the growth on the roof. Replacing the roof would be an ideal time for other work outlined above, including valley flashing inspection, repair, and painting, flashing the fascia board above the lobby entrance, and repair of the sheet metal above the chimney. This work should be completed before the roof begins to leak, compromising the building envelope. The roof should be replaced in-kind, with resawn shakes.

Keeping the snow load from becoming excessive and the use of a fungicide are maintenance operations that should be performed on a regular basis. The roof replacement, while costly, will help protect the building and preserve the integrity of the structure and interior finishes.

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PART IV

Exterior Assessment and Recommendations (continued)

Brackets, Verge Boards, and Purlins

The roof structure is complemented at the exterior by the existence of log brackets, verge boards, and log purlins. These elements serve both a decorative and functional purpose throughout the building.

The log brackets are present in the eight major gable ends. These are either peeled or unpeeled, depending on the location. The brackets are nailed to a 2" x 6" board that is bolted to the building's wall structure. A diagonal member runs up from the base of the board to support a horizontal member, forming a triangular bracket. The brackets extend approximately six inches past the outside edge of the verge board. As a result, all of the horizontal Gable end bracket, northwest gable members have rotted at the end away from the building that is exposed to the weather. While they serve but a small structural purpose, they are critical decorative elements of the Chateau.



Gable end bracket, northwest gable.



Typical decay of gable bracket end.

The rot at the ends of the brackets extends back toward the building past the intersection with the verge boards. The brackets and verge boards are notched to accommodate one another, and water is allowed to puddle at this point, decaying both members. This intersection is also directly above the intersection of the diagonal and horizontal members of the bracket. The end grain of the diagonal member is vulnerable at this point, and in some cases the member has begun to decay.

The verge boards present at the gable ends is formed by 2" x

8" dimensional lumber. These members meet at the peak of the gable, and are painted a reddish color that slightly offsets the color of the Port Orford cedar bark siding. These members are compromised only where they intersect the brackets, and there are pockets of decay at all bracket intersections. These pockets vary in size and severity throughout the

building. The paint on the verge boards has failed, allowing excess moisture into the boards.



Purlin and brackets, north side.

The peeled log purlins are present under the eaves, tying the rafters together. These members are painted to match the sheathing under the eave, and are in good condition throughout the building. They are supported by triangular brackets, and support the exposed rafter tails. The purlin brackets are peeled logs, left unpainted. The purlins are notched to receive the rafter tails.

Recommendations for Treatment: Brackets, Purlins, and Verge Boards

The brackets, purlins, and verge boards display various levels of decay. The purlins are protected from the elements, and as a result are in good condition. The brackets, on the other hand, have been subjected to the weather and require attention.

The treatment of these three elements varies, but is consistent throughout the building.

- The horizontal members of the log brackets are all in need of replacement. Excessive decay has rendered them useless as structural elements, and has diminished their decorative importance. The brackets should be removed from the building with care in order to perform this work, so the historic siding will be protected. The diagonal members should also be inspected at this time, and the decayed members should be replaced. The number of diagonal members needing replacement will not be known until the horizontal member is removed and the end grain can be inspected.
- All verge boards suffer from a compromised paint coating. They should all be scraped and painted in situ, while the brackets are removed for repair. Any areas of decay at the intersection of the verge boards with the brackets should be repaired using a "dutchman" repair in which only a small portion of the board is replaced. This will protect the historic fabric from unnecessary removal from the building.
- The under eave purlins are all in good condition. These peeled logs must retain the integrity of their paint coating to remain useful to the structure. The paint should be inspected on a yearly basis and repainted as necessary.

These elements should be properly maintained to serve their limited structural function, and also because they are primary decorative elements of the Chateau.



Verge board and brackets.

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PART IV

Exterior Assessment and Recommendations (continued)

Chimney (Exterior)

The chimney for the Chateau passes through the roof on the north side of the south wing, towards the west end of the structure. It is constructed of local marble, blasted from the building site. It is roughly squared and laid uncoursed. The chimney holds six clay tile flues, all visible at the top. The top is built up with concrete to form a slope to drain the water off the chimney top.

The chimney flues provide ventilation and exhaust for the two fireplaces in the lobby, the boiler, and the kitchen. These rectangular flues are not capped, extending only 4" above the top of the main chimney structure. Water is allowed to run down these flues, and this is visible in the first floor on the south wall. The vent stack for the boiler runs through this wall and into the base of the chimney, where water stains are apparent.

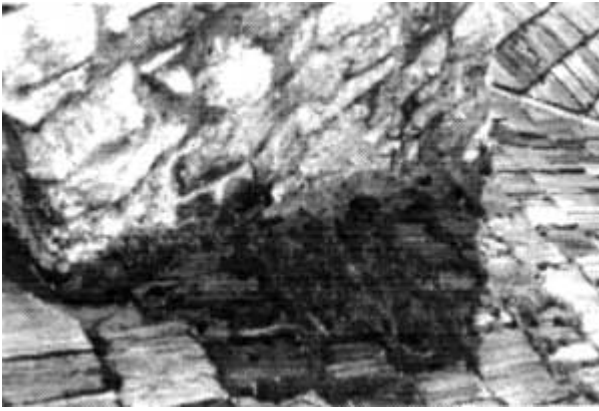


North side of chimney.



Sheet metal at south end.

The squared marble is laid up with a fairly hard mortar. Some minor cracking is apparent in the mortar joints, but none are larger than 1/32". The uneven surface of the marble has allowed a limited amount of moss to grow on the mortar, primarily on the east and north sides.



Growth and bituminous coating, north side.

The chimney is step flashed where it meets the roof on all four sides, including the south side where the sheet metal roof has been installed. This step flashing is woven into the shakes at every course, and is let into the mortar joints of the chimney. A bituminous coating has been applied to the north side of the chimney flashing, covering the flashing and lapping over onto the surrounding shakes.

Recommendations for Treatment: Chimney Exterior

The exterior portion of the chimney is in good condition overall, with only minor treatment necessary.

- It may be worthwhile to cap the chimney flues to prevent water intrusion into the building. This should be done in a manner that respects the historic character of the Chateau, and should not detract from the appearance of the building.
- A moss killer should be used to prevent the growth from damaging the mortar.
- The bituminous coating should be removed from the chimney flashing and surrounding shakes.

This would ideally be accomplished when the roof is replaced, and new flashing is installed. Step flashing and counterflashing should be employed to provide a weatherproof intersection between the roof and the chimney. The bottom layer of flashing should be woven in with the shakes, rising at least 4" above the top of the shakes. The shakes should overlap this base layer of flashing by a minimum of 4". The counterflashing should be let into the mortar joints of the chimney, and a mortar of compatible hardness and strength should be used to fill the joint after the installation of the counterflashing.

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PART IV

Exterior Assessment and Recommendations (continued)

Port Orford Cedar Bark Siding

The Chateau's siding is perhaps the character defining feature of the building's exterior. It consists of Port Orford cedar bark spiked to the sheathing below. It covers all of the Chateau's vertical surfaces, and is original. The siding gives the building its rustic, shaggy appearance, and must be preserved to retain the exterior integrity of the structure.

The base for the siding is 8" lap sheathing, laid horizontally and nailed to the light wood frame at the building's exterior. Building paper provides a barrier between the sheathing and the siding, and is present all around the structure. The bark is nailed to the sheathing using 16 penny nails at random locations. The bark itself is attached to the structure in uneven widths and lengths, custom fitted for each exterior element and opening.



Exposed sheathing at northeast corner.



Moss growth at southeast corner.

Overall, the siding is in good condition.

A few areas are experiencing damage from excessive moisture, particularly near grade level on the north, east, and south sides of the structure. The east side is experiencing the most problems, as the roof runoff is channeled into the central portion of the building where it runs off near the pond. Water is allowed to collect on the ground at this location, and as the building lacks a gutter system the water falls over two stories and splashes back onto the siding.

The north and south corners of the east side are also experiencing problems. The north corner is missing a small section of siding where the rock retaining wall supporting the road meets the building, exposing the sheathing underneath. The south corner at the retaining wall has moss growing on the siding that has spread from the retaining wall onto the structure. Excessive moisture and the natural effect of moss growing on the retaining wall both contribute to this growth. The moisture is a result of snow being piled in this area when the road is plowed. The moisture is slow to dissipate as the wall faces north and receives no

direct sunlight.

The south elevation, at grade level, has a number of small plantings between the building and the road. Moisture is trapped between these plantings and the siding, resulting in a microclimate that is damaging the bark. The siding in this area has a gray appearance, a more weathered look than the bark just a few feet above.

The north side is experiencing the same problem, but for a different reason. When the road is plowed, the snow is allowed to accumulate next to the structure. Heat escaping from the uninsulated building creates a similar microclimate, resulting in the same weathered gray appearance.



Siding fasteners.

Aside from these areas, there are limited places on the west façade that have gaps in the siding, potentially allowing moisture to enter the building. These areas

are at the intersection of the north and south wings with the central portion of the building, where the corners are slightly open. A few locations on this façade are also missing siding where the historic brackets for the wooden verandas were attached to the building. The west side is also experiencing problems at the enclosure at the stair leading to the basement. Runoff splashes back onto the siding off of the catwalk, and as a result the siding is experiencing a great deal of moss and lichen growth. This area also receives no direct sunlight, and is slow to dry.

A final observation on the Port Orford cedar bark siding is the use of steel nails for attaching the bark to the sheathing. These may have been galvanized originally, but now lack a protective zinc coating. If they are allowed to deteriorate and oxidize, the fasteners could create small pockets of degradation in the siding, loosening the bark and making reattachment through the historic holes impossible.



Growth at west stair enclosure.



Siding at road level, north side.

Recommendations for Treatment: Siding

As the siding is a character defining feature of the building, it should be preserved at all costs. The Port Orford cedar is becoming increasingly difficult to find due to a root rot that attacks the trees, and there is no suitable alternative for replacing the bark with another material. The rot is a disease of the Port Orford cedar only, and is caused by a pathogen named *Phytophthora lateralis*. This fungus infects the fine root system and moves up the tree, eventually killing it. It has only a limited distribution around the Oregon and California border in the tree's native range. It is spread by water, especially in the wet seasons within drainage basins, animals, and vehicles. The rot has infected the Siskiyou National Forest, but has not been detected within the Monument. The siding should be treated as follows:

- Protect the siding from excessive moisture. This includes improving drainage around the building and implementing means to avoid splashback on the structure. Snow should not be piled next to the building when the road is plowed on the north side, and the southeast corner should be kept free of snow accumulation. Vegetation on the south side is harming the siding, and should be removed.
- Fasteners should be inspected regularly to ensure that they are not forming pockets of deterioration as they oxidize. If this becomes the case, the fasteners should be replaced through the historic holes with stainless steel, aluminum, or galvanized fasteners. The tannic acid in cedar is known to decay steel, so an alternative material may be called for.

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PART IV

Exterior Assessment and Recommendations (continued)

Catwalks and Fire Escapes

The Chateau's catwalks and fire escapes are both replacements of original features. The original fire escapes featured log stringers with metal treads. These have been replaced with all-steel fire escapes on the west end of the north and south wings of the building. They have been painted a brown that is close to the siding color. As these are critical life safety devices and replaced original escapes in the same locations, they detract very little from the overall integrity of the structure.



The existing fire escape.



The existing catwalks.



Catwalk pedestrian surface.

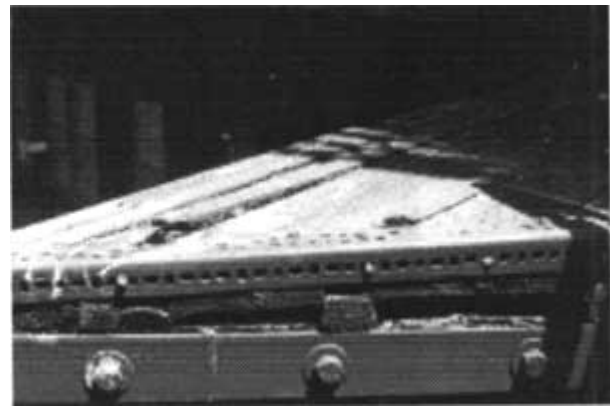
The catwalks replaced the wooden verandas in 1958. These are steel frame structures bolted to the building with wood deck material. The walking deck surface is 2" x 4" lumber turned on edge and assembled in such a way that every other board is missing to allow water to run through the catwalk. These are also painted brown to match the fire escape, but the paint coating has been worn away on the wood walking surface.

Recommendations for Treatment: Catwalks and Fire Escapes

As these are critical life safety implements, these areas

should be well maintained. They should be treated as follows:

- Retain the paint coating on both the catwalks and fire escapes so they blend with the building, contrasting colors should not be allowed.
- The wood deck of the catwalk is in need of paint, and the boards have bowed enough to create an uneven walking surface. The boards should be evened out and repainted to preserve them.



Uneven walking surface on the catwalk.

The catwalk installation following the removal of the verandas represents a significant loss on the west façade of the Chateau. The experience of the Chateau and visual impact would be heightened if the verandas were reconstructed using historic photographs and traces left on the building. The veranda was a character defining feature of the Chateau that was unfortunately lost, and although it would be expensive to replace the possibility should be considered to improve the appearance and character of the structure. Restoring this part of the building to its original condition would require a great deal of thought and care, but would be rewarding in that the building would once again appear as it did when it was originally constructed. The new veranda structure presents problems with respect to modern building codes. As Oregon has not adopted an historic building code, the reconstruction would have to meet modern codes. This could potentially require a steel structure with wood trim and column surrounds that matches the historic appearance of the veranda. A licensed designer must be employed to oversee this project.

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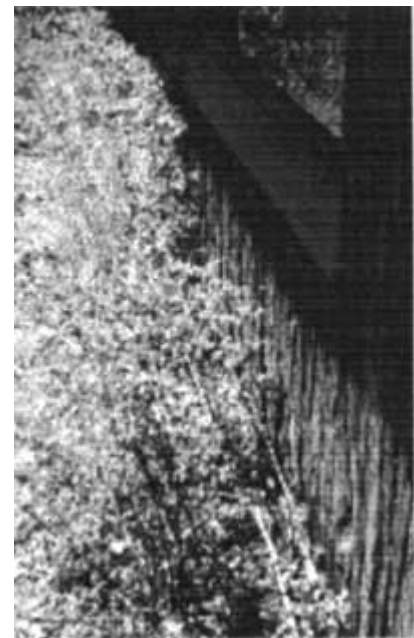
Vegetation and Drainage

The vegetation and drainage around the Chateau is causing some problems eluded to in [Part D](#) of this Section (Siding). Both are causing damage to the historic fabric by placing excess moisture on the Port Orford cedar bark. Vegetation on the south side to the east and west of the lobby entrance are creating a microclimate near the building, and as stated earlier should be removed.



East side drainage.

Drainage is another issue, requiring much more effort to remedy. This aspect is critical around the entire perimeter of the structure, as it lacks a gutter system. Currently the east side near the pool is the worst drainage problem. Water running off the roof collects on the ground between the sidewalk and the building, and splashes back onto the foundation and siding. A drain pipe is in place leading to the culvert that takes the majority of Caves Creek beneath the Chateau, but it is frequently clogged and not effective.



South side vegetation.

Proper grading could also benefit the Chateau. On all sides, soil is allowed to come into contact with the Port Orford Cedar cladding. These areas should be graded to prevent the soil from touching the wood cladding as it may accelerate the decay of the cladding.

The west side of the building is another area where drainage could be improved. The small terrace outside of the boiler room on the first floor retains a good deal of water, and the drip line is easily apparent in the soil.

Recommendation for Treatment: Vegetation and Drainage

- Remove intrusive vegetation on the south façade of the building, and improve grading at all sides.
- Install a french drain system of gravel beds and perforated pipe on the west side, allowing the

water to drain out into the canyon below the building and join Caves Creek.

- Install a similar drain system over the full length of the east façade, bringing water away from the building to a central drain pipe. This pipe should join the culvert already in place that diverts Caves Creek, and be designed in such a way that it does not easily clog or back up. This area is critical, as proper drainage will preserve the siding and prevent water from infiltrating the building through the foundation.

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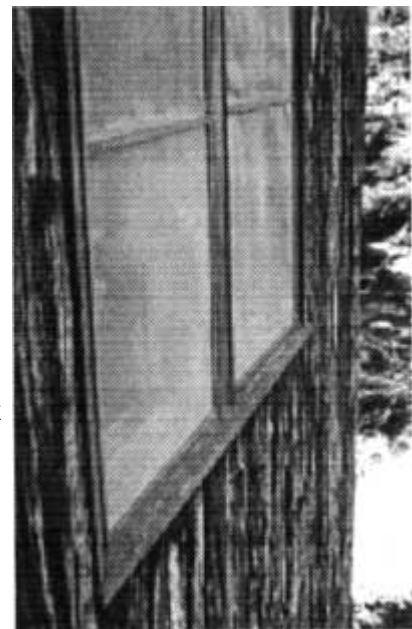
Exterior Assessment and Recommendations (continued)

Windows and Doors (Exterior)

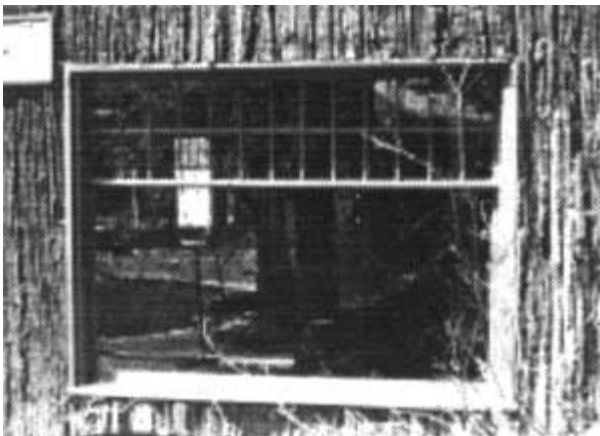
The openings in the Chateau at the exterior have received only modest alterations. Three doors were removed and replaced with windows on the west façade when the veranda was taken down in 1958, and one window was enlarged during the coffee shop remodel in 1954. Aside from these changes, the original windows and doors are intact throughout the structure.

The windows are a combination of types, ranging from large fixed panes to double hung sashes to casements. In all cases the historic sills and surrounds are intact, painted the same reddish brown as the verge boards. Removable screens are present on many of the double hung sash windows, exterior attached to the building with a hook and eye bolt system that fixes the screen in place.

Even though the majority of the screens are intact, a few have been damaged. Damage includes the separation of the frame members, holes in the metal screening, and damage to the frame from the installation process or from the screen coming loose from the eye bolts. There are a number of screens on the sixth floor windows that are lying on the roof itself, having come loose from their attachment points.



Typical exterior sill and screen.



Typical fixed window.

The window sills are formed by dimensional lumber set on an angle to shed water away from the building (i.e. they are weathered). No drip edge is present on the bottom side of the sills, and they project out from the building to varying degrees due to the irregular nature of the cedar bark siding. The sills and surrounds are all painted, but the paint coating is beginning to fail in the majority of cases. One sill is missing altogether. At the west end of the north wing on the second floor, there are three rooms used for employee housing. The center room is missing the sill from the southern window, allowing a great deal of air into the structure and making the space very hard to heat during the cold winter months.

The historic doors are present at many locations in the building, including the lobby entrance, dining room and coffee shop entrances, fifth floor fire doors, boiler room doors, third floor catwalk doors, fourth floor catwalk doors, and the kitchen and second floor doors to the exterior. New doors have been installed in the sixth floor openings leading out to the fire escapes. These are not full size doors, and fit within the opening of what was once a double hung window.

All of the doors are in good condition. The door out onto the fire escape at the fifth floor level of the south wing was inoperable at the time of the inspection (March, 1999). The concessionaire's maintenance supervisor stated that the door swells during the winter months, and when it dries it is fully operational.

The lobby entrance doors are experiencing slight problems. Constructed of tongue and groove boards laid vertically with a steel bar at the inside edge of the east door, the doors have been re-hung on non-historic hinges. The doors originally pivoted on brass pins set into the head and jamb of the door, but now swing on modern hinges attached at the side jambs. The eastern door, which receives the most use, is bowing outward at the top on the west side. This prevents the door from providing a good seal, allowing air infiltration. However, the door is still fully operational.



Lobby entrance doors. Note the bow.



Sill north of the Coffee Shop door.

The rest of the exterior doors on the Chateau are in good operating condition, with no deficiencies except the damage to the paint. The kitchen and boiler room doors are particularly subject to this, but they are out of the public view and receive less attention. New door hardware has been added to all of the exterior doors in the form of locks and handles. This provides a greater measure of security for the structure, and has generally been installed with a good level of respect for the historic door fabric.

Recommendations for Treatment: Exterior Doors and Windows

The doors and windows of the Chateau essentially suffer from deferred maintenance. For recommendations on glazing, glass, and frames see the windows section of the interior assessment. The exterior recommendations are as follows:

- Replace the missing sill on the second floor, west end of north wing. This missing element allows air and moisture to infiltrate the structure, and is a potential cause for damage to the building.
- Scrape and paint all exterior sills and frames. The sill to the north of the coffee shop door will require patching to make the surface flat, as the wood from the 1954 window addition is seriously weathered.
- Scrape and paint the exterior doors in the non-public areas of the building, including the doors on the west façade leading to the kitchen, second floor storage area, employee dining room, and boiler room. This will preserve the historic fabric and reduce the likelihood that these doors will

need replacement.

- Remove the bow from the lobby entrance doors. The door will most likely have to be disassembled to accomplish this, and wood or metal bracing may be necessary to straighten the door.
- The concessionaire has expressed an interest in restoring the historic hinge mechanism on the lobby entrance doors. A variety of pin hinges that mount in the head and threshold are available, but a brass mechanism should be used to reduce the risk of corrosion and to match the historic hardware.
- Exterior window screens should all be firmly attached to the window frames using the eye bolt and hook hardware. Each frame should be removed from the building and inspected for loose joints and holes in the screening, then repaired and painted as necessary before re-installation.

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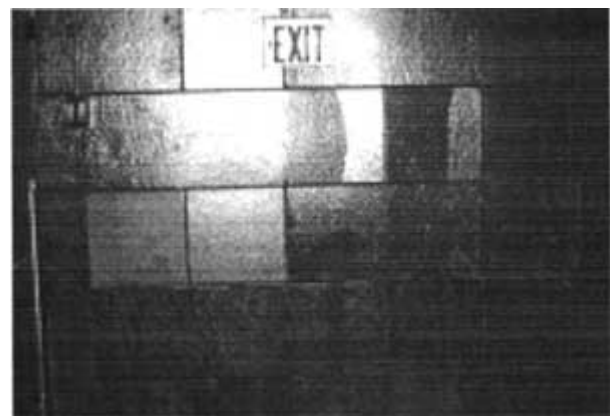


PART V

Interior Assessment and Recommendations

Fiberboard Wall and Ceiling Finishes

The Chateau's wall and ceiling finishes are fairly uniform above the second level. The dining room and lounge area, main lobby and office, main staircase, and all of the guest rooms are clad with a fiberboard product. The board was sold under the trade name of "Nu-Wood" by a manufacturer in Kloquet, Minnesota. The product was relatively new to the west coast when the Chateau was completed, according to then Manager George Sabin. The product is sometimes referred to as Celotex, which was actually a name brand fiberboard of the era and not the product used in the building.



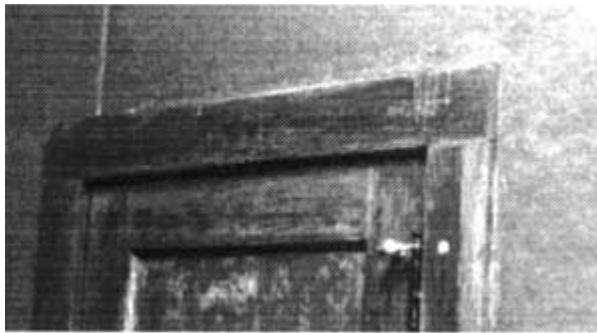
Typical interior hallway. Note the mismatched replacements.

The fiberboard panels used in the Chateau vary in size, but there are two main sheet sizes within the building. The walls and some ceilings are finished with 4-foot by 10-foot panels, cut down to fit as required. This allows all of the wall panels to span from floor to ceiling in the guest rooms, as well as from the wood wainscot to the ceiling in the lobby and dining rooms. The second size of panels is 16" wide by four feet long, used strictly on ceilings in the lobby, dining room, and some of the guest rooms. These sizes allowed the 1/2" thick panels to be conveniently nailed to wall studs and floor joists, both spaced at 16" on center.

The Nu-Wood panels feature varied incised designs. The large wall sheets in the guest rooms are slightly beveled around all four edges, with a 3/16" wide by 1/8" deep bevel. The smaller ceiling panels are divided into three sections by v-shaped grooves running across the width of the panel, 3/8" wide by 1/8" deep. The sheets are laid parallel to the direction of the joists, and nailed only at the outer edges. The large wall sheets in the dining room and lobby have reveals running longitudinally, but they are 1/4" wide and 3/16" deep. These are randomly spaced across the width of the panel to simulate the appearance of random width vertical board siding.

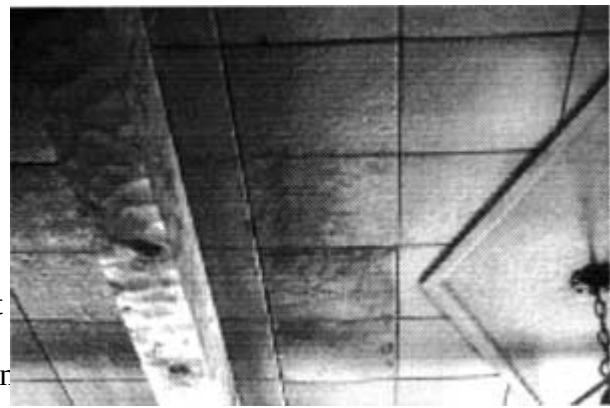
The panels are strictly an interior finish product. They are extremely susceptible to water damage and staining, which mars the appearance of the panels and causes them to disintegrate, as with many fiberboard products. The panels have also been subjected to impact damage in various locations throughout the building. The Nu-Wood was originally installed without a protective

coating of any kind. In 1989 a fire retardant glaze was applied to the panels to increase their fire rating. The product, manufactured by the American Vamag Company is known as "Albert DS". On unfinished surfaces it is to be used with an undercoat, manufactured by the same company.



Glaze slopped onto door trim.

The fire retardant glaze significantly altered the



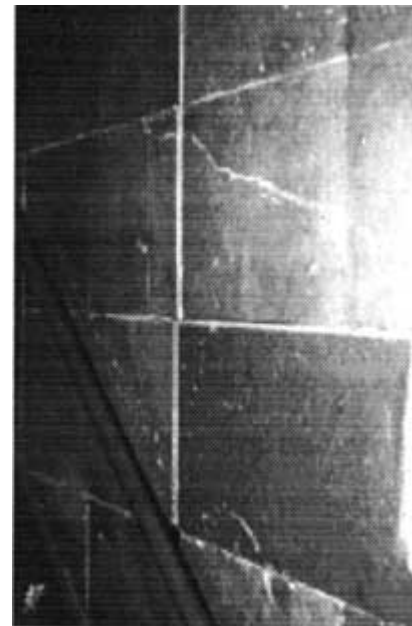
Water damage at the lobby ceiling.

appearance of the panels, darkening their color and producing a shiny surface. The glaze is showing defects unassociated with the other damage to the panels. When applied, the glaze provides a thick coating, resulting in an increase in the fire rating of one hour. It should be

applied in a number of coats, building up to the appropriate thickness. How the current glaze was applied exactly is uncertain, but it was applied with either a brush or roller. Careless application has resulted in the glaze slopping over onto interior trim, especially at the heads of doors and windows.

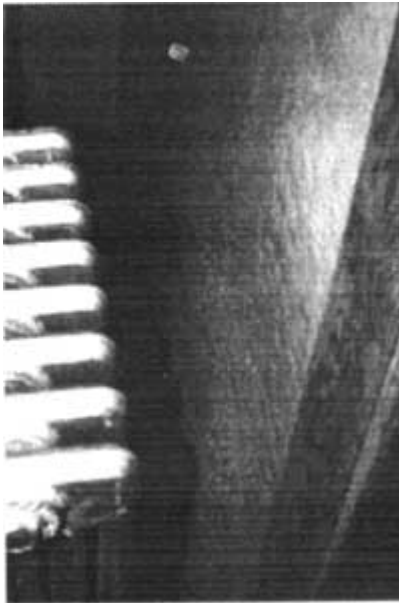
The thickness of the glaze and method of application has resulted in an uneven and bumpy appearance in many parts of the building. This is especially apparent in the guest rooms, which have only one central light fixture. The thick glaze has also developed a network of cracks in certain areas, similar to the crazing found in terra cotta glazes. Behind the radiators and above the electric baseboard heaters, the glaze has clouded over, most likely due to excessive heat.

In addition to the problems with the fire retardant glaze, the fiberboard panels have suffered impact and abrasion damage. In the guest rooms, the impact damage can often be attributed to door knobs, as many of the stops are missing. In hallways and utility or linen closets, the damage is typically caused by housekeeping carts, rollaway beds, and other typical hotel equipment. Some of these areas have been patched with a replacement piece of Nu-Wood, either surrounded by small pieces of wood trim or left with the joints exposed. Many others, especially impact damage from door knobs, have been patched with wood putty. To make repairs in the public areas of the building, the concessionaire has removed panels from areas only open to employees, such as the office behind the front desk. The walk in freezer in the kitchen was placed in an opening historically used as an access to the coffee shop, and panels from the ceiling above the freezer have all been taken and placed in locations throughout the building to repair damage.



Abrasion damage at the stair.

The panels also show signs of water damage, especially in areas under bathrooms on the floors above. When a leak develops, often the only way the concessionaire becomes aware is from water damage to the Nu-Wood panels. This damage is permanent and irreversible, unless the panel is painted over once it has dried. The areas under the window sills, particularly on the 6th floor on the west



Glaze damage behind radiator.

side of the building also show signs of water damage. A recent article in the APT Bulletin (Vol. 28 #2-3) notes that "the best conservation technique is careful maintenance...finishes must be maintained, and problems must be addressed immediately. Once the boards are warped or deeply stained, the likelihood of successful repair seems remote." (Page 67)

The 16" x 48" ceiling panels are placed either parallel or perpendicular to the damage joists and rafters above. Those that are placed perpendicular are experiencing sagging, as they are typically nailed only at the ends, with possibly one nail at each intersecting rafter or joist. This problem is apparent at the sixth floor, and at other locations in the lower guest rooms. The panels are attached with 4-penny finish nails without heads, and these have pulled through the panel itself in some of these locations, leaving the Nu-Wood to span 48" without intermediate support.

A few areas of the fiberboard have been painted to cover earlier damage with a color closely resembling the color of the glaze coating. Many of the sink surrounds, especially on the sixth floor, that still employ Nu-Wood have been painted white to avoid water damage. Room 214 is also painted entirely white due to a concession manager's cats that wreaked havoc on the historic wall surfaces.

Recommendations for Treatment: Fiberboard Finishes

The appearance of the fiberboard is currently not historic, even though the majority of the historic fabric is in place. The alteration was a life safety issue, but has become an aesthetic issue and a debate over the treatment of the historic fabric. A balance must be found between the preservation of the historic fabric and the realistic aesthetic concerns of the concessionaire. The interior appearance has a potentially direct effect on the occupancy rate of the hotel. The following recommendations are made:



Painted sink surround, 6th floor.

- Re-attach all sagging and loose historic Nu-Wood using small (4d) finish nails to replicate the original installation.
- If replacement becomes necessary, remove pieces from the non-public areas of the building that have already been stripped of some of their historic fabric to supply the public portions of the building.
- When replacement supplies are exhausted, replace the historic Nu-Wood with a compatible modern fiberboard product. Replacement in kind is not an option for the Chateau, as Nu-Wood has not been commercially available for some time. It has been out of production for at least 35 years, as replacement pieces for flood damaged areas could not be fabricated from the original product. The replacement material should match the historic in texture, color, composition, and detailing. The beveled edges and v-grooves must be cut into new replacement pieces to match the historic appearance of the panels.

- One possibility should be considered if new material is to be introduced into the building. Historic fabric from one room may be sufficient to repair many areas of the building, if used and appropriated carefully. Removing all of the historic fabric from one room and replacing it with new material should be considered, as the new room would have a consistency in finish that may not be possible with piecemeal replacement. The historic fabric in other areas of the building could be retained under this option, and one room's historic fabric would be affected, instead of many areas of the building.
- The use of paint to hide water damage has been employed in some areas of the building. Unattractive portions of the building may be painted to hide this staining. Natural divisions should be maintained between painted and unpainted wall surfaces. For example, where the walls have already been painted, one entire wall plane is painted up to a corner or projecting element. This strategy has been employed in the dining room and many of the guest rooms. This strategy would conserve the historic fabric, but not the historic appearance (which has been significantly altered by the application of the glaze). A matte finish paint should be used if the fiberboard surfaces are painted, in keeping with the historic character of the fiberboard.
- It must be remembered that the Chateau is a National Historic Landmark sited on National Park Service property. Any alteration to the historic fiberboard wall finishes must undergo a Section 106 review to determine the impact on the historic resource. Cooperation will be required between the concessionaire, NPS, and State Historic Preservation Office to mediate some course of action. Work affecting the historic fabric must not be performed without the guidance and approval of the NPS and SHPO.

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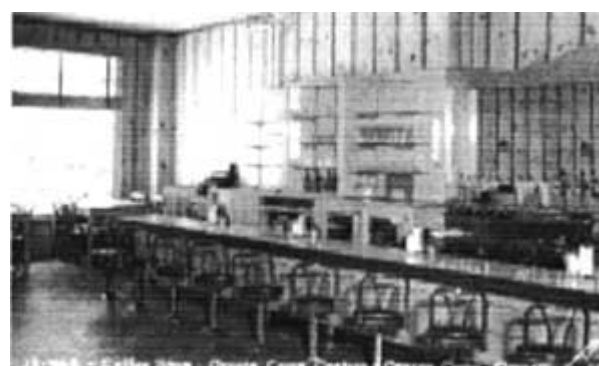
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Interior Assessment and Recommendations (continued)

Other Wall Finishes

Aside from the fiberboard and concrete wall finishes described in other portions of the interior assessment, there are three other prominent historic wall finishes employed in the Chateau.

The first of these is present only in the kitchen area. A three-coat plaster system is present on the walls and ceiling of this room. The ceiling has been covered by acoustical tile, but the historic plaster is present under the tiles. A missing tile in the north end of the kitchen reveals the wood lath and three-coat system. The interior of the dumbwaiter also exposes the lath used in the walls, which is wood. The wall plaster is in good condition, and has received excellent treatment, as the area must be kept clean for food preparation.



Knotty pin in the Coffee Shop.



Replacement wainscot in the dining room.

The coffee shop, adjacent to the kitchen on the third floor, holds the second of these three finishes. Knotty pine paneling is used on all of the walls in this room. Eight-inch wide boards are laid vertically, with beaded moldings incised into the edge of each board to enhance the decorative character of the pine. The boards run from floor to ceiling, and are covered at the base by a 12" molding, installed after the 1964 flood stained the walls. These panels are in excellent condition, with only minimal signs of wear.

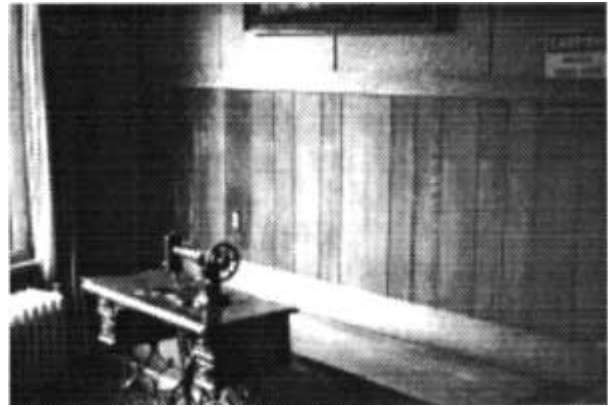
The
third

finish is present in the dining room, lounge area, and lobby of the Chateau. Beneath the fiberboard paneling, a five-foot high wainscot surrounds each of these rooms. This wainscot is formed by vertical planks of redwood of various widths. The wainscot in the lounge section of the third floor (where the dance floor was originally) was replaced after the 1964 flood, and the materials had to be specially ordered. A narrow wood strip, stained to

match the wainscot, caps this section of the wall finish. The wainscot on both levels is in good condition, with the exception of a limited amount of abrasion from furniture in both the lobby and lounge areas.

Recommendations for Treatment: Other Wall Finishes

These three wall finishes are in good condition overall, and should be maintained to ensure the longevity of the historic fabric. The plaster in the kitchen should be patched with a three-coat system and finished to match the historic fabric surrounding the patch. The knotty pine and wainscot should receive maintenance as required, but furniture should be kept a short distance (approximately one foot) from the wall to avoid potential abrasion.



Original wainscot at the lobby level.

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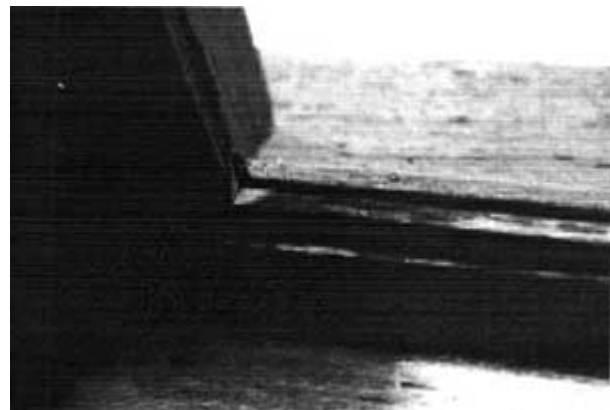
Interior Assessment and Recommendations (continued)

Windows (Interior)

The windows in the Chateau create a link to the surrounding natural world, with a character that matches the style of the structure. Double-hung sash windows, casement windows, fixed windows, and hopper windows are the four types found in the building. The window types are generally determined by the use of the room in which they are located. The windows are all original to the structure, with the exception of four fixed windows. Three of these were installed when the verandas were removed in 1958, two on the fourth floor and one on the third. The window to the north of the coffee shop door was altered when the space was remodeled, and a large fixed window replaced two double-hung windows in the same opening.

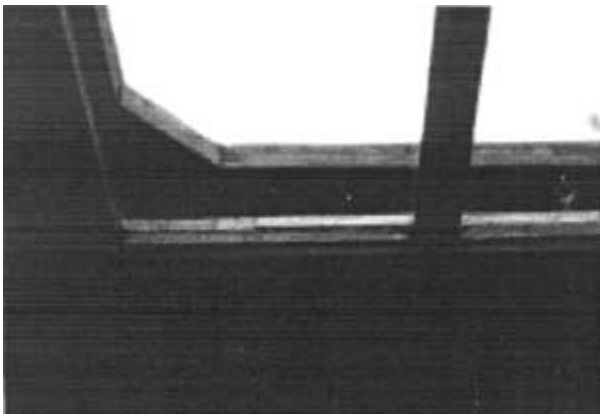
Fixed windows are the dominant type in all of the public areas of the building. The lobby, dining room and lounge area, coffee shop, and main staircase all have large fixed panes topped by a series of smaller panes. The arrangement of the smaller panes is dependent on the size and location of the window, with one row of small panes over the large pane in the dining room, lounge area, and the upper landing of the main stair, and two rows of small panes over the large pane in all the other instances. The exterior finish on the window frames is paint, which matches the verge boards and sills mentioned previously. The small panes have glazing putty on the exterior, painted to match the surrounding frame. The interior finish is typically varnish on both the sill and the frame.

Slight problems exist in the fixed windows. The glazing is beginning to fail in most cases at the smaller panes, and is cracked or beginning to come loose. The interior finish is deteriorating at the bottom of the large pane in all cases. This deterioration is focused around the nails holding the frame in the opening. The nails are beginning to oxidize, resulting in wood degradation around the nails. The finish is failing at this point as well, and the failure is spreading outward from the nails. One window in particular needs mention. Due to the lean in the building, the frame of the lobby window that faces north (the only one that does) is out of square. The large fixed pane no longer fits within the frame, and small gaps have appeared at the top of the west end and bottom of east end. These gaps are currently filled with clear silicone caulk.



Finish deterioration and degradation at a fixed window.

Fixed windows occur in only one other situation within the Chateau. In the 6th floor guest rooms, in the center



Missing glazing at a 6th floor fixed window.

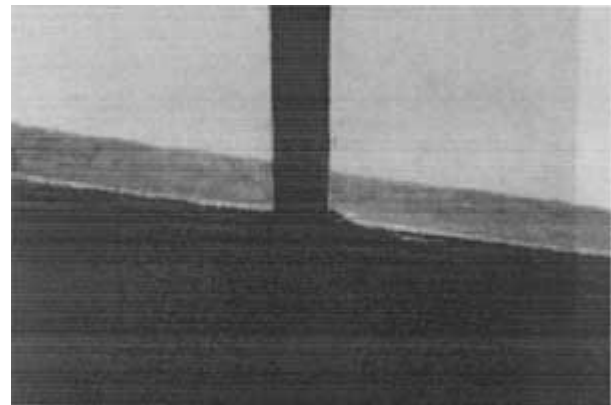
match the surrounding casements.

trapezoidal section of the building, two casement windows flank a multi-pane fixed window. These windows are painted at the exterior in the typical color, but are stained green to match the doors and other interior woodwork on the inside. These windows typically display signs of putty deterioration at the exterior, and finish problems occasionally on the interior at the sill level. The putty in the bottom panes has deteriorated more rapidly than the top panes, as they are more protected. Moisture is infiltrating these windows at the bottom rail, resulting in mildew or fungus growth in some instances. The fixed portion in room 302 has been either refinished or replaced, as the finish does not

Inswinging hopper windows exist over existing doors to the exterior or at the location of historic doors onto the veranda. The main lobby door, french doors in the dining room, and historic veranda doors all have these windows. All retain their historic hardware, and are operable. The hopper above the dining room doors is missing some of the trim that holds the glass in place, as this window is constructed without exterior putty to hold the glass in place. The window at the historic location of the door to the veranda does have glazing putty to hold the glass in place, and it is in good condition. However, the interior finish is failing at the bottom of this window. The historic door location in the lobby is constructed the same way, and is in the same condition. The main lobby door's glazing putty is also in good condition, but the paint is beginning to blister.

Casement windows are typically located in the guest room baths, and in the guest rooms themselves on the 6th floor. These, typical of the Chateau, are true divided lite windows. The exterior finish is paint, and the interiors are typically painted in the bathrooms and stained green in the main portions of the guest rooms. Two casements exist in the public areas of the building, at the upper landing of the main staircase. These two windows flank the central fixed window, and are painted at the exterior and varnished at the interior. The northern casement at this location has a broken pane.

The original hardware typically exists on these casement windows, but it is causing damage to the frames. The windows are closed with the hardware in the locked position, and the wood frame is marred. Other casement problems are the glazing putty, especially in the windows on the 6th floor. These windows are also experiencing fungus growth and finish deterioration due to excess moisture. These frames, especially in rooms 301 and 306, are beginning to separate at the joints in the outside frame and intersections of muntins and mullions. Since these 6th floor casements swing inward, there is damage from the window hitting the radiator in room 303.



Fungal growth at a 6th floor casement.

The bathroom casement windows are typically smaller, only 6-lite rather than 8 or 9-lite. These windows swing outwards, exposing the interior to the weather. Four of these bathroom casements have arched tops, and are present on the 6th floor in the north and south facing gable ends. Moisture in all of the bathrooms has caused the casement paint to blister, and the water trapped between the sill and the bottom rail has caused the bottom rail to deteriorate in room 202.

Double-hung windows dominate the rest of the structure. In the guest rooms, these are stained green to match the other interior trim and painted at the exterior. In the lower levels (floors 1, 2, and kitchen), the windows are painted on the interior as well. The double-hung windows have the original hardware and sash cords in place throughout the building, and are all operable. The problems that exist in these windows are typical throughout the building. The putty is cracking or missing in almost all cases, the latch hardware has damaged the muntins of the upper half, and the finish is deteriorating at the joints between the muntins and mullions and where the mullions join the meeting rail. Some of the interior sills have been refinished with a paint that does not match the historic stain, and in limited instances in the bathrooms and on the 6th floor the interior sills have suffered water damage and are deteriorating.

Recommendations for Treatment: Windows

As many of the windows exhibit similar problems, the work includes the vast majority of the windows in the structure. The following recommendations are made:

- Inspect and repair the glazing putty at each window. The putty should be painted after it has cured to match the surrounding frame.
- Re-finish the windows at the interior where the paint or stain has blistered or failed. The stain should match the original in color and hue.
- Sand and revarnish the bases of the fixed windows on the interior. The depth and color of the varnish should match the existing finish.
- Scrape and paint all exterior window frames. The paint color should match the historic color.
- Scrape and paint all interior bathroom window frames.
- Remove and re-glue all loose window frame elements. This work should be complete before other work is performed on the window.
- Replace the trim holding the glass at the dining room's hopper window over the french doors. The contour should match the historic trim, and the new pieces should be painted to match.
- Custom cut one piece of glass to fit the opening of the north facing lobby window. Install the new glass before other work is performed on this window.
- Scrape and paint all interior bathroom sills. In areas of decay, a dutchman repair is necessary to preserve the historic fabric.
- Hardware damage at the double-hung and casement windows should only be repaired using a dutchman repair. Wood putty or other methods of repair should not be used.

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PART V

Interior Assessment and Recommendations (continued)

Interior Doors

The interior doors of the Chateau fall into roughly four categories: guest room and closet doors, fire doors, kitchen and coffee shop doors, and non-historic accordion-style doors.

The lobby office door and the opening between the coffee shop and dining room both have non-historic accordion doors. These doors run on tracks mounted to the timber frame above each opening, providing a measure of privacy for these service areas of the building. Both are in good working order, and are constructed with faux wood grain panels that do not match the historic character of the Chateau.

The kitchen and coffee shop doors are replacements of the originals. These four are hollow core modern doors. The doors between the kitchen and coffee shop are hinged to swing in both directions, and form a set of double doors. The doors between the kitchen and dining room are hung individually, each swinging in only one direction. Each is a one-way door, with the door into the kitchen on the west and the door into the dining room on the east. The historic doors functioned in the same manner, but were two panel doors matching the doors in the guest rooms.

The fire doors were added to the structure on the fourth and fifth floors. These steel doors are hung in walls added at the same time, as described in the Chronology of Alterations. These doors are in good working order, and are closed at all times. While they detract from the historic character of the Chateau, they are a life safety issue that was deemed necessary at the time of installation.

There are two types of doors present in the guest rooms. Conventional hinged doors form



Typical Chateau fire door.

the entrance to each room, and also lead



Typical guest room door.



Typical guest room door hardware.

into the majority of the bathrooms. These are two panel doors, stained a green color. The surrounding trim is comprised of simple boards, stained to match the doors. The door lock and handle hardware on the entrance doors to the guest rooms is not original on the vast majority of doors, as new locks have been installed as a security measure. Some doors retain their historic handles and plate, but the locks are all replacements. The historic hardware has been moved in all instances to accommodate the new locking mechanism.

The second type of guest room door is a pocket door, located between the rooms of all of the suites in the hotel. A limited number of bathroom doors are

also pocket doors. These pocket doors are stained to match the other guest room doors, and are either two panel doors like the entry doors, or are solid single panel doors. All of these pocket doors are in good operating condition, with their original latch and track hardware intact.

The guest room doors are also affected by the lean of the building in the north wing. Doors on the fourth floor in rooms 102, 103, 104, and the linen closet on the south side of the hallway do not operate properly because of the lean in the walls, and two of these doors have been cut down to fit the irregular opening. The closet door in 104 and the door between 102 and 103 have been shaved down at the top and bottom to fit the door frame and retain some measure of operation. The closet door in room 102 will only open 1/2 way, jamming against the floor.

Recommendations for Treatment: Interior Doors

The four categories of interior doors present different preservation needs. The non-historic accordion-style doors should not receive any preservation treatment (except removal), and the historic guest rooms doors should receive the most attention. The recommendations are as follows:

- Remove the non-historic and non-compatible accordion style doors from the lobby area and the doorway between the coffee shop and dining room. If a door is absolutely necessary at these locations, a door matching the historic character of the Chateau should be designed and installed. The installation of doors in these locations should impact the historic fabric as little as possible, and their introduction should be easily reversible.
- The fire doors should be maintained as a life safety device. The paint color of the doors should be kept as close as possible to the color of the guest room doors so the presence of the steel doors is minimized.
- The guest room doors should not have any more holes drilled in them. Relocation of the door hardware has resulted in many new holes in each door, some of which are hidden by the door plate. If new locks are required, they should conform to the openings that currently exist in the doors.

- Doors that do not operate should not be shaved down to fit the opening or swing pattern. This treatment of the historic doors is completely irreversible. If the doors do not operate properly, temporary doors matching the historic doors in design and appearance should be substituted until the lean of the building is dealt with in some fashion. The historic doors that are removed should be stored in a secure location to be used as replacements for other historic doors that may be damaged beyond repair.
- All doorstops must be installed and functioning correctly. The doors are causing impact damage to the fiberboard wall finish, and incorrectly positioned or installed doorstops are also causing damage to the doors themselves. All doors should be inspected for stops attached to the base molding on the wall behind the door. These stops must stop the door short of impact with the wall, and should have a cushioned head to prevent damage to the door. Doorstops mounted on the hinges of the door are marring the finish of both the door and the trim, and are not historically appropriate for the Chateau.

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PART V

Interior Assessment and Recommendations (continued)

Heavy Timber Frame

The Chateau's heavy timber interior structure allows for the vast open spaces in the lobby, dining room and lounge, and coffee shop. This portion of the structure rises from the floor of the second floor through the third and fourth floors, terminating at the floor joists of the fifth floor. The main columns, measuring approximately 30" in diameter, support the main cross members running east to west through the structure. Secondary cross members run north to south over these, providing support for the floor structures of the third, fourth, and fifth floors. The columns bear on the concrete walls of the first floor, the spacing narrowing as the walls and gorge taper towards the east. The subtle gray color of the columns is due to airborne particles of cement that settled on the wood when sacks were beaten against them during construction.

The main cross members, bearing directly on the top of the columns, measure approximately 18" x 24". All joints in these members occur over columns, and are covered with applied wood decoration that simulates traditional joinery but serves no structural function. This decoration is mounted with metal spikes behind the phony wedges and loops. The secondary cross members are attached to the main members with mortise and tenon joints at each end. The tenon is almost the full dimension of the secondary cross member at these joints.

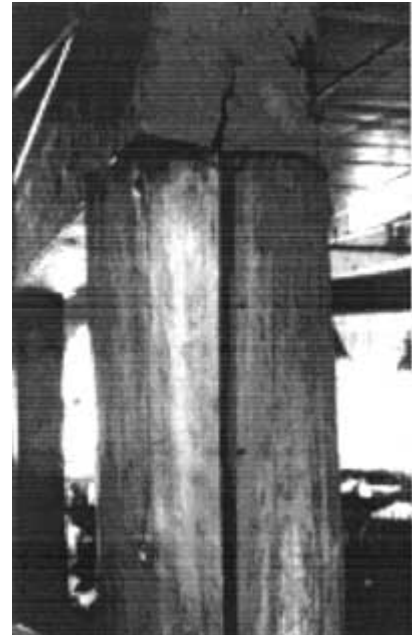


The heavy timber frame **Simulated traditional joinery in the lobby.** has been altered in two locations. During the 1954 remodel of the coffee shop, the column in the center of the room was replaced with a smaller diameter steel post to facilitate patron circulation. A steel plate is welded to each end of this post to provide bearing. The 1964 flood caused the collapse of the dance floor, and the main cross member (running east-west) at the south side of the north wing was replaced at the east end by two laminated beams resting on the original column. The east end of this replacement beam bears on the original shelf in the concrete foundation. The foundation has engaged rectangular concrete columns at the second floor level on the east and west walls with a notch to fit the end of the beams.



Typical heavy timber column.

Taken as a whole, the heavy timber system is sound. There are only three areas of concern in the system, based on a visual inspection. In the dining room, the columns at the north end near the creek diversion are experiencing potentially serious checking. There is no lateral displacement of the overhead beams at this location, but the check runs almost all the way through the column and is approximately 3/4 of an inch wide at the outside edge. The beam above this column running to the east is also experiencing moderate checking.



Check in dining room column.

Where the column was replaced in the coffee shop, there is lateral displacement of the main beams. These beams seem to be shifting on the steel plate, and not bearing evenly. The beam to the west of this column has been bolted together, as it was seriously checked. The third area of concern is in the lobby. At the north end of the reception desk, the beam to the east of the column at the corner of the desk is checking moderately.

A final note on the heavy timber in the lobby is that the columns are experiencing slight checking, but are suffering more from abrasion damage by chairs and objects carried through the space.

Recommendations for Treatment: Heavy Timber

While the heavy timber system appears to be performing well, there are a few areas of concern. The recommendations for the system are as follows:

- An engineer should be employed to inspect the three locations where moderate to serious checking is occurring. These are located in the dining room and lobby, as mentioned above. The members should be analyzed to determine if they are performing as they should, and are able to carry their load. The members may need to be repaired or reinforced as required, possibly by bolting. The bolts in the coffee shop beams are intrusive and non-historic, and should have been installed in a more sensitive fashion. Recessing the bolt heads and inserting wood plugs over the bolt heads would make them less intrusive.
- The columns in the lobby should be protected from abrasion, as it is destroying the historic finish on these members. Chairs should not be placed near the columns, and objects such as ladders and other maintenance equipment should not be leaned on the columns to rest.

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Attic Space

There are a number of attic spaces in the Chateau due to its complex roof forms. Lower attics are accessible through small doors in the ends of the sixth floor hallway, doors in rooms 305 and 311, and also through the bath rooms in rooms 305, 311, and 312. The main attic above the sixth floor ceiling is accessible through either of two hatches in the hallway ceiling. The hatches are recessed in the ceiling, and have the appearance of multi-pane skylights. However, the top side of the hatches are covered with plywood painted a dark gray so that the attic is not visible from the hall. The hatches have no hinge or latch mechanism, and must be lifted off of the frame and slid into the attic space for access. An electrical conduit just west of the hatch openings has caused abrasion damage and marring on the underside of the hatch, as it gets slid over the conduit and out of the way.



The main attic space.

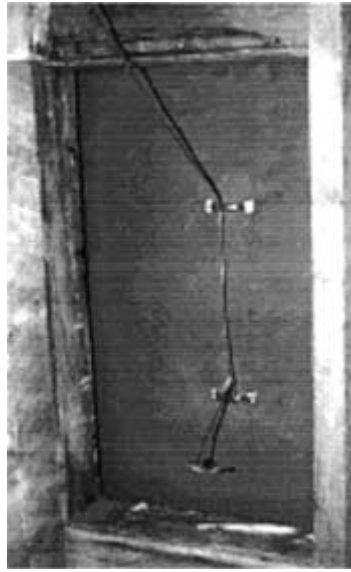
The roof framing and ceiling structure of the sixth floor are visible in the main attic. The rafters are full dimension 2" x 6" rough cut lumber, 24" on center. The rafters meet at the ridge, and there is no ridge member. The joists are 2" x 6" lumber as well, but spaced at 16" on center. The gaps between the joists have been filled with R-19 fiberglass insulation to hold the heat in the building.

Two small dormers project from the east and west sides of the main attic space. These are framed with modern 2" x 4" planed lumber, and were added with the sprinkler system in 1950. The east dormer houses a loudspeaker, and the west dormer houses a large floodlight. The openings in the dormers are louvered panels, without screens.

The ends of the main gable have triangular openings, also covered with louvered panels. Wasp nests on the rafters and sheathing are apparent at both



The south attic hatch.



Roof access hatch wired to sprinkler.

the north and south ends of the building, as the insects are able to enter the attic space through the louvered panels.

The lower attic spaces are constructed in the same fashion, but meet vertical wall surfaces. The diagonal members are tied into the wall studs. Where the main attic space lacks flooring, the lower attics accessed from the small doors in the sixth floor hallway have rough lumber serving as a floor surface, allowing storage within the spaces. All of the attic spaces are dry, and show no signs of water infiltration.

Recommendations for Treatment: Attic Spaces

The main danger to the attic spaces is water infiltration that can weaken the roof structure. The space is dry, even though the roof is in need of repair. The recommendations for the attic spaces are as follows:

- Place screening over the louvered vents in the small dormers and gable ends to prevent insects from entering the building and constructing nests.
- Develop a hinge system for the main attic hatches. The hatches, especially the one at the south end of the hall, are being marred by the conduit near the opening. Hinging the hatches would protect the historic fabric and reduce the likelihood of accidental damage to the hatch cover.

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PART V

Interior Assessment and Recommendations (continued)

Main Staircase

The main staircase of the Chateau provides the primary visitor circulation between the third floor and the fifth floors of the building. It is located in the center of the east wall of the trapezoidal section of the building. The staircase construction is based on the heavy timber frame of the Chateau, and the motif is carried through this section. Two separate flights lead up from the dining room and historic dance floor area to an intermediate landing, where one flight rises to the west up to the lobby level. The stair ascends from the lobby to the east, reaching an intermediate landing directly above the lower landing. The stair turns again, rising to the west and up to the fifth floor level.

The stringers for the stair are made from peeled Douglas fir logs. These logs are approximately the same size as the heavy timber posts, nearly 30" in diameter, and are notched to receive oak treads. Peeled log newel posts are bolted to the north-south heavy timber members supporting the lobby floor, intermediate landing, and fifth floor. The railing is constructed of madrone balusters, held in place by a fir handrail and let into the treads at the bottom. The space between the treads is open between the fourth and fifth floors, but the runs between the third and fourth floors have kickboards between the treads. These boards were original to the staircase, and also hide the service stairway to the second floor. The landings have narrow tongue and groove oak flooring, matching the treads.



Historic view of the main staircase.

The staircase is in good condition. Miscellaneous dutchman repairs have been made to the treads over the years, and the lower portions of the madrone and fir baluster were replaced after the 1964 flood. The stringers are all checked to some degree, but none are serious enough to warrant replacement or reinforcement. The treads are showing signs of wear from 65 years of use, but are far from needing replacement.

Recommendations for Treatment: Main Staircase

The main staircase is in sound condition, and requires no preservation work. If maintenance be comes necessary, it should be performed not only in accordance with the Secretary of the Interior's Standards, but should also be carried out with the care and precision of the earlier dutchman repairs and baluster replacement.

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PART V

Interior Assessment and Recommendations (continued)

Concrete

The Chateau is grounded by a reinforced concrete foundation, which rises to form the exterior walls of the first and second floors. The system was poured in place using board forms and a variety of sizes of reinforcing bars. The exterior walls of the first and second floors are concrete, supporting the wooden structure above. A sill plate makes the transition to the light wood frame above the exterior walls, and the heavy timber system in the building bears on the north and south exterior walls of the first floor.

On the first floor, concrete also forms the boiler room ceiling and floor. The reinforcing bars are exposed at spalls in two locations, revealing the size but not the spacing or arrangement of the rebar. The ceiling is reinforced with #5 bar (5/8" diameter), and the projecting engaged columns supporting the heavy timber structure above are reinforced with #7 bar (7/8" diameter). The size of the rebar in the walls is unknown, as none are exposed. The ceiling is a monolithic slab, with larger concrete beams as part of the same pour running east-west. These two primary concrete beams are supported by engaged columns at both ends, and four freestanding columns in the east end of the room.

The primary beams support secondary north-south beams, spaced at approximately 5-1/2' on center.



Boiler room ceiling structure.

Five openings exist in the concrete walls of the first floor. On the north wall, a hole has been punched high in the wall to provide access to the crawl space beneath the second floor. On the south wall, the boiler exhaust pipe passes through the wall towards the base of the chimney. The west wall has three openings, one for a pair of windows and two for doors, one to the exterior and one leading to the stair up to the second floor.

The concrete of the first floor appears to be relatively sound. There are a few areas deserving attention, however. On the south wall just east of the boiler holding tank a small crack has developed, and is surrounded by a white chalky residue. Above this crack, the wall is stained by water infiltrating the basement via the boiler vent pipe. On Oregon Caves Chateau the east wall, near the north end, a small crack in the foundation is admitting moisture into the building, resulting in

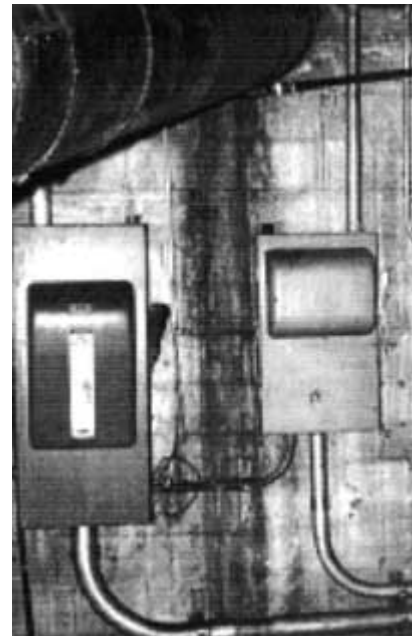


Crack in the boiler room, north wall.

blistering paint on the wall surface and some fungal growth. On the west wall, at the south end of the window, a small crack runs from the sill diagonally down to the floor. This crack is experiencing some lateral displacement, less than 1/8". A major crack exists in the north wall at the east end, running floor to ceiling. This crack is up to 3/8" in some locations, with small cracks flanking the major fault.

The second floor concrete does not have cracks or spalls of the same magnitude seen on the first floor, but a number of smaller cracks exist in the walls and floor. The east wall, in particular, is problematic. Just north of the stair to the third floor, a horizontal crack exists about five feet off the floor, allowing water to seep through the wall and forming white chalky deposits. This water collects on the floor near the wall at the base of the stairs. About ten feet north of this,

another crack runs vertically from the floor to the sill level, with a gap that varies between 1/16" and 3/16" and minor lateral displacement. No water seepage is visible at this point. Near the north end of this wall, the electrical service enters the building. Water is infiltrating the building at this point, forming a chalky deposit. The joint between the concrete floor and concrete wall is also allowing moisture into the structure just north of the stair. These cracks and seepage locations were observed on a day with no precipitation, except for snow melt running off of the roof.



Water infiltration at the boiler vent pipe.

At the south end of the east wall, in a storage room, an opening exists high in the concrete wall. This opening is boarded up, but allows water to enter the building. The concessionaire reported that the wood barricade has failed in this opening in the past, allowing water, mud, and debris to enter the structure. The top of the opening is below grade.

Recommendations for Treatment: Concrete

As the concrete forms the structural base of the Chateau, it should be given attention and protected. The following recommendations are made:

- Improvements to the drainage system around the building will prevent water from infiltrating the structure through cracks in the walls, especially on the east side. Most of the water coming through the foundation is present on this side, due to improper drainage patterns. See [Vegetation and Drainage](#), pages 53-54.
- Exposed rebar in the boiler room should be protected from corrosion. The portions exposed should be cleaned to bare metal, treated with a zinc paint, and the spalls surrounding the exposed rebar should be patched. This will avoid corrosion of the reinforcing bars surrounding the spalled areas.
- All minor cracks in the concrete walls should be patched after the drainage pattern is improved

outside the building.

- The opening in the south end of the east wall should be filled with concrete to avoid the failure of the wood again. The concrete should be board formed and poured in place to match the historic concrete surrounding the opening.
- The crack in the west end of the north wall of the first floor should be inspected by a professional structural engineer. Monitoring should be performed to determine if the crack is static, or continuing to spread. This crack should be repaired or reinforced as necessary.

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PART V

Interior Assessment and Recommendations (continued)

Systems

There are three main systems present in the Chateau, the boiler, plumbing, and electrical systems. All three have undergone periodic maintenance, repair, and alteration, and are currently in good condition.

The boiler provides heat through a series of radiators in each room of the building. The historic radiators are present throughout the building, and are painted silver. The paint coating is in excellent condition in all locations throughout the building, resulting in a handsome appearance for the historic fixtures. A 3000 gallon holding tank was installed for the system when it was converted to an oil burning system in 1946, and is still in place on the south wall of the boiler room. Aside from yearly maintenance and inspection by a professional, the boiler has received a new fire box. This was done in 1996, as the old one had disintegrated and lost some of its efficiency. The boiler system is supplemented in many guest rooms by the addition of electric baseboard heaters, resulting in an easily manipulated comfort system.

The plumbing system is original to the structure, with the exception of the sprinkler system that was added in 1950. Occasionally leaks develop within the system, and water damage occurs to the historic fiberboard wall and ceiling finishes. The concessionaire has had difficulty in locating fittings and connections to repair the historic plumbing system as these leaks develop. Modern connections are installed within the walls, and in places the historic fixtures must be removed because of the impossibility of finding the proper fittings.

The sprinkler systems are both not original to the structure. The rooftop sprinkler was added shortly after the Chateau was completed, and the interior sprinklers were added in 1950 (with additions to the system in 1961). The interior sprinklers received new sprinkler heads earlier this year (1999) as a code compliance requirement. The system was installed without regard for the historic fabric or appearance, and is a prominent eyesore in many of the rooms.

The electrical system is in excellent condition within the Chateau. In the 1987 concession contract, the company was required to upgrade the electrical service to the building. The interior outlets are all grounded, with new plates. This work was completed within the initial 10 year term of the contract. The only problem with the current electrical system is that there are only two outlets per guest room, and up to six rooms are served by a single circuit. The concessionaire is hesitant to install new outlets, as the historic finishes would be damaged (especially the fiberboard). This is the best approach, as the historic fabric may be severely damaged in the installation process.

Recommendations for Treatment: Systems

All three systems are in good working order in the Chateau. The systems should be treated as follows:

- The electrical system and boiler should continue to receive periodic maintenance and inspection to assure that they are working properly.
- The plumbing system should be carefully maintained to avoid leaks, and any preventative maintenance possible should be carried out to prevent damage to the interior finishes.
- The two sprinkler systems should be regularly inspected and maintained as necessary to avoid leaks and damage to the building finishes.

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PART V

Interior Assessment and Recommendations (continued)

Chimney (Interior)

The Chateau's chimney structure is only visible at two levels within the building. The chimney runs the entire height of the building from the second level through the roof of the south wing, but is hidden inside the walls at all levels except the second and fourth floors.

The second floor is the base of the chimney structure. At this point the chimney has been stuccoed and painted white. The stucco is in good condition, without any serious cracks visible. In fact, the stucco does not show signs of even modest cracking.

In the main lobby on the 4th floor, the marble of the fireplace is visible. The chimney and fireplace is a showcase for the lobby, dominating the southern end. It is formed from pieces of local marble, roughly squared and uncoursed. The east side of the chimney features a projecting shelf of marble, historically used to hold a small statue of a caveman. The west side features a small recessed area, representing the Oregon Caves themselves. There is a firebox on the east and west sides of the chimney at this point, both lined with yellow fire brick. The eastern firebox receives heavier use, as it is visible to patrons crossing from the main entrance to the front desk. There is a number of locations within this firebox that are missing mortar in the joints between the fire brick, and the bricks are slightly displaced and are beginning to sag on the west (back) side of the opening. Both of these fireboxes are spanned by steel channel, set into the marble.



The eastern lobby fireplace.

The fireplace structure appears sound from all four sides. There are, however, two locations where small cracks appear in the chimney structure. On the west side, just north of the firebox opening, a crack is present along the edges of the mortar joints traveling vertically for approximately four feet. The crack has no separation to speak of; the bond between the mortar and the marble has been lost. The north side of the chimney houses another crack in the mortar, near the center of that elevation. Minor separation is occurring within this crack, up to 1/16".

Recommendations for Treatment: Fireplace and Interior Chimney

Generally, the fireplace and chimney construction still appears sound. The following recommendations are made:

- The east firebox should be cleaned out and reconstructed, using the historic fire brick. The narrow mortar joints in the historic assembly should be replicated in the reconstruction. This will avoid potential problems with the chimney later, and cleaning the brick should coincide with chimney sweeping.
- Both flues should be periodically swept to avoid chimney fires. This is especially important at the east firebox, which is more heavily used.
- The cracks on the west and north sides of the chimney should be monitored to see if the cracks are continuing to separate, or if they are stable. If separation continues, a masonry consultant should be utilized to remedy the situation.

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PART V

Interior Assessment and Recommendations (continued)

Floor Finishes

The majority of the Chateau's original floor finishes are either covered over or have been replaced. The only areas where the original finishes are present and exposed are the main staircase and landings, most of the guest room closets, and the first and second floors. The stairs and landings retain their original oak flooring, and the guest room closets have either 2" or 3-1/2" wood strip flooring. The first and second floors retain their historic unfinished concrete floors.

The guest rooms were carpeted originally, but the original carpeting has been replaced. The main lobby historically had a battleship linoleum floor, which is still in place under the current carpeting. The dining room's wood strip floor has been carpeted, and the historic maple dance floor on the same level was replaced by a plywood subfloor and carpeting following the 1964 flood. The flood also resulted in the loss of the parquet floor in the coffee shop, which now has asphalt tiles (as does the kitchen).

Recommendations for Treatment: Floor Finishes

As many of the floor finishes have been replaced, the historic flooring remaining becomes much more important in terms of preservation. The following recommendations are made:

- Maintain the finishes at the main staircase, employing the same care and sensitivity as the earlier repairs if repair becomes necessary.
- Maintain the exposed and stained wood finishes in the guest room closets as a record of the method of construction.
- While the maple dance floor has been lost, the original wood floor of the dining room may exist under the current carpet. While the carpet is protecting the historic fabric, the restoration of this floor would contribute significantly to the character of the space.
- The original lobby flooring exists under the current carpeting, and could serve as a basis for restoration. If this is pursued, the restoration should incorporate as much of the original floor as possible, and any replacement should be of a similar color and composition as stated in the Secretary of the Interior's Standards for Restoration.

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PART V

Interior Assessment and Recommendations (continued)

Miscellaneous Elements

There are two elements not covered elsewhere in this report that are significant either to the design or operation of the Chateau. These are the dumbwaiter from the second to third floors and the creek diversion through the dining room.

The dumbwaiter runs from near the top of the stairs to the first floor up to the kitchen area on the third floor. It is original to the structure, and is still used to move flatware and foodstuffs from the storage areas on the second floor up to the kitchen. A dimensional lumber box moves within a shaft in the structure. A series of pulleys and ropes propels the box, operated by hand from either level. The device operates smoothly and efficiently, except when an overanxious employee gets the ropes moving too fast over the pulleys. The ropes have a tendency to jump off of the pulleys, rendering the dumbwaiter inoperable.

The diversion of Caves Creek through the dining room is a signature element of the building. A culvert brings the water from the lower pond through the dining room, where it is seen as an open trickle of water flowing over rocks and around ferns. This aspect of the building brings the natural world into the structure, providing a link with the surrounding landscape. The link is reinforced by the enormous picture windows in the west wall of the space. The concept of running a small mountain stream through a building and bringing the outdoors inside was not unique, but it was unusual and noteworthy. Laura Soullière Harrison, in her National Historic Landmark nomination, notes that "considering that the Chateau predates Wright's house 'Falling Water' by two years leads me to think that the use of the stream running through the building was an honest response to the site, and not a choice made because the designer saw it in an architectural magazine and felt it would work here." (389) The creek exits the building through a drain pipe in the west wall, running down below grade and emptying into Caves Creek below.



The Caves Creek diversion in the dining room.

Recommendations for Treatment: Miscellaneous Elements

These two elements of the building are noteworthy, and are both in good operating condition. The routine maintenance performed on each element should be continued to keep them operating efficiently.

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PART VI

Recommended Treatment Summary

The treatment recommendations for the Oregon Caves Chateau are summarized in this section, separated into the same divisions as in the rest of the document. All preservation treatment must adhere to the Secretary of the Interior's Standards for Preservation and Restoration, listed in [Appendix B](#). These recommendations apply to whoever has the responsibility for building maintenance.

Exterior Treatment Recommendations

Roofing and Flashing

The treatment of the Chateau roof can be broken down into seven different components. These are both short and long term solutions, and are also basic maintenance. The recommendations for roof treatment are:

1. Keep the roof valleys clear of excessive snow loads. One valley has already received sheathing damage due to overloading, and the historic fabric has been compromised. The damaged area should be repaired before the next winter to avoid further damage. This work should be performed on a regular basis throughout the winter.
2. The fascia board for gutter support should either be removed or have a gutter permanently installed. The concessionaire has undergone a Section 106 review for the addition of a gutter above the main lobby entrance, and is allowed to place a gutter at this location.
3. The roof hatch near the chimney should receive a more permanent locking mechanism. Providing a set of stout latches and hinges would protect the door from being blown off of the building, and would reduce the risk of the hatch being dropped inside the attic after removal and falling through the historic fabric of the ceiling.
4. The growth on the roof should be kept to a minimum. A moss killer should be applied to the roof to reduce the growth, protecting the shakes from accelerated decay. Care should be taken when applying the chemical so that excess does not fall to the ground and damage vegetation around the eave line of the building.
5. The sheet metal roofing between the chimney and the ridge should receive a new layer of paint to protect the metal. The material is still sound, but neglect could result in further decay of this system, allowing water to infiltrate the attic space. The joints between the sheets should be inspected to make sure they are weathertight before the area is painted. If repair is necessary, the work should be done prior to painting.

6. The galvanized metal in the valleys should be repainted before the galvanizing is compromised. This needs to be done with care to avoid excessive amounts of paint on the shakes. The valleys should be cleared of debris and inspected for damage prior to painting.

7. Within five years, the roof will need to be replaced. The number of broken and missing shakes increases every year, and while the attic is dry at this point the chance of water infiltration into the building envelope increases every year. The historic exposure, texture, and thickness should be maintained, and the ridge detail should be kept the same. A copper or galvanized ridge flashing may be installed to curtail moss and lichen growth on the roof, but will not help in areas that are under the eaves. The fungicide should be used to control the growth on the roof. Replacing the roof would be an ideal time for other work outlined above, including valley flashing inspection, repair, and painting, flashing the fascia board above the lobby entrance, and repair of the sheet metal above the chimney. This work should be completed before the roof begins to leak, compromising the building envelope.

Brackets, Verge Boards, and Purlins

The brackets, purlins, and verge boards display various levels of decay. The purlins are protected from the elements, and as a result are in good condition. The brackets, on the other hand, have been subjected to the weather and require attention. The treatment of these three elements varies, but is consistent throughout the building.

1. The horizontal members of the log brackets are all in need of replacement. Excessive decay has rendered them useless as structural elements, and has diminished their decorative importance. The brackets should be removed from the building with care in order to perform this work, so the historic siding will be protected. The diagonal members should also be inspected at this time, and the decayed members should be replaced. The number of diagonal members needing replacement will not be known until the horizontal member is removed and the end grain can be inspected.
2. All verge boards suffer from a compromised paint coating. They should all be scraped and painted in situ, while the brackets are removed for repair. Any areas of decay at the intersection of the verge boards with the brackets should be repaired using a "dutchman" repair in which only a small portion of the board is replaced. This will protect the historic fabric from unnecessary removal from the building.
3. The under eave purlins are all in good condition. These peeled logs must retain the integrity of their paint coating to remain useful to the structure. The paint should be inspected on a yearly basis and repainted as necessary.

Chimney, Exterior

The exterior portion of the chimney is in good condition overall, with only minor treatment necessary.

1. It may be worthwhile to cap the chimney flues to prevent water intrusion into the building. This should be done in a manner that respects the historic character of the Chateau, and should not detract from the appearance of the building.
2. A moss killer should be used to prevent the growth from damaging the mortar.

Port Orford Cedar Bark Siding

As the siding is a character defining feature of the building, it should be preserved at all costs. The Port Orford cedar is becoming increasingly difficult to find due to a root rot that attacks the trees, and there is no suitable alternative for replacing the bark with another material. The rot is a disease of the Port Orford cedar only, and is caused by a pathogen named *Phytophthora lateralis*. This fungus infects the fine root system and moves up the tree, eventually killing it. It has only a limited distribution around the Oregon and California border in the tree's native range. It is spread by water, especially in the wet seasons within drainage basins, animals, and vehicles. The rot has infected the Siskiyou National Forest, but has not been detected within the Monument. The siding should be treated as follows:

1. Protect the siding from excessive moisture. This includes improving drainage around the building and implementing means to avoid splashback on the structure. Snow should not be piled next to the building when the road is plowed on the north side, and the southeast corner should be kept free of snow accumulation. Vegetation on the south side is harming the siding, and should be removed. See the Vegetation and Drainage Treatment Recommendations for improvements in this area.
2. Fasteners should be inspected regularly to ensure that they are not forming pockets of deterioration as they oxidize. If this becomes the case, the fasteners should be replaced through the historic holes with stainless steel, aluminum, or galvanized fasteners.

Catwalks and Fire Escapes

As these are critical life safety implements, these areas should be well maintained. They should be treated as follows:

1. Retain the paint coating on both the catwalks and fire escapes so they blend with the building, contrasting colors should not be allowed.
2. The wood deck of the catwalk is in need of paint, and the boards have bowed enough to create an uneven walking surface. The boards should be evened out and repainted to preserve them.

Vegetation and Drainage

1. Remove vegetation on the south facade of the building.
2. Install a french drain system of gravel beds and perforated pipe on the west side, allowing the water to drain out into the canyon below the building and join Caves Creek.
3. Install a similar drain system over the full length of the east facade, bringing water away from the building to a central drain pipe. This pipe should join the culvert already in place that diverts Caves Creek, and be designed in such a way that it does not easily clog or back up. This area is critical, as proper drainage will preserve the siding and prevent water from infiltrating the building through the foundation.

Windows and Doors, Exterior

1. Replace the missing sill on the second floor, west end of north wing. This missing element allows air and moisture to infiltrate the structure, and is a potential cause for damage to the building.
2. Scrape and paint all exterior sills and frames. The sill to the north of the coffee shop door will require patching to make the surface flat, as the wood from the 1954 window addition is seriously weathered.
3. Scrape and paint the exterior doors in the non-public areas of the building, including the doors on the west facade leading to the kitchen, second floor storage area, employee dining room, and boiler room. This will preserve the historic fabric and reduce the likelihood that these doors will need replacement.
4. Remove the bow from the lobby entrance doors. The door will most likely have to be disassembled to accomplish this, and wood or metal bracing may be necessary to straighten the door. Repaint the door using the current color.
5. The concessionaire has expressed an interest in restoring the historic hinge mechanism on the lobby entrance doors. A variety of pin hinges that mount in the head and threshold are available, but a brass mechanism should be used to reduce the risk of corrosion and to match the historic hardware.
6. Exterior window screens should all be firmly attached to the window frames using the eye bolt and hook hardware. Each frame should be removed from the building and inspected for loose joints and holes in the screening, then repaired and painted as necessary before re-installation.

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PART VI

Recommended Treatment Summary

Interior Treatment Recommendations

Fiberboard Finishes

1. Re-attach all sagging and loose historic Nu-Wood using small (4d) finish nails to replicate the original installation.
2. If replacement becomes necessary, remove pieces from the non-public areas of the building that have already been stripped of some of their historic fabric to supply the public portions of the building.
3. When replacement supplies are extinguished, replace the historic Nu-Wood with a compatible modern fiberboard product. Replacement in kind is not an option for the Chateau, as Nu-Wood has not been commercially available for some time. It has been out of production for at least 35 years, as replacement pieces for flood damaged areas could not be fabricated from the original product. The replacement material should match the historic in texture, color, composition, and detailing. The beveled edges and v-grooves must be cut into new replacement pieces to match the historic appearance of the panels.
4. One possibility should be considered if new material is to be introduced into the building. Historic fabric from one room may be sufficient to repair many areas of the building, if used and appropriated carefully. Removing all of the historic fabric from one room and replacing it with new material should be considered, as the new room would have a consistency in finish that may not be possible with piecemeal replacement. The historic fabric in other areas of the building could be retained under this option, and one room's historic fabric would be affected, instead of many areas of the building.
5. The use of paint to hide water damage has been employed in some areas of the building. Unattractive portions of the building may be painted to hide this staining. Natural divisions should be maintained between painted and unpainted wall surfaces. For example, where the walls have already been painted, one entire wall plane is painted up to a corner or projecting element. This strategy has been employed in the dining room and many of the guest rooms. This strategy would conserve the historic fabric, but not the historic appearance (which has been significantly altered by the application of the glaze).
6. It must be remembered that the Chateau is a National Historic Landmark sited on National Park Service property. Any alteration to the historic fiberboard wall finishes must undergo a Section 106 review to determine the impact on the historic resource. Cooperation will be required between the concessionaire, NPS, and State Historic Preservation Office to mediate some course of action. Work affecting the historic fabric must not be performed without the guidance and approval of the NPS and SHPO.

Other Wall Finishes

1. The plaster in the kitchen should be patched with a three-coat system and finished to match the historic fabric surrounding the patch.
2. The knotty pine and redwood wainscot should receive maintenance as required, but furniture should be kept a short distance (approximately one foot) from the wall to avoid potential abrasion.

Windows

1. Inspect and repair the glazing putty at each window. The putty should be painted after it has cured to match the surrounding frame.
2. Re-finish the windows at the interior where the paint or stain has blistered or failed. The stain should match the original in color and hue.
3. Sand and revarnish the bases of the fixed windows on the interior. The depth and color of the varnish should match the existing finish.
4. Scrape and paint all exterior window frames. The paint color should match the historic color.
5. Scrape and paint all interior bathroom window frames.
6. Remove and re-glue all loose window frame elements. This work should be complete before other work is performed on the window.
7. Replace the trim holding the glass at the dining room's hopper window over the french doors. The contour should match the historic trim, and the new pieces should be painted to match.
8. Custom cut one piece of glass to fit the opening of the north facing lobby window. Install the new glass before other work is performed on this window.
9. Scrape and paint all interior bathroom sills. In areas of decay, a dutchman repair is necessary to preserve the historic fabric.
10. Hardware damage at the double-hung and casement windows should only be repaired using a dutchman repair. Wood putty or other methods of repair should not be used.

Doors, Interior

1. Remove the non-historic and non-compatible accordion style doors from the lobby area and the doorway between the coffee shop and dining room. If a door is absolutely necessary at these locations, a door matching the historic character of the Chateau should be designed and installed. The installation of doors in these locations should impact the historic fabric as little as possible, and their introduction should be easily reversible.
2. The fire doors should be maintained as a life safety device. The paint color of the doors should be

kept as close as possible to the color of the guest room doors so the presence of the steel doors is minimized.

3. The guest room doors should not have any more holes drilled in them. Relocation of the door hardware has resulted in many new holes in each door, some of which are hidden by the door plate. If new locks are required, they should conform to the openings that currently exist in the doors.
4. Doors that do not operate should not be shaved down to fit the opening or swing pattern. This treatment of the historic doors is completely irreversible. If the doors do not operate properly, temporary doors matching the historic doors in design and appearance should be substituted until the lean of the building is dealt with in some fashion. The historic doors that are removed should be stored in a secure location to be used as replacements for other historic doors that may be damaged beyond repair.
5. All doorstops must be installed and functioning correctly. The doors are causing impact damage to the fiberboard wall finish, and incorrectly positioned or installed doorstops are also causing damage to the doors themselves. All doors should be inspected for stops attached to the base molding on the wall behind the door. These stops must stop the door short of impact with the wall, and should have a cushioned head to prevent damage to the door. Doorstops mounted on the hinges of the door are marring the finish of both the door and the trim, and are not historically appropriate for the Chateau.

Heavy Timber Frame

1. An engineer should be employed to inspect the three locations where moderate to serious checking is occurring. These are located in the dining room and lobby, as mentioned above. The members should be analyzed to determine if they are performing as they should, and are able to carry their load. The members may need to be repaired or reinforced as required, possibly by bolting. The bolts in the coffee shop beams are intrusive and non-historic, and should have been installed in a more sensitive fashion. Recessing the bolt heads and inserting wood plugs over the bolt heads would make them less intrusive.
2. The columns in the lobby should be protected from abrasion, as it is destroying the historic finish on these members. Chairs should not be placed near the columns, and objects such as ladders and other maintenance equipment should not be leaned on the columns to rest.

Attic Spaces

1. Place screening over the louvered vents in the small dormers and gable ends to prevent insects from entering the building and constructing nests.
2. Develop a hinge system for the main attic hatches. The hatches, especially the one at the south end of the hall, are being marred by the conduit near the opening. Hinging the hatches would protect the historic fabric and reduce the likelihood of accidental damage to the hatch cover.

Main Staircase

The main staircase is in sound condition, and requires no preservation work. If maintenance be comes necessary, it should be performed not only in accordance with the Secretary of the Interior's Standards, but should also be carried out with the care and precision of the earlier dutchman repairs and baluster

replacement.

Concrete

1. Improvements to the drainage system around the building will prevent water from infiltrating the structure through cracks in the walls, especially on the east side. Most of the water coming through the foundation is present on this side, due to improper drainage patterns. See Vegetation and Drainage.
2. Exposed rebar in the boiler room should be protected from corrosion. The portions exposed should be cleaned to bare metal, treated with a zinc paint, and the spalls surrounding the exposed rebar should be patched. This will avoid corrosion of the reinforcing bars surrounding the spalled areas.
3. All minor cracks in the concrete walls should be patched after the drainage pattern is improved outside the building.
- 4 The opening in the south end of the east wall should be filled with concrete to avoid the failure of the wood again. The concrete should be board formed and poured in place to match the historic concrete surrounding the opening.
5. The crack in the west end of the north wall of the first floor should be inspected by a professional. Monitoring should be performed to determine if the crack is static, or continuing to spread. This crack should be repaired or reinforced as necessary.

Systems

1. The electrical system and boiler should continue to receive periodic maintenance and inspection to assure that they are working properly.
2. The plumbing system should be carefully maintained to avoid leaks, and any preventative maintenance possible should be carried out to prevent damage to the interior finishes.
3. The two sprinkler systems should be regularly inspected and maintained as necessary to avoid leaks and damage to the building finishes.

Light Wood Frame Structure

1. A professional engineer should be employed to analyze the north wing of the Chateau. The building should be monitored to determine if the amount of lean is static or increasing.

Chimney, Interior

1. The east firebox should be cleaned out and reconstructed, using the historic fire brick. The narrow mortar joints in the historic assembly should be replicated in the reconstruction. This will avoid potential problems with the chimney later, and cleaning the brick should coincide with chimney sweeping.
2. Both flues should be periodically swept to avoid chimney fires. This is especially important at the east

firebox, which is more heavily used.

3. The cracks on the west and north sides of the chimney should be monitored to see if the cracks are continuing to separate, or if they are stable. If separation continues, a masonry consultant should be utilized to remedy the situation.

Floor Finishes

1. Maintain the finishes at the main staircase, employing the same care and sensitivity as the earlier repairs if repair becomes necessary.

2. Maintain the exposed and stained wood finishes in the guest room closets as a record of the method of construction.

3. While the maple dance floor has been lost, the original wood floor of the dining room may exist under the current carpet. While the carpet is protecting the historic fabric, the restoration of this floor would contribute significantly to the character of the space.

4. The original lobby flooring exists under the current carpeting, and could serve as a basis for restoration. If this is pursued, the restoration should incorporate as much of the original floor as possible, and any replacement should be of a similar color and composition as stated in the Secretary of the Interior's Standards for Restoration.

Miscellaneous Elements

1. Continue routine maintenance on the dumbwaiter and creek diversion system to keep them operating efficiently and effectively.

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PART VII

Furniture History and Inventory

Monterey Furniture

The furniture in the Chateau's guest rooms and lobby also contributes to the overall significance of the structure. The line of furniture was created by the Mason Manufacturing Company of Los Angeles, and marketed by Barker Brothers. The style was rustic, which fit the character of the Chateau well. The company was well known for their outdoor furniture, wrought iron lamps, and novelty wood and iron pieces. The Monterey line was initiated by an interior decorator, Fred Mason, who saw a piece in a Warner Brothers movie set and believed that there was a need for a furniture line that accompanied the Spanish or Mission Style homes being erected in the area. His desire for the pieces in 1929 was the start of the Monterey line.

Frank and George Mason made the initial design sketches. Twenty four designs were part of the initial run, and this expanded to about 120 different pieces within four years. There were at least three different bedroom sets, six dining room sets, sixteen different upholstery pieces, sixteen end tables, occasional and coffee tables, and four different desks and secretaries. The lumber was chiefly alder from Oregon that was run through multiple drum sanders to ease the edges and provide an antique or rustic look. The pieces were glued and laminated with a hot glue, and then fished or upholstered. The finishes were all oil stained or base-stained with asphaltum and antiqued by paraffin and rotten stone. Many pieces were hand painted after the antiquing and staining process with different colors or floral patterns. Wrought iron straps and pulls provided accent to the pieces, in addition to basic notching that provided some variation. Many of the earlier pieces were marked by a horseshoe brand, visible at the underside of the piece or on the back.

The line was produced until 1943, when Frank Mason (George's father) died. His partner in the business was not active in the manufacturing process, and handled the shipping and purchasing concerns. The plant was sold in 1945, ending Mason Manufacturing Company.

The order for the Chateau furniture was placed through Meier and Frank in Portland. From photos of the extant furniture in the lodge, George Mason concluded that the furniture collection is comprised of stock items, no special orders. In addition to the various chairs, stools, vanity dressers, bedframes, and tables, the company also provided the iron sconces attached to interior posts in the lobby and dining rooms. The chandeliers may also have come from the Mason Manufacturing line.

The majority of the furniture at the Chateau retains its historic finish on the wooden portions and leather elements. George Mason commented that it appeared to him that much of the furniture had been re-upholstered, but there may be some original fabric on a few pieces. There is a few chairs in leather elements. There is a few chairs in the boiler room that are in need of repair, but besides these the furniture is all still in use.

The following pages contain representative examples of the furniture in the Chateau, along with the total number of that type of piece and in what rooms the pieces are currently used. If there is more than one piece of a single type in one room, the number is given in parenthesis. There are eleven furniture pieces not shown in the following pages, their locations and total number are given below.

Stool with 3 plank top w/gaps - 312, 310, 212, 211, 207, 206, 203, 202, 201. 9 Total.

Bench with 3 plank top w/gaps - 309, 304, 303, 302, 212, hallway outside 212, 214 (3), 210, 204, 201, 104, 103, 102. 15 Total

Plain stool with low arch at base of sides - Dining Room (3). 3 Total.

Bedframes in rooms 312, 301, 207, and 204, all of various design. 4 Total.

Chairs in rooms 310, 307, 212, 205 and 203 (identical), 203, 202, 104 and 105 (identical), Lobby, and the hall outside room 212. 11 Total, of various design.

Dresser - 312. 1 Total.

Bedside table with round top - 304. 1 Total.

Dressing table with one drawer - 304. 1 Total.

Vanity stool with upholstered seat - 304. 1 Total.

Desk with five drawers and a small cabinet - 212. 1 Total.

Square top table - Lobby. 1 Total.

Other pieces potentially exist in the storage areas off of rooms 311 and 305. There are two chairs in the boiler room set aside by the concessionaire for repair.

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Lounge Chair; Lobby 1 Total.



Chair; Lobby (3), Dining Room (3) 6 Total.



Matching Sofa and Chairs; 2 of each in Lobby.



Highback Chair; Lobby (2) 2 Total.



Lounge Chair; Lobby, 201, 204, 312. 4 Total.



Chair; 307. 1 Total.



Chair; Lobby (2) 2 Total.





Chair; Lobby (2) 2 Total.

Octagonal Table; Lobby 1 Total



Trestle Table; Lobby 1 Total.



Writing Desk; Lobby (2) 2 Total.



Curved Back Chairs; Lobby (3) 3 Total.



Fireside Chair; Lobby (2) 2 Total.



Chair; Lobby (3), Dining Room (3) 6 Total.



Floor Lamp; 210 1 Total.



Table Lamp; 202 1 Total.



Bed Frame; 312, 307, 306 (2), 212 (2), 206, 204 8 Total.



Bed Frame; 302, 214, 209, 203 4 Total.



Bed Frame; 304, 211, 209, 207 4 Total.



Bed Frame; 309 1 Total.

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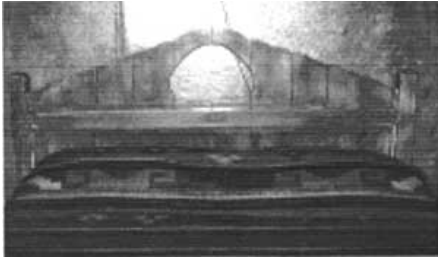
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Bed Frame; 303, 206 2 Total.



Vanity; 214, 211, 204, 201 4 Total.



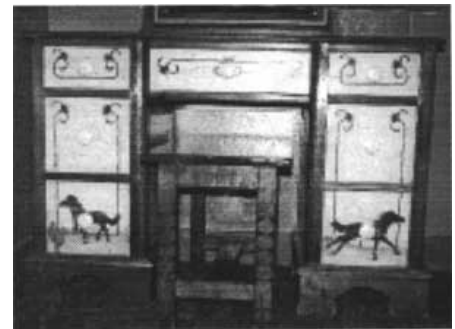
Vanity; 307, 306, 210, 207, 203, 202, 103, 102 8 Total.



Vanity; 304, 205 2 Total.



Vanity; 312, 310, 309, 301 4 Total.



Vanity; 303 1 Total.



Vanity; 302 1 Total.



Vanity; 206 1 Total.



Dresser; 211, 209, 202, 201 4 Total.



Dresser; 205 1 Total.



Bedside Table; 312, 309, 303, 302, 301, 207, 205, 204, 202, 103 10 Total.



Bedside Table; 214, 203 2 Total.



Bookshelf; 211, 209, 206 3 Total.



Vanity Stool; 312, 309, 307, 306, 304, 303, 211, 210, 209, 207, 205, 204, 202, 103, 101 15 Total.



Vanity Stool with Arched Sides; 302, 301, 203, 201 4 Total.



Chair; 303 1 Total.



Chair; 309, 301 2 Total.



Chair; 304, 211, 210, 202, 201 4 Total.

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EXECUTIVE SUMMARY

Completed Research

The purpose of this Historic Structure Report is to provide an effective tool for the management of the Chateau at the Oregon Caves National Monument. Three primary sources served the archival research, including the National Park Service's history files at Crater Lake National Park, the correspondence and history files of the concessionaire at the Oregon Caves National Monument, and the University of Oregon's library system. The primary sources used in this document are located at Crater Lake National Park and in the concessionaire's files. Limited original drawings of the building exist in the NPS files at the Monument, and served as secondary sources along with the University of Oregon's library materials.

Assessment Procedure

The second aspect of the report, the assessment and recommendations for treatment, were a field-based component of the research. An on-site evaluation of the Chateau was completed over a two-week time period, in which the building was assessed on a system by system basis.

The assessment was completed in three phases. The first phase was a room by room evaluation of the Chateau at the interior, followed by a system by system evaluation of the exterior. At this point it was realized that the problems noted in the assessment are typical throughout each system or component within the building, and the assessment is presented systematically to reflect this condition. The systematic recordation of the assessment was the second phase, and led to the third phase of the procedure, the recommendations within this report. A return trip to the site was required for verification of certain issues, after the assessment was drafted. This third phase also coincided with the photography contained in the report, as the critical problematic elements were recorded photographically.

Major Assessment Findings

The Chateau, at the time of this writing, is 65 years old. Many of the problems noted in the assessment are the result of both the aging of the building and the local climatic conditions. However, the building has some specific problems resulting from deferred maintenance and unexpected natural events (i.e. the 1964 flood). It must be realized that routine maintenance and the timely repair of building elements is the best approach to the preservation of the Chateau.

The exterior treatment issues should be addressed first to guard against water infiltration and damage to building elements. These issues are, in priority order:

- The roof is in need of replacement, and this work should be completed before the system begins to leak. This work must be done within the next five years, but should be completed as soon as possible.

- The vegetation and drainage issues must also be addressed immediately to prevent the decay of the historic cedar bark siding, a character defining feature of the National Historic Landmark Chateau.
- Exterior window work, including glazing and painting, should also be done immediately to preserve the historic wood windows that serve as the link between the interior spaces and the outside natural world.

While this exterior work is accomplished, the monitoring of the building should begin. This includes monitoring the horizontal deformation in the building's north wing, and the cracking in the north wall of the boiler room. An appropriate course of action can only be decided once these issues are monitored and it is discovered how exactly the building is behaving.

After the major exterior issues are addressed, the interior work can begin. These issues, in priority order, are:

- A decision on the treatment of the interior fiberboard finishes must be reached by the concessionaire, the National Park Service, and the State Historic Preservation office. The course of action will determine how the majority of the interior finishes are treated, and will serve to protect the historic wall and ceiling finishes.
- The work on the interior of the windows is also a high interior priority, including the refinishing and repair of the windows.
- The balance of the interior work can be completed as time and money permit, but routine maintenance on all systems should be performed to prevent major work at a later date.

A final note is required on the Chateau's furnishings. While the individual pieces were not assessed for damage or required work in this report, the furniture should not be ignored or improperly replaced. Keeping the furniture in good condition and retaining it within the building is critical to the atmosphere of the Chateau, as much of the extant furniture in the lobby and guest rooms is original. An Historic Furnishings Report should be developed by the NPS, including recommendations for treatment of the furniture. This is outside the scope of this report, but it is important to conserve the historic furnishings, including the hand-colored Kiser photographs in the lobby and dining room.

The recommendations made within this report are intended to protect the Chateau from further decay, preserving it for future generations. Preservation of the building is the focus of the report, and all work must adhere to the Secretary of the Interior's Standards for Preservation. Consultants or contractors hired to work on the structure should be knowledgeable of, and adhere to, these standards.

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