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Department of
Agriculture

Forest Service

Engineering Staff

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A History of the Architecture of the USDA Forest Service

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by John R. Grosvenor, Architect
Pacific Southwest Region

Cover illustration: Rendering of a ranger dwelling by W. Ellis Groben, 1938.

Dedication and Acknowledgements

This book is dedicated to all of those architects and building designers who have provided the leadership and design expertise to the USDA Forest Service building program from the inception of the agency—to Harry Kevich, my mentor and friend who guided my career in the Forest Service, and especially to W. Ellis Groben, who provided the only professional architectural leadership from Washington, DC. I salute the archaeologists, historians, and historic preservation teams who are active in preserving the architectural heritage of this unique organization.

A special tribute goes to my wife, Caro, who has supported all of my activities these past 38 years in our marriage and in my career with the Forest Service.

In the time it has taken me to compile this document, scores of people throughout the Forest Service have provided information, photos, and drawings; told their stories; assisted in editing my writing attempts; and expressed support for this enormous effort. Active and retired architects from all the Forest Service Regions as well as several of the research stations have provided specific information regarding their history. These individuals are too numerous to mention by name here, but can be found throughout the document. I do want to mention the person who is most responsible for my undertaking this task: Linda Lux, the Regional Historian in Region 5, who urged me to put something down in writing before I retired. Her support has continued during the whole process of producing this document.

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Chapter 1 Eras

"How many a man has dated a new era in his life from the reading of a book"

—Henry David Thoreau, *Walden*

1905–1917: From the Ground Up, or the Predesign Phase

When the Forest Service was established in 1905, employees carried out their duties in rented rooms in towns, in abandoned homesteads, and in tents in the field. Resources were so limited that these rangers even had to provide their own horses. The few Government-owned buildings that existed were small, poorly designed by the employees on the ground, and inadequate for conducting day-to-day business.[1] These administrative buildings were largely reflective of the rangers' personal preferences, as well as the materials, tools, and time available to them. Thus, these buildings, which had no apparent stylistic influences on appearance or construction, could be described as "pioneer." The special relationships between the barn, cabin, and corrals were similar to those of typical homestead layouts.

What is believed to be the oldest ranger station in the Forest Service, and certainly in Region 1, is located on the Bitterroot National Forest. Alta Ranger Station, as it is called, was built in 1899 for the Department of the Interior's General Land Office by pioneer forest rangers Nathanial Wilkerson and Henry C. Tuttle, who paid for the materials from personal funds that were never reimbursed. This sturdy 13- x 15-foot one-story log cabin (figure 1–1) served as a ranger station for 5 years. In 1904, it was sold to a private owner.[2]

Figure 1–1. *Alta Ranger Station, Bitterroot National Forest, Region 1, built in 1899*

The earliest post-1905 Forest Service building that is still standing is the Wapiti Ranger Station on the Shoshone National Forest in Wyoming. This log-cabin ranger station was originally constructed in 1904 as two buildings: a three-room living quarters and a separate office. The buildings were joined by enclosing the space between them sometime before 1908 (figure 1–2).

During the early years, a forest ranger's living conditions were fairly primitive, and expenses and meals were usually paid out of the rangers' own pockets. In 1905, District Ranger Raymond Tyler, assigned to the Lake Tahoe Forest Reserve, submitted the following request:

> Living accommodations in the Reserve have always been poor. The cold winter rain and snow of late spring and fall make it unhealthy to live in tents during the season. Our horses shiver in the icy winds and grow poor. If we bought hay we had little or no means of keeping it dry. When snow and bad weather come a ranger is compelled to live at some hotel and stable his horses, which is very expensive and more than I believe the Department expects. Therefore I ask that the Department allow some appropriation and ranger labor to build a house and barn.

Ranger Tyler's pleas for assistance were apparently heard. The following year, a house with three bedrooms, a kitchen, and a large sitting room was erected. The total cost of the house was estimated at $150. This building was perhaps the first Government-owned facility on what is now the Eldorado National Forest.[3]

Rangers such as Raymond Tyler relied heavily on Gifford Pinchot's *The Use Book* of 1905 for guidance which stated:

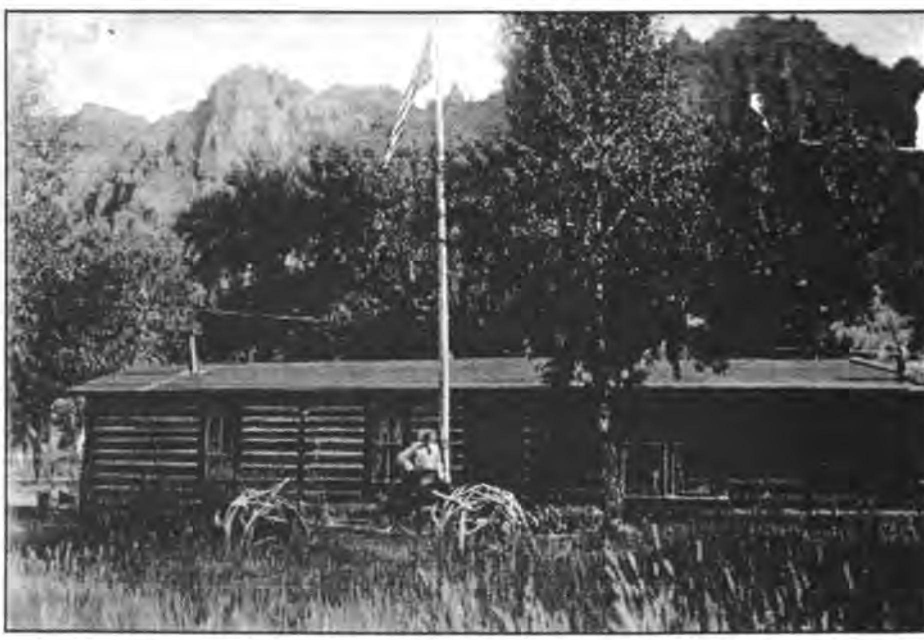


Figure 1–2. *Wapiti Ranger Station, Shoshone National Forest (1908)*

> Eventually all the rangers who serve the year round will be furnished with comfortable headquarters. It is the intention of the Forest Service to erect the necessary buildings as rapidly as funds will permit. Usually they should be built with logs with shingle or shake roofs. Dwellings should be of sufficient size to afford comfortable living accommodations to the family of the officer. Rangers' cabins should be located where there is enough agriculture land for a small field and suitable pasture for a few head of horses and a cow or two, in order to decrease the often excessive expense for vegetables and food. He will be held responsible for the proper care of the buildings and the grounds surrounding them. It is impossible to insist on proper care of camps if the forest officers themselves do not keep their homes as models of neatness.[4]

Pinchot's instructions were straightforward enough, but a centrally located administration, poor communications, lack of personnel, and misinterpretation of new regulations often resulted in a lack of uniformity in field operations, including plans for improvements. Also, appropriations for improvements were more often based on arbitrary spending limitations established by Congress rather than on need.

Pinchot also established a ranger exam to eliminate undesirable ranger candidates. Applicants were expected, among other things, to be able to handle an axe and were tested on their knowledge of cabin construction. The Washington Division of Engineering was created in 1908, the same year that forest administration was decentralized into eight Districts, each with its own Engineering Division.

The design and feeling incorporated in the earliest administrative buildings placed importance on ideologies as well as function. Gifford Pinchot promoted the agency, its mission, and its policies, and Forest Service architecture played an important role in Pinchot's vision.

In Colorado, Ranger James Cayton selected the site in a secluded clearing near a spring for his yearlong station (figure 1-3). From his diary written 30 years later:

> In September 1909 Forest Ranger Jolly Boone Robinson and I first started the improvements at this station. They consisted of a log barn and a three-room house. Ranger Robinson was given the task to cut and peel green blue spruce trees while I went out to work on my district.
>
> When I returned, I took my bride of just a few days to the station site, where we lived in tents, cooking over a camp fire, then later on an old cook stove. We built the barn first and put the shingle roof on it, then moved into it as there was nearly two foot of snow on the ground and snowing most of the time. We chinked the barn, then dug a hole in the dirt floor, mixed the mud and daubed it on the inside. The barn made quite comfortable living quarters as compared to tents.
>
> We laid up four rounds of logs for the house before we discontinued work for the winter. The next summer with the help of two others we completed laying up the logs for the house, installed partitions, put on the shingle roof and put in the doors and windows.

Figure 1–3. *Cayton Ranger Station, Region 2 (1910)*

> During that summer season of 1910 my wife and I put the chinking in the house and daubed it with mud. We also built the brick chimney, she being the hod carrier. That summer we moved into the Ranger Station, making it a year around headquarters from then until 1919 when I resigned and we went to California for her health.[5]

Much of the rural architecture before 1900 was constructed with no formal architectural style. Utility, time, and the availability of materials were the principal forces behind their method of construction and appearance. Formal architectural expression and detailing were generally adapted variations of the local vernacular architecture. Depending largely on the availability of milled lumber, houses and offices were wood-frame or log construction.

Temporary guard stations were often established at intervals of 1 day's ride on horseback from the established office in town (figure 1–4). These were used for fire patrols and overnight camping. Some were constructed exclusively for a timber sale. Important considerations for site placement included the availability of water, protection from the elements, accessibility to mail delivery, and existing or potential access to telephone lines.

After 1907, with creation of district offices (now regional headquarters), supervisors' headquarters, and ranger stations, more emphasis was placed on regional standardization of architecture. Originally, Forest Service architecture was epitomized by the simple log cabin, but that building type was superseded by rustic wood-frame structures of more conventional building techniques. The Forest Service intended to project an image of cleanliness, efficiency, and dedication to the public it served, and a crude log cabin did not fit that image. Exceptions were in the Pacific Northwest and northern Rockies, where log construction continued to be popular and was more economical.

Figure 1–4. *Log shack used as a temporary camp near Silers Bald, Wayah Ranger District, Nantahala National Forest, North Carolina (1916)*

Limited funding forced early forest rangers to prioritize improvement work. Eldorado National Forest Supervisor Kelley reported:

> Improvements constructed now are more necessary for the efficient development of the forest and their [the rangers'] work in conjunction with fire plans, but in ranger district management I believe there is one thing a ranger should study out thoroughly and that is what improvements work should be done in the district. In making recommendations for permanent improvements, the prime issue is protection and the relation that the recommended improvement bears to it. We all know that our improvement appropriations are small and we must overlook a few little things and pay more attention to larger projects such as telephone lines, pastures, barns and houses, but I believe telephone lines are the most important. December 1912.[6]

In 1913, improvement appropriations for the California District totaled $60,000 for fiscal year 1914. The following year's allotments were increased by $5,000, but both construction and maintenance were covered by these funds.

Final authorization for new construction required approval from the Washington Office. Standard architectural plans were nonexistent prior to 1917; the development of floor plans, exterior appearance, and materials were left up to the individual ranger, with only a dollar limitation controlling the finished building. Most of the work was done by Forest Service employees using the knowledge, skills, and labor available at the local unit.[7]

On remote forests and sites located away from population centers, rangers designed and built the structures themselves. But there were examples where the buildings were constructed by private contractors due to lack of personnel on each forest and the lack of carpentry skills.

Looking at the remaining examples of these early buildings around the Nation shows certain trends. In the Rocky Mountain areas from Canada to Mexico, there is a predominance of log structures; on the West Coast (California, Oregon, and Washington), the buildings tend to be more wood-frame structures built from milled lumber. East of the Mississippi River, most of the national forest lands were purchased, and many of the Forest Service buildings were existing structures from the farms bought to make up the forests.

During this earliest era of the Forest Service, there were no known architects, private or public, involved in developing building plans or architectural style. Very few of the buildings from this earliest period have been preserved, and those that remain have been added to, remodeled, or changed their function. Most of the information about them comes from historic letters, reports, and oral traditions. Figures 1–5 through 1–9 demonstrate the style typical of this era.

Notes

1. Dana E. Supernowicz, *Contextual History of Forest Service Administrative Buildings in the Pacific Southwest Region*, p. 4.
2. USDA Forest Service, *The National Forests of the Northern Region: Living Legacy*, p. 230.
3. Ibid.
4. USDA Forest Service, *The Use Book*, p. 108.
5. Les Joslin, *Uncle Sam's Cabins*, pp. 64-67.
6. Supernowicz, pp. 5-6.
7. Ibid.

Figure 1–5. *Martin Creek Ranger Station, Santa Rosa Ranger District, Humboldt-Toiyabe National Forest, Region 4 (Nevada) (1912)*

Figure 1–6. *Rangers on the Sierra National Forest construct the Jerseydale Ranger Station in the early 1900's. Dolly and Dick, the Reserve's work horses, assisted.*

Figure 1-7. *Supervisor's Office, Bridge Station, Sierra National Forest, Region 5 (1912)*

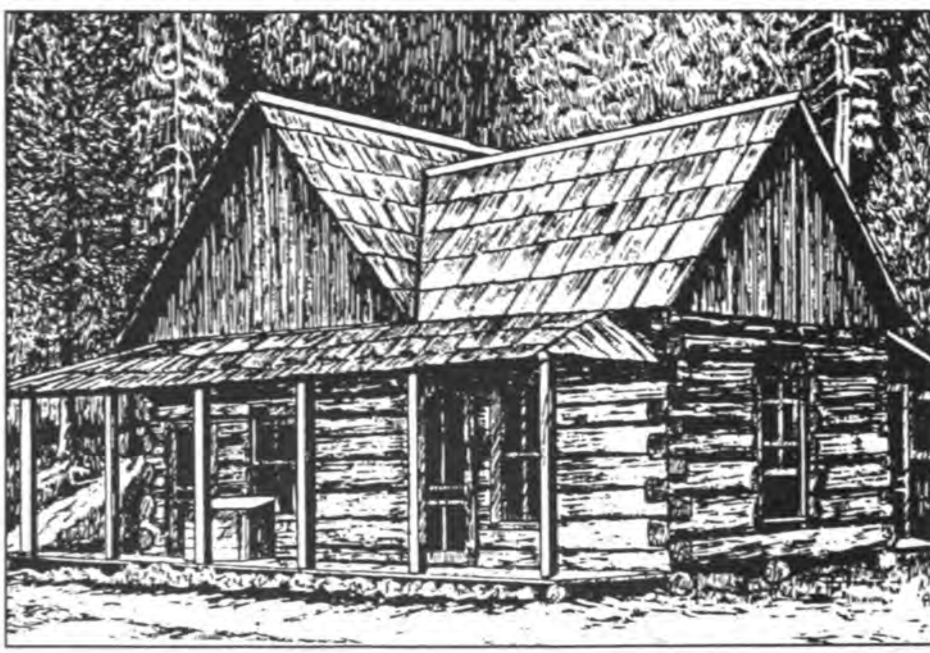


Figure 1-8. *Falls Ranger Station, Region 1 (1911)*

Figure 1-9. *Boathouse, Priest Lake Ranger Station, Region 1 (1911)*

1917–1933: From Above

When the Nation entered World War I, many sawmills were closed because of labor and management conflicts, and the cost of lumber and materials increased. Improvements constructed during this period were generally modest in size and features. As of 1917, there was still no record of a Forest Service architect.

In the California Region, Regional Forester Coert DuBois issued an Improvement Circular on May 1, 1917. As DuBois explained:

> The designs for buildings included in this Manual cover the field of buildings generally. From time to time, however, to meet special needs, small buildings, the plans and estimates for which are not included in this Manual, will be constructed. Maintenance of buildings already constructed now and then will require carpenter work of various kinds. The following chapter is written with a view of securing better construction and a higher grade of maintenance work by setting forth certain standards of construction and by giving ideas of how to do certain things which, to the inexperienced man, are more or less puzzling. Unless previous authority is secured, the specifications with respect to the dimension of materials for different purposes and the general type of construction shall apply to all common miscellaneous construction and repair work.[1]

The designs for the circular had been developed during the two previous years. They called for standard wood-framed construction in the larger structures with log construction employed for smaller buildings. The buildings were small and inexpensive to erect. The estimated cost for the 1D dwelling (figure 1–10) was $112 in labor plus materials, well within the $650 building spending limitation (see appendix B for plans and a list of

Figure 1–10. *The classically inspired 1D dwelling, Region 5 (1917)*

materials). The buildings reflect the influence of the Craftsman architecture of the era and were obviously designed with an eye to more than strictly functional requirements. Designs such as dwelling 1D, with its classic, temple-inspired front porch, overhanging eaves, clapboard siding, and gable roof, would be right at home in any working-class neighborhood of the era.

While circumstances at times required the substitution of less finished material for the milled lumber, rusticity does not seem to have been the aim of the designers. If one compares the kind of buildings constructed by the National Park Service with the buildings built by the Forest Service in the 1910's and 1920's, it becomes apparent that the latter were not really all that rustic. In fact, given the mission of the Forest Service, it could be argued that rusticity would have been an inappropriate goal for the designers of the DuBois-era structures to pursue.[2]

In the Region 2 Office of Engineering, James Brownlee, a mechanical engineer, was overseeing the design and construction of administrative improvements based on the Forest Service policy that stated, "Each new improvement [shall be] carefully planned, and all details of construction [shall be] carefully included in each plan."[3] These plans exhibited increasing use of the bungalow style (figure 1–11). Another influence changing the style of the buildings was that a growing number of rangers after World War I were trained in the forestry schools on the East Coast. These men lacked the pioneer construction skills, and many stations were constructed by building contractors.[4]

The 1928 Forest Service National Manual of Regulations and Instructions was the first Service-wide publication to address design policy since the Use Book. It stated that dwellings would be built only when it was impractical to rent living or office space. Office space was to be provided apart from dwellings. The first office designs from the various Regions would appear 3 years later. Garages were for official vehicles only.[5]

A companion to the National Manual, the Construction and Maintenance (C&M) Handbook, was also issued. Included in the C&M Handbook were plans for various types of buildings. These were not mandatory, but were used in many Regions of the Forest Service.

A significant innovation in Region 1 fire control planning was the development of the Ninemile Remount Depot on the Lolo National Forest. The Forest Service had always relied on horses and mules for getting supplies into the backcountry to fight fires, and in the early years the common practice was to hire commercial pack stock when the need arose. The rise in the number of automobiles and trucks in the 1920's, however, had caused a commensurate decline in the number of horses. In 1929, Clyde Fickes recommended that the Forest Service acquire its own reserve of pack stock and saddle horses at some central location, where they could be trucked to any point in the Region at short notice. Fickes had in mind the old remount depots of the U.S. Cavalry, where saddle horses were trained for issue to replace lost mounts. Although Fire Chief Howard Flint and others in the Regional Office opposed this idea, Regional Forester Evan Kelley gave it his approval.

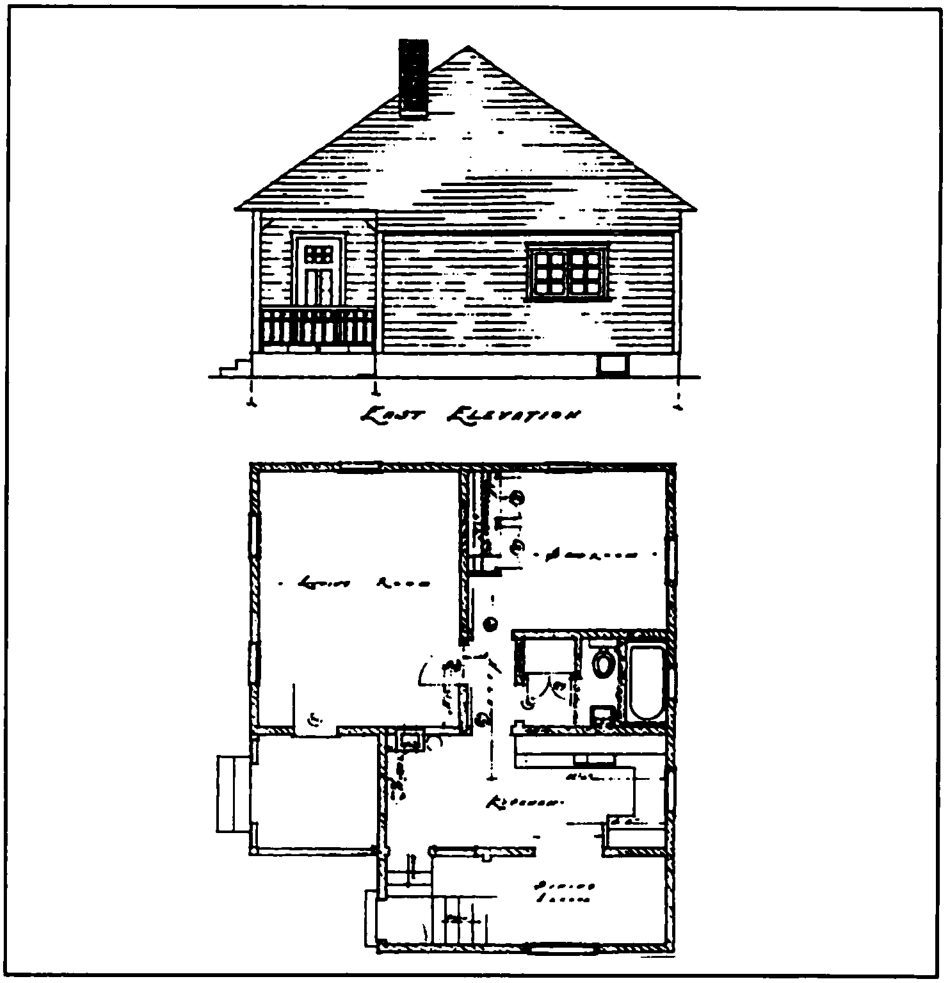


***Figure 1-11**. Plans for ranger dwelling, Glade Ranger Station, Region 2*

Kelley put Fickes in charge of the remount operation, but he gave it close supervision, too. William Fox, the first professional architect, designed most of the buildings. Many of the facilities and equipment were completely innovative, such as the horse trucks designed specifically for transporting a standard pack string of nine mules and a saddle horse. "Kelley ... really wanted it to function as planned," writes Fickes. "No one else in the RO wanted to have much to do with it because they were afraid they would get their fingers burned. After we made it prove its worth, then everybody wanted to get into the act." The Ninemile Remount Depot was a complete success; its value increased as the level of activity rose.[6]

William Fox designed the buildings for Ninemile in the Cape Cod style of architecture. The site plan was devised to look like a Kentucky horse farm, with clean white buildings, corrals, and tree and grass landscaping (figures 1-12 and 1-13). The reasons for selecting this type of architectural style are unclear; however, it appears to have been the personal choice of Fickes and Kelley.[7]

Figure 1-12. *Residence, Ninemile Ranger Station, Lolo National Forest (1931)*

Figure 1-13. *Office, Ninemile Ranger Station, Lolo National Forest (1931)*

By 1930, Forest Service appropriations shifted to emphasize fire protection structures rather than administrative improvements. In a letter to the forest supervisors, Region 5 Regional Forester S.B. Show stated that, unlike past practices, the Washington Office was now emphatic about not transferring funds from one function to another. As Show pointed out, "The money allotted for protection improvements must be spent on such and no transfers should be made between administrative or protection improvement construction and maintenance projects without approval."[8]

By the 1930's, rangers were required to own their own vehicles rather than horses. Motor vehicles helped stimulate a road construction boom in the 1920's that resulted in increased recreational use and timber and mineral extraction. Rangers used automobiles and trucks to expedite their field work, and their families enjoyed easier access to the supplies and social contact available within nearby communities. This initiated an administrative policy shift that resulted in the consolidation of districts and the replacement of full-time rural ranger stations with seasonal or temporary stations served in the summer by rangers who lived in towns the rest of the year.

The introduction of designed office space in 1931 and the construction of various other buildings at administrative sites increased the need for site planning. Guard stations may have had only a single one-room cabin, but typically consisted of a two- or three-room dwelling and a small barn. Another innovation at this time was the combination office building that included office, storage, and living quarters when built at remote locations. The architectural appearance of these differed throughout the country depending on the local styles and materials available. Figures 1–14 through 1–17 show some of the styles of this time period.

In 1932, the Washington Office requested that the Regions develop a careful policy and program before beginning any major Government-owned improvement project, and suggested that the following factors determine the need for such projects:

1. Location.
2. Certainty as to permanence.
3. Adequacy of present plant.
4. Annual rental and other costs of present plant.
5. Chance to rent satisfactory facilities, including chance to get satisfactory facility constructed for rental to the Service.
6. Full and complete cost for site and construction of a permanently satisfactory plant.
7. The $2,500 building limitation required construction of buildings of proper design.
8. Annual maintenance and upkeep cost of such a Government-owned plant.

Public opposition to Forest Service personnel and policy continued during this period. Buildings therefore continued to blend with the local culture, much as they had in the earlier period. The separation of office and residence had practical applications, but may also be reflective of the Forest Service's goal of integrating the rangers into the fabric of the community by physically separating them after hours from their official duties.

Notes

1. Supernowicz, pp. 7-8.
2. Ibid., p. 8.
3. Jim Schneck and Ralph Hartley, *Administering the National Forests of Colorado*, p. 47.
4. Ibid.
5. Schneck and Hartley, *Evaluation of R-1 Forest Service Owned Buildings for Eligibility to National Register of Historic Places*, p. 48.
6. Historical Research Associates, p. 58.
7. Ibid., p. 95.
8. Supernowicz, p. 10.

Forest Service Buildings of the 1920's and 1930's

PHOTO BY LES JOSLIN

Figure 1–14. *Ranger residence, Cabin Lake Ranger Station, Deschutes National Forest, Region 6 (1923)*

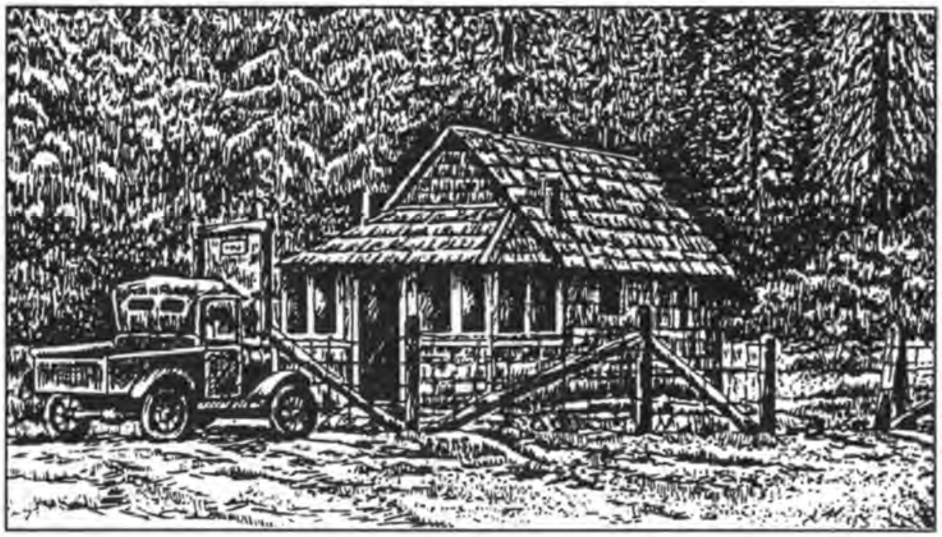


Figure 1–15. *Pelki Ranger Station, Region 1 (1925)*

Figure 1–16. *Twin Lakes Ranger Station, Region 1 (1924)*

Figure 1–17. *Boise Assay Office remodeled as the Supervisor's Office, Boise National Forest, Region 4 (1933)*

1933–1938: Groben Dictates

T.W. Norcross was Chief Engineer of the Forest Service from 1920 until 1947. Sometime around 1933, he hired the first and only Washington Office architect, W. Ellis Groben. Groben was a graduate of the University of Pennsylvania and attended the Ecole des Beaux-Arts in Paris. He was doing residential design when he came to the Forest Service, and he had served briefly as chief architect for the city of Philadelphia. He put his skills as both residential designer and public administrator to work guiding the Forest Service as it continued to create its own style of architecture.

Groben felt that current Forest Service design did not "possess Forest Service identity or adequately express its purposes," so his time with the Forest Service was spent producing concepts for Forest Service buildings. A book of "Acceptable Plans, Forest Service Administrative Buildings" was issued in 1938. Norcross, in his cover letter, stated:

> The purpose of this collection of building plans, developed in the respective Regions for various types of buildings, is to make the best ones available for the Forest Service generally. This does not signify that the present collection contains all that are meritorious and acceptable.
>
> However, by reference to this volume, a plan may be found that will suit the purpose, either in whole or in part, thereby frequently obviating the necessity of preparing an entirely new scheme.[1]

In the foreword to this publication, Groben says:

> Forest Service areas are not exclusively parks nor recreational in character but, in addition to offering these facilities, they serve highly utilitarian purposes generally, as a result of which it becomes necessary to provide buildings to adequately accommodate and house the personnel and equipment required to properly conduct the varied phases of Forest Service work.
>
> No matter how well buildings may be designed, with but a few exceptions, they seldom enhance the beauty of their natural settings. They are, however, required and necessary to satisfy definite uses which arise to meet human needs, in spite of their encroachment upon Nature's pristine beauty.
>
> For the benefit and assistance of all those concerned, it has been deemed highly desirable to present the best thought in these matters in a convenient manner by assembling this collection of plates to be known as Acceptable Plans, Forest Service Administrative Buildings.[2]

Concerning style, Groben says:

> The designs now in vogue are based upon variations of imported styles, foreign in character to a particular Region and not unlike other city or suburban buildings. Accordingly, they fail to possess Forest Service identify or to adequately express its purposes. Consequently, they are subject to adverse criticism, much of which is well founded.

> To accomplish the desired results, Regions not fortunate enough to have any traditional architecture must resort to the development of original designs based upon typical regional prototypes, refraining from the use of established styles now recognized as unrepresentative of the ideals and purposes of the Forest Service.
>
> Therefore, the first step in this procedure is to zone the Region for architectural styles, based upon climatic characteristics, vegetation, and forest cover. This has been done very logically by one Region in the following manner:
>
> | **Type of Country** | **Style of Architecture** |
> | --- | --- |
> | Desert or semidesert | Adobe or Pueblo |
> | Grassland | Ranch-house type |
> | Woodland (pine, fir, or spruce) | Timber types |
> | Alpine | Alpine type (stone or stone and rough timbers) |
>
> These general classifications represent a reasonable subdivision of the Region into localities typified by different natural characteristics and the respective type of design appropriate to each.[3]

The drawings on pages 28 through 32 show examples of Groben's architectural styles.

The preface to "Acceptable Plans" starts with:

> In assembling this collection of plans and elevations, known as Acceptable Plans, Forest Service Administrative Buildings, the Division of Engineering has undertaken to select those which embody the recognized principles of scientific, economic planning, which satisfy present-day needs as a guide for similar future structures.
>
> In no sense are they to be construed as 'Standard Plans' for the simple reason that, as more fully explained in the subsequent text, no plans can be singled out and designated as a universal standard. The moment a so-called 'Standard Plan' has been prepared to satisfy existing requirements, it immediately becomes subject to further improvement to suit conditions which do not remain fixed or standard but which are continually changing.[4]

Following in the preface, Groben gives a short course on Architecture.

> **Site Investigation.** Once the need for a building in a particular locality has been determined, the next step is the selection of a desirable site, a matter which cannot be successfully accomplished without a thorough knowledge of all the physical conditions concerning it.
>
> To simplify this undertaking, a standard form entitled 'Questionnaire Covering Conditions at Proposed Sites of Forest Service Building Developments' has been prepared to provide a convenient and uniform system of tabulating all the vital statistics necessary for a practical decision.[5]
>
> **Comprehensive Planning.** While the subject of planning is entirely too extensive to attempt a complete discussion of it here, nevertheless,

> there are certain recognized fundamentals which should be seriously considered.

He goes on to list nine issues to be covered and then moves on to the type of building plan to be considered:

> The success of planning individual buildings depends to a large extent, upon knowledge and experience in determining the type of plan which best fulfills its specific requirements.
>
> For this purpose, one must be familiar with such plan types as the square or 'box' plan, the rectangular plan, the 'T', 'L', 'H', 'U', and other shaped plans, as well as their respective advantages or disadvantages.[6]

He says the book was assembled for the purpose "... of making immediately available a group of typical plans, based on those principles of correct planning in which such fundamentals as ample daylight, cross-ventilation, direct circulation, etc., are paramount and in which the following faults of bad planning do not occur."[7]

He then lists 11 faults common to his observations of past planning. These include dark interior spaces, dangerous stairways, failure to provide a vestibule where weather extremes occur, rooms used as passageways (figure 1–18), rooms having insufficient usable wall space, bedrooms where a bed must be located in a corner next to a wall and moved to make it, linen closets in bathrooms, insufficient closet space, and excessive central hallways, which are uneconomical.

From there he moves on to preliminary data, listing facts the designer should obtain prior to starting planning and designing relating to the standard plans in the book.

Next he deals with the orientation of the building and rooms in their relation to sun, prevailing winds, type of room involved, climate of the site, and so forth. He specifically talks about location of the kitchen in cold climates; it should be on the north exposure due to its cook stove. This would be the warmest room and in that position would afford the other rooms with protection against cold north winds. He provides a diagram that covers all of the above[8] (figure 1–19).

Groben then covers the topics of topography, elevation design, service facilities, minor structures, and delineation (drafting of the plans for construction). He states:

> Groups of buildings should possess similarity of character and appearance, based upon correct principles of design, whether or not they conform to any particular style. The Sandpoint Ranger Station, Idaho, Region 1 [figure 1–20], is an excellent example of uniformity of style.[9]

The conclusion of the preface states:

> The planning of buildings and their construction, etc., are matters involving not only a thorough technical knowledge but also a broad understanding of social and economic conditions. ... It is hoped that this collection of plates will be found useful in planning Forest Service

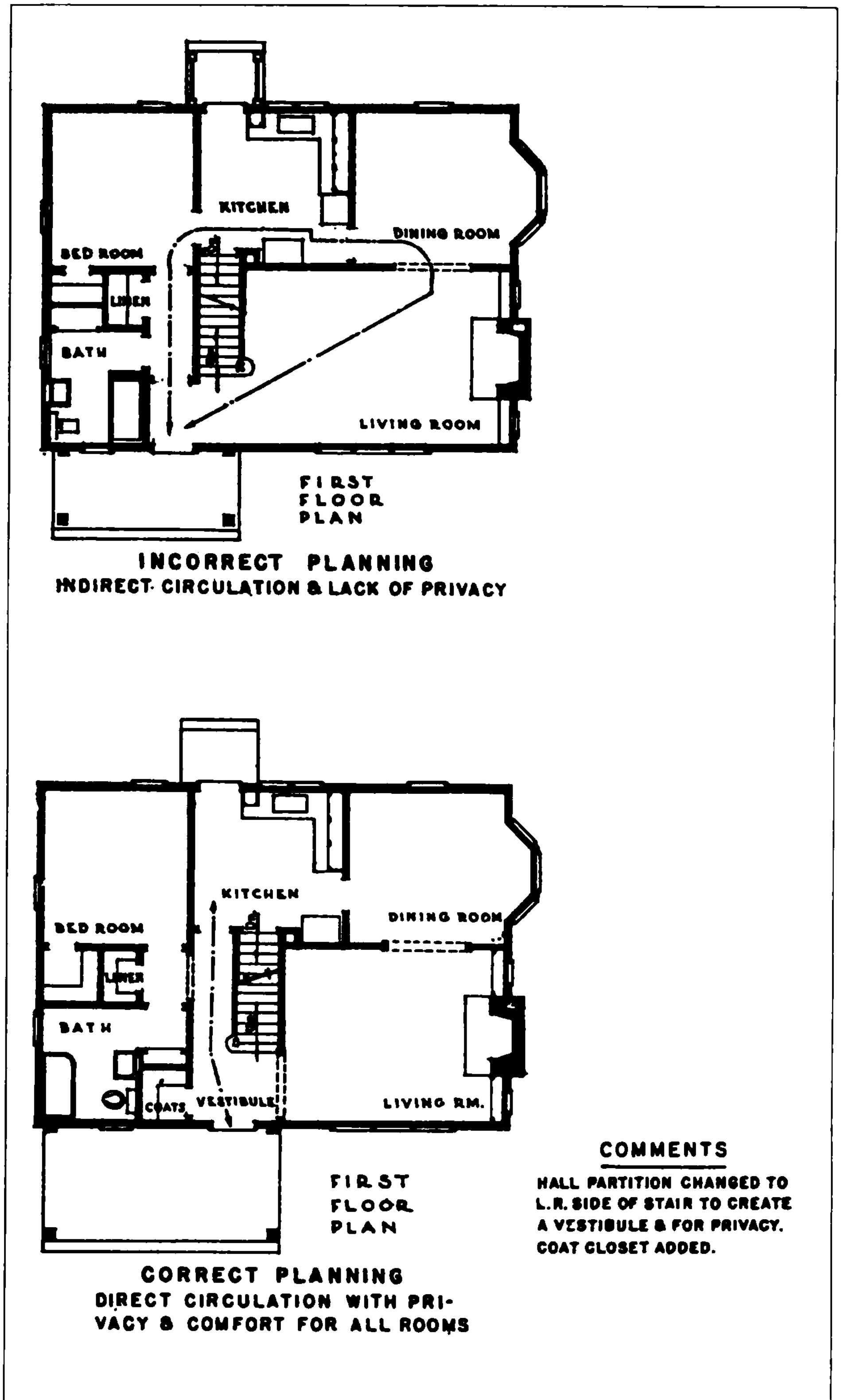


Figure 1-18. *Groben provided guidance to help architects avoid using rooms as passageways*

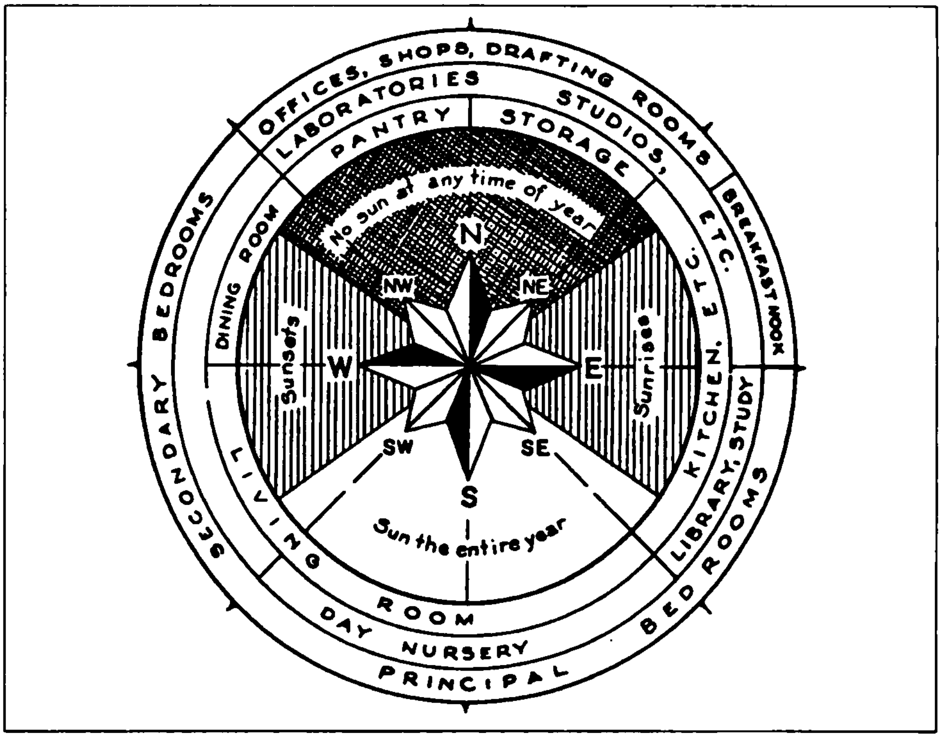


Figure 1-19. *Groben's diagram on building orientation*

> structures and that the various Regions may be assisted constructively by having been assembled and presented in this manner.[10]

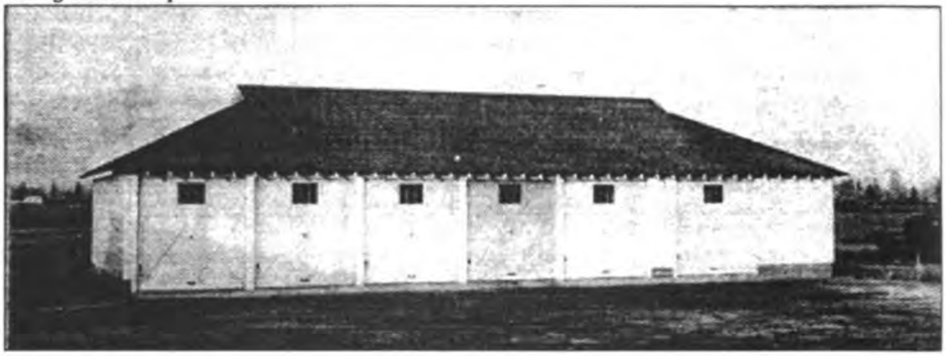
The preface is 23 pages long and includes several drawings, plans, and charts. The rest of the book covers various types of buildings, with floor plans, styles of elevations, and sketches. Groben felt this 'bible' would provide better architecture for the whole agency.

During this era, design was first to be more influenced by Forest Service philosophy than by national or local stylistic trends. In these designs can be read the architects' struggle to reconcile regional and national Forest Service design policies, current architectural trends, and local building traditions. The Regions had the opportunity to use, modify, and create their own building designs. These sometimes conflicted, as in the anomalous Art Deco or Classic Revival designs, but more often resulted in the more successful blending of philosophy, style, and local tradition promoted by the designs illustrated in "Acceptable Plans, Forest Service Administrative Buildings." Mostly devoid of superfluous ornamentation, it was the richness of texture, sense of craftsmanship, and juxtaposition of shapes and materials that made these buildings aesthetically pleasing. These structures reflect both national and local architectural trends and building philosophies of the Forest Service that include utility, respect for nature, and harmony with the environment.

Administration building

Warehouse

Garage and shop



Gas and oil house

Figure 1-20. *Sandpoint Ranger Station in Region 1 was praised by Groben for its uniformity of style*

Notes

1. USDA Forest Service, *Acceptable Plans, Forest Service Administrative Buildings*, Cover letter accompanying distribution.
2. USDA Forest Service, *Acceptable Plans, Forest Service Administrative Buildings*, Foreword.
3. Ibid.
4. Ibid., p. A-3.
5. Ibid., p. A-4.
6. Ibid., p. A-5.
7. Ibid., p. A-10.
8. Ibid., p. A-15.
9. Ibid., p. A-17.
10. Ibid., p. A-23.

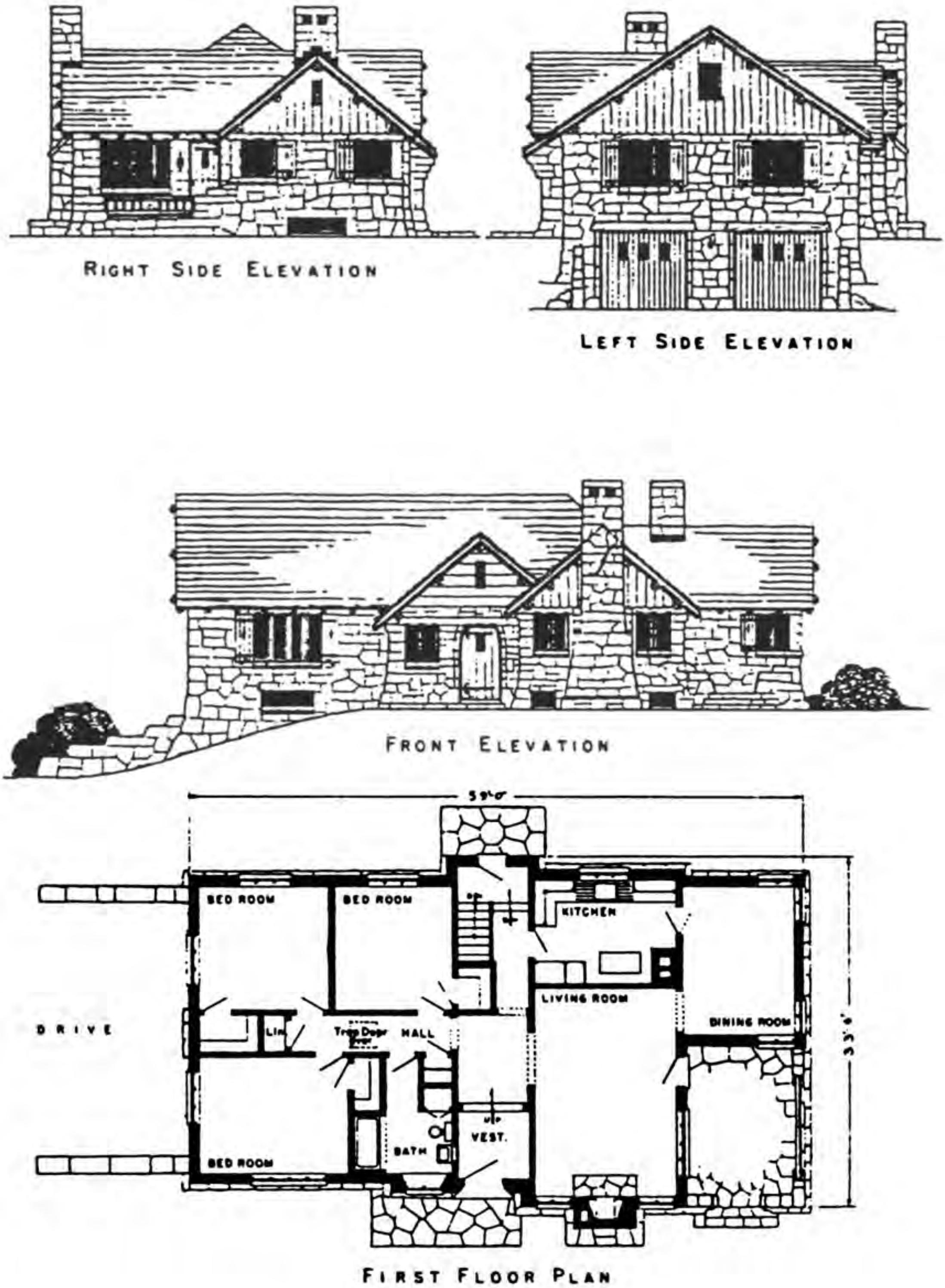


Figure 1-21. *Estes Park Ranger Station, Region 2*

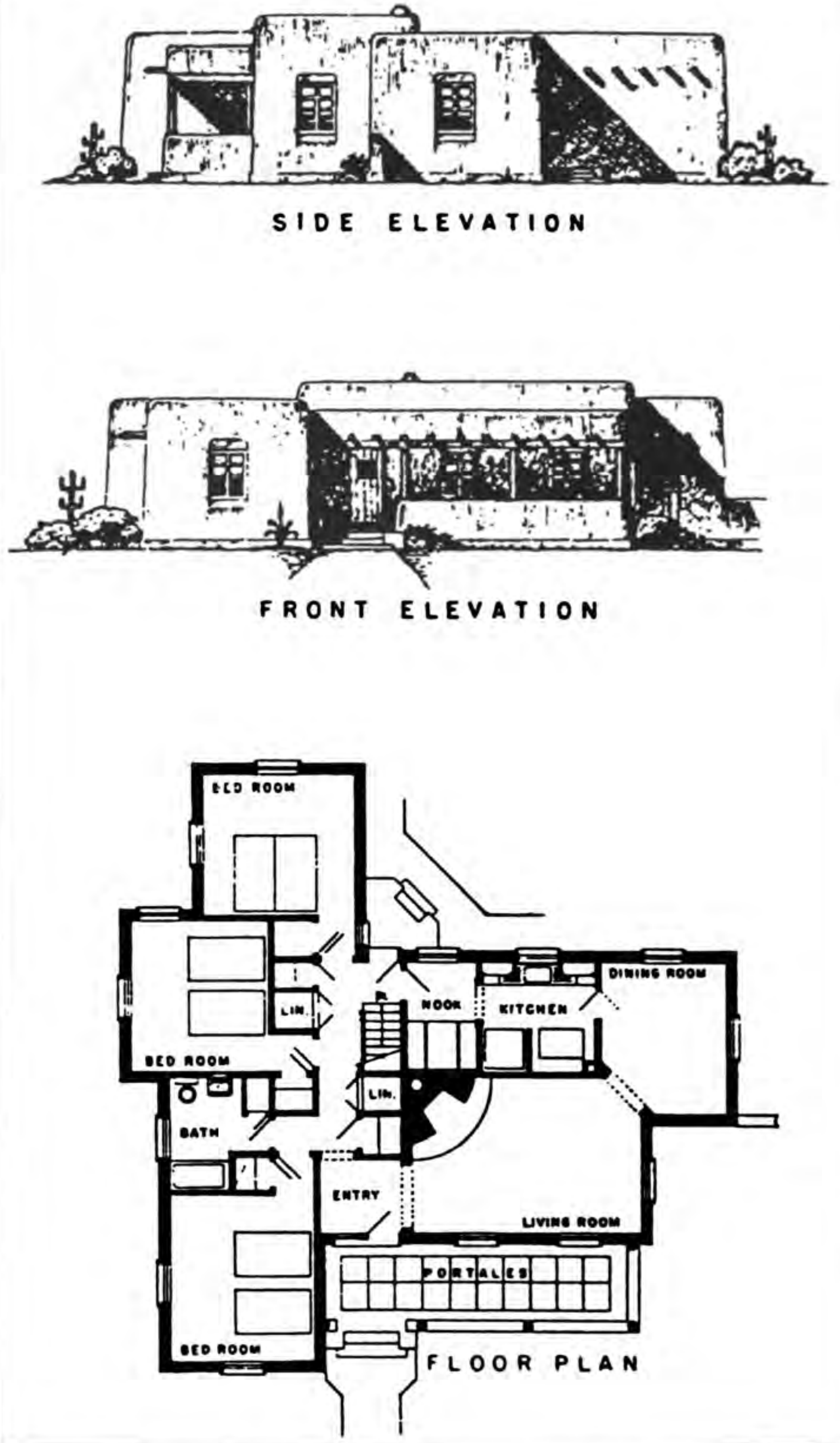


Figure 1-22. *Residence, Huerfano Ranger Station, San Isabel National Forest, Region 2*

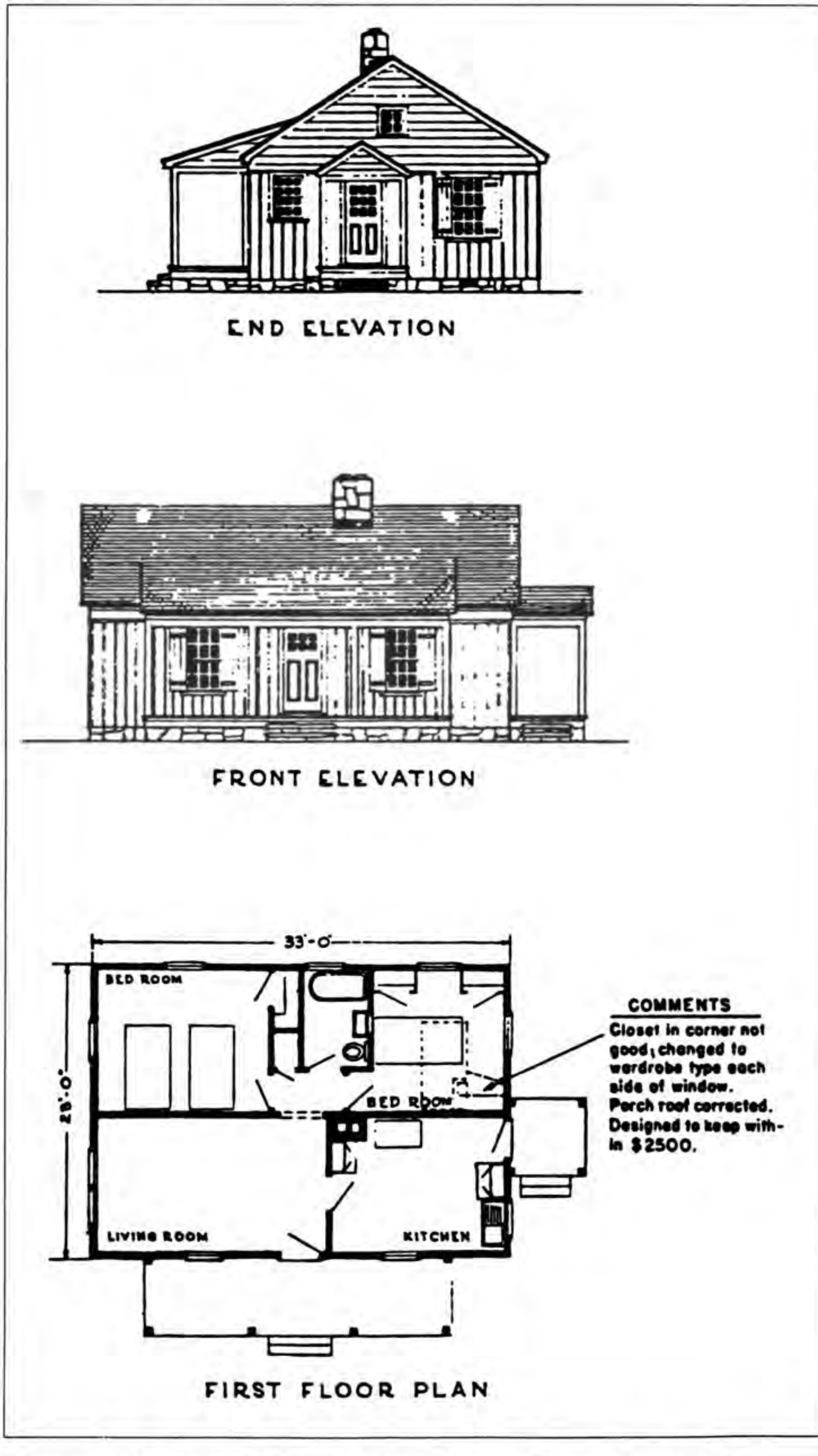
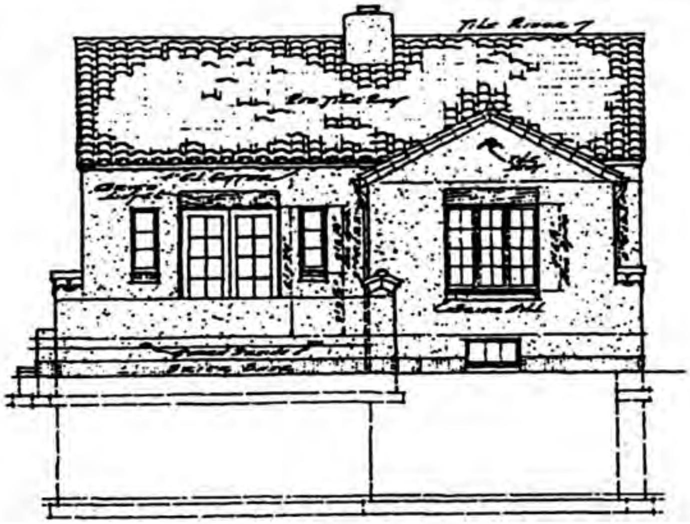
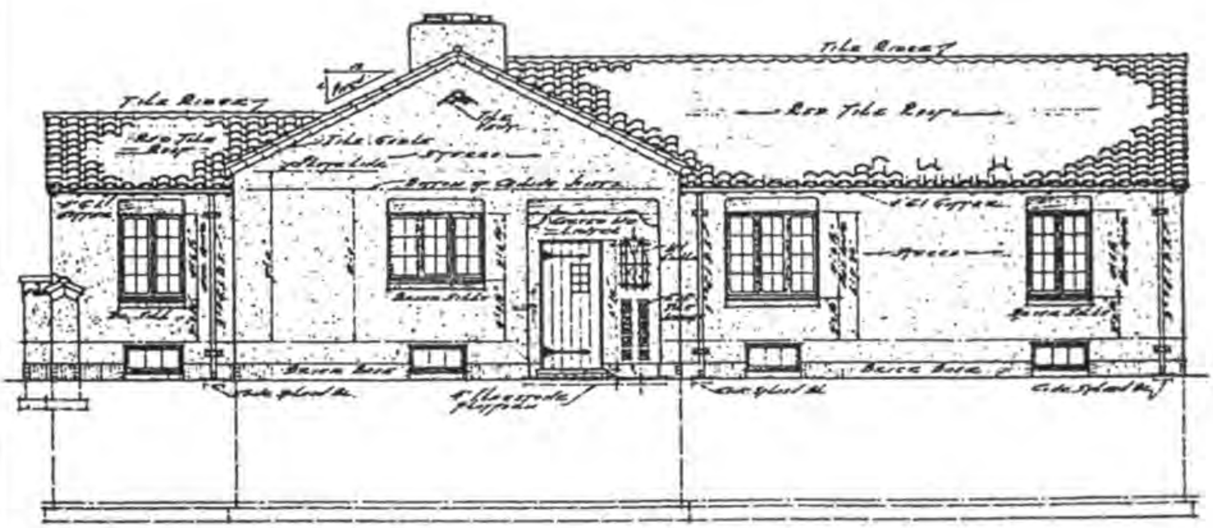


Figure 1–23. *Four-room house, Sublimity Forest Community, Region 7*



SOUTH ELEVATION



EAST ELEVATION

Figure 1-24. *Building elevation, dwelling no. 1, Pagosa Springs Ranger Station*

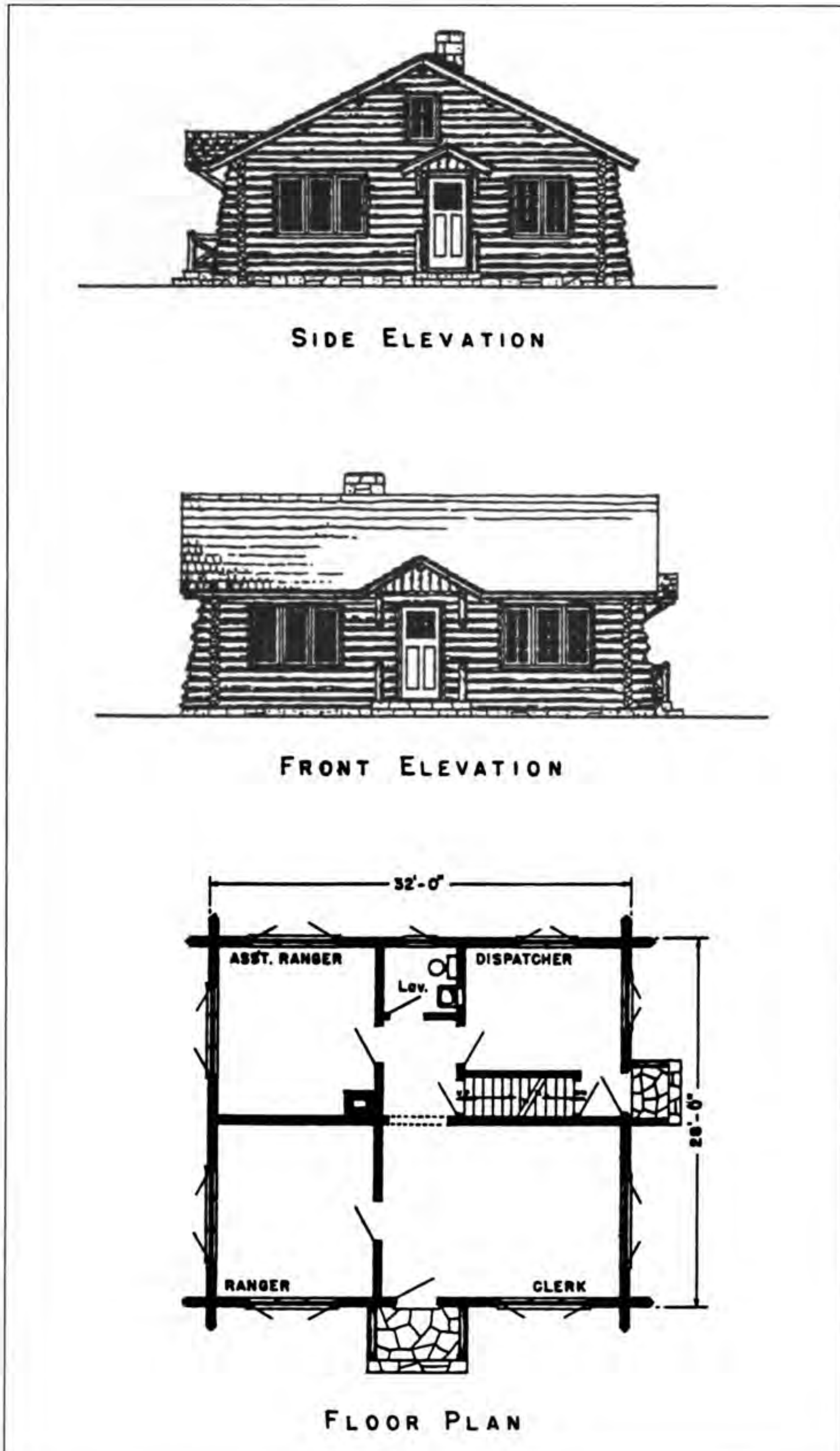


Figure 1-25. *Log Ranger Station Office, Region 9*

1934–1946: Civilian Conservation Corps to the End of World War II

Before the creation of the Civilian Conservation Corps (CCC) by President Franklin Roosevelt in 1933, the Forest Service operated with limited Government support and financial resources to oversee its vast and untamed domain, then found itself on the verge of unprecedented expansion. The newly elected President put men to work doing environmental conservation on public lands; the Forest Service, which managed a major portion of these lands, presented a perfect vehicle for implementing the goals of the New Deal. Some 250,000 men were put on the Federal payroll, working for the common good.

Secretary of Agriculture Henry A. Wallace graphically and succinctly described the state of the Nation's natural resources:

> Thoughtlessly we have destroyed or wounded a considerable part of our common wealth in this country. We have ripped open and to some extent devitalized more than half of all the land in the United States. We have slashed down forests and loosed floods upon ourselves. We have torn up grasslands and left the earth to blow away. We have built great reservoirs and power plants and let them be crippled with silt and debris, long before they have been paid for.[1]

What began as an ambitious project soon mushroomed into one of unprecedented scale, as the number of men enrolled in the CCC doubled its size within its first 2 years. More than 3 million men had signed on by 1942; almost half of the total output was administered by the Forest Service, much of it going into construction.

Because the national forests were not parks, they were intended to serve highly utilitarian purposes and not be exclusively recreational. It was necessary to provide buildings adequate to accommodate and house the personnel and equipment required to conduct properly the varied phases of Forest Service work. In accordance with the decentralized organization of the Forest Service, each component became responsible for specific elements of planning and implementation. Ellis Groben had just started in the Washington Office when building designs were needed quickly for the CCC projects (see the previous section in this chapter for more information on Groben's design concepts).

In the Region 1 office, Clyde Fickes was placed in charge of recruiting a staff of architects, landscape architects, and mechanical draftsmen to supervise the improvement program. William Fox, a Butte native and recent graduate of the University of Washington's School of Architecture, was hired as the first architect. During his interview with Fickes for the position, Fickes told Fox he wanted an architectural staff to design all the buildings required by the Forest Service. Fox was skeptical, thinking the job would entail more structural engineering than architecture. Fox eventually headed a staff of six or seven architectural draftsmen.

Fox designed the buildings for the Fenn Ranger Station with the "Georgian" appearance (figure 1–26). This complex is located in rural Idaho and administered by the Nezperce National Forest. All of the buildings are wood frame and exhibit combinations of structural and decorative details that give them a "Georgian" look. These include the use of hip roofs and dormers and the decorative door surrounds at the front entries. A rustic appearance is achieved through the use of natural stone facing on the bottom one-third of the buildings and/or the use of wide board siding.

Region 2 hired its first professional architect, S.A. Axtens, in 1936. Although he stayed only 1 year, he was involved in the design of several stations, including the Delores Ranger Station on the San Juan National Forest (figure 1–27). He attempted to follow Groben's statement: "Practical and workable plans lend themselves readily to good elevation design."

After Axtens left, W. Earle Jackson supervised a staff of 11 architects who produced detailed plans for nearly every building constructed in the Region during this era. Designs included a variety of dwellings, office buildings, garages, and barns, as well as various associated buildings. Supervisor dwellings were constructed near the headquarters in at least 12 of the 14 forests. The Region 2 style was more rustic than any other; it included uncoursed local stone or brick, walls of peeled or shaved logs or wide clapboard siding, and moderately pitched roofs with wood shingles or shakes (figure 1–28). Pueblo-style buildings were built only in the southern half of Colorado where that style was commonly seen.

Region 2 had ambitious long-range plans for construction of administrative facilities, and this was the first time it had the means to pursue them.[2] Fifty-six CCC camps were in operation in the Region by August 1933.

The designers responded to climatic conditions, especially the deep snows found at higher elevations, by raising the foundations of rustic-style buildings several feet above grade. Simple gable roof forms, strongly reinforced, were meant to cleanly shed heavy snow, which fell away from the building because of the deep overhangs. Many porches had large areas adjacent to and protective roofs over the entries.[3]

The use of wood as a construction material was perhaps the ultimate expression of Forest Service values, and designers took every opportunity to use it. Wood was cheap, readily available, and reflected the pioneer architectural traditions of Rocky Mountain architecture. Rustic style was especially appropriate for the mountains, where wood shakes, native stone, and logs were available.

The rustic tradition made use of modern technologies and covered them with materials that appeared handcrafted and traditional. Rustic design utilized stone veneer over unreinforced poured concrete foundations; milled log cabin siding imitated the appearance of real logs.

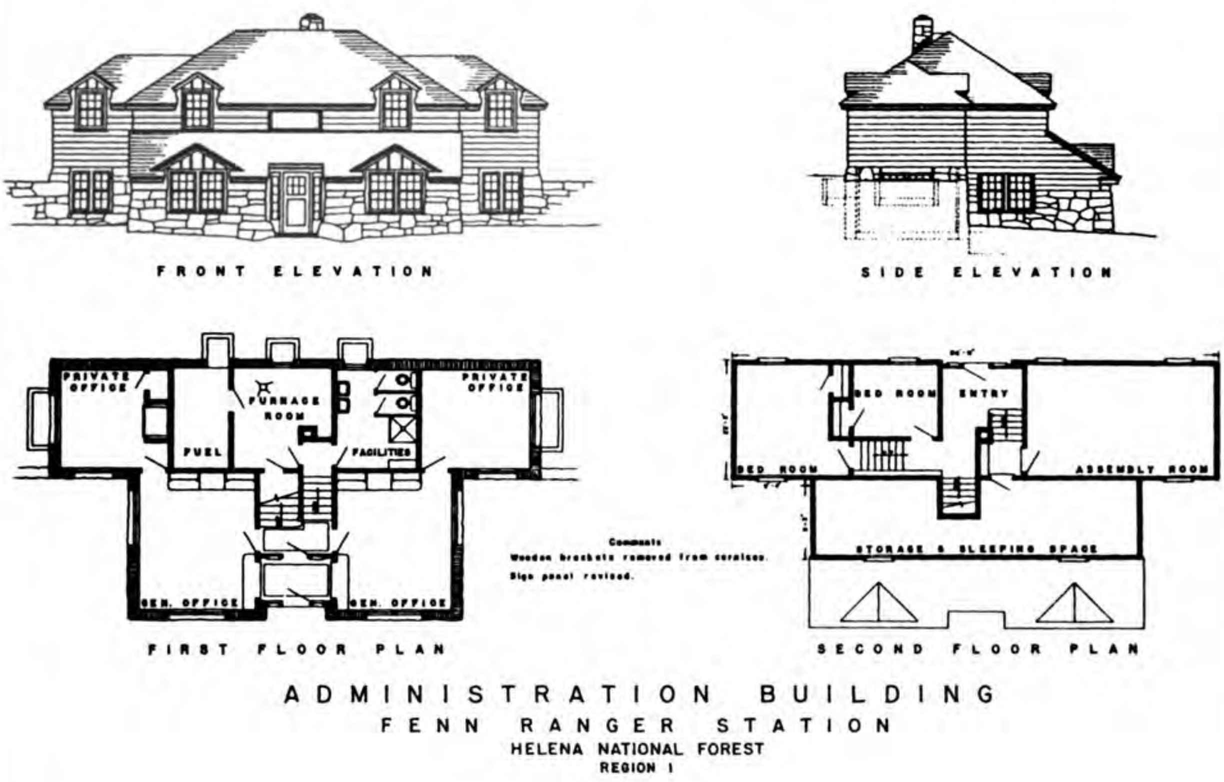


Figure 1-26. *Fenn Ranger Station, Nezperce National Forest, Region 1*

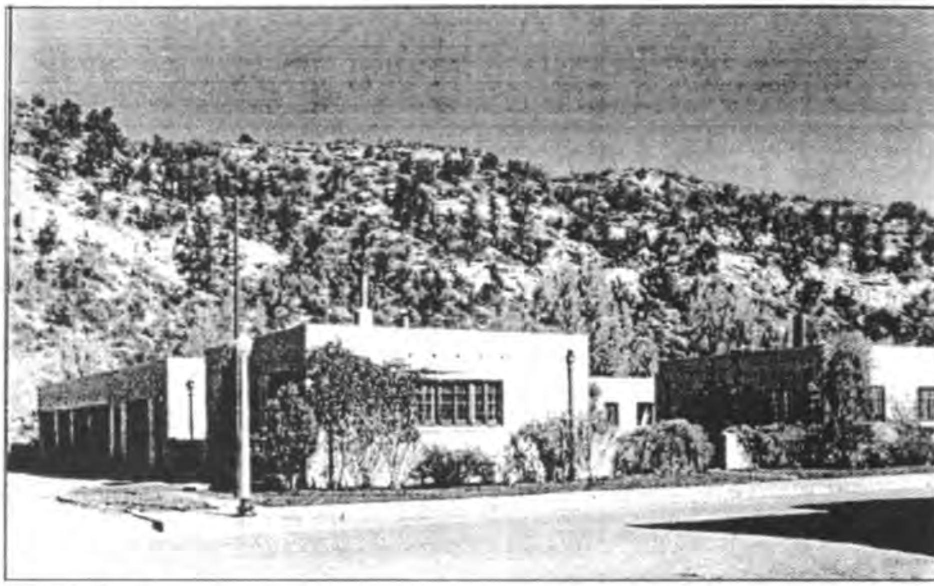


Figure 1-27. *Delores Ranger Station, San Juan National Forest, Region 2 (1933–1938)*

Figure 1-28. *Land's End Shelterhouse, Grand Mesa National Forest, Region 2 (1937)*

Region 2's rustic architecture was highly reflective of the Forest Service philosophies of harmony, utility, and the use of natural materials. Forest Service personnel took great pride in their buildings. Extensive construction records document the extraordinary care taken by rangers in making sure their buildings were as well built as possible. This rustic architecture used a strong horizontal emphasis, complimentary colors, extensive use of wood and stone, and lower overall massing to harmonize with the Rocky Mountain environment. It characterized vernacular building techniques and construction in its axe-cut log crowns and rafters, saddle notching, and unfinished stone while simultaneously utilizing the latest construction technology available. Interiors utilized wood or wood byproducts to every extent possible.[4]

In Region 3, 15 CCC camps were opened. Numerous facilities were constructed on national forest land. Administrative facilities included staff and crew residences, offices, storage buildings and barns, garages, warehouses, and fire lookout towers. A distinctive architectural style identified these new facilities with the Forest Service.

A bungalow type with low pitched gable roofs sheathed with asphalt shingles also became common (figure 1–29). Rafter ends were exposed under wide eaves. Exterior chimneys were prominent. This style was popular for Arizona national forests. A Spanish type with flat roofs with parapeted walls also emerged. Offices and dwellings had narrow, tile-covered shed roofs above entryways and porches. Only a few buildings were built with this style.

In New Mexico, buildings were designed using a pueblo style. Also having flat roofs with parapeted walls, the parapets were stepped in a line using a regular pattern. Standard plans used vigas projecting in front and rear. Wood lintels were installed over windows and entrees but not exposed. Construction materials were limited to adobe with stucco veneer.

Region 4 hired its first architect in 1928. George Nichols remained with the Region until 1956. His first significant project was the development and design of a Regional Headquarters, which was funded by Congress in 1931 as part of a Deficiency Bill (a precursor to the CCC program). This project is described in the section on Administrative Buildings.

Figure 1–29. *Crown King Ranger Station Office, Prescott National Forest, Region 3 (1936)*

One focus of construction by the CCC was recreation facilities; these included toilets, bathhouses, campground tables, stoves, and shelters.

Regional Forester S.B. Show authorized the hiring of a private firm of professional architects, Norman Blanchard and Edward J. Maher, to form the Region 5 architectural unit. These were the first professional architects in the Region, and they produced all the buildings constructed until 1938.

In the *California Ranger* dated June 16, 1933, Chief of Lands L.A. Barrett said that the new architects would bring a renaissance in Forest Service ranger station architecture:

> The firm has been engaged for the purpose to create an 'All-American' style. Old World influences are barred and Uncle Sam's new ranger stations will represent only the best of the U.S.A. Not only will the lines of our ranger stations be revamped, but the color scheme will be improved. The green roof will be retained, but the French-battleship gray paint ... will be changed to a brown stain to blend appropriately with the colors of the forest.

Blanchard and Maher described what their architectural style was to be: a "Mother Lode" style influenced by William Wurster's vernacular building designs, later known as "California Ranch House style."

In 1935, the $2,500 building limitation was in effect. However, no contributed labor was allowed except for the CCC crews, which were used primarily for rough labor such as constructing basements, rough framing, roofing, and building rock walls. Blanchard and Maher noted that:

> In order to keep all buildings, large and small, within such a comparative unit cost, methods rather unusual at the time were necessary to effect such economy.[5]

The team developed similar designs for 13 separate categories of buildings: dwellings, lookouts, fire barracks, offices, garages, warehouses, and barns. The first year it was estimated that 450 structures were constructed at elevations from sea level to over 8,000 feet. To overcome the problems of climate variability, a standard structural design was used throughout all buildings, with specific design requirements for severe snow and extreme heat and cold.[6]

Where other areas of the United States were experimenting with prefabrication, Blanchard and Maher decided that this system had little to offer on the West Coast. Rather than prefabrication, they adopted a "ready cut" design. The ready-cut system of building was adapted to home and commercial building construction shortly after 1900. This was similar to the automobile industry's system for mass production. During the 1920's, the growing home market had created a demand for inexpensive housing, in particular for suburban tract housing. The depression of the 1930's only increased the demand for affordable housing and designs such as the ready-cut house.

The ready-cut system used pre-cut lumber rather than preassembled components. It allowed for field innovation and reduced the shipping volume. Builders in California preferred the system to prefab and felt it provided a better more aesthetic finished building.

Wood was the preferred material in California, and administrative buildings were finished with wood both inside and out. The architects explained:

> The outside finish was clear, all heart redwood or western cedar. This was installed over building paper and shiplapped diagonal sheathing. On the inside, clear Douglas-fir or ponderosa pine was used to panel the interior.[7]

Region 5's mass ordering and ready-cut materials distribution benefited both the lumber industry and local communities. The majority of the buildings begun in 1933 were completed before winter with the help of the CCC crews. The Regional Engineer wrote:

> Reports are all in and tabulated on the status of our ready-cut building and warehouse program as of November 15. By unanimous agreement of reviewing officers, first prize goes to the San Bernardino, with the Stanislaus, Lassen, Mono Modoc and Santa Barbara receiving honorable mention. [*California Ranger*, December 1933]

Between 1933 and 1936, some 1,200 buildings were constructed in California. In addition to supervisor's headquarters, ranger and guard stations, and experimental station facilities, fire lookouts were erected in large numbers—45 in one contract.[8]

Blanchard and Maher's work for the Forest Service reflects several of the major themes that ran through American architecture of the 1930's. Their use of the ready-cut construction system was one of many experiments with unconventional building techniques, which can be seen as an effort on the part of the architectural community to contribute to solving the Nation's pressing economic problems. Use of what they called the Mother Lode style of building was part of a larger effort on the part of American architects to develop architectural styles that were seen as being appropriate to regional historic and environmental conditions. Even in their use of the Colonial Revival mode, they were responding to the national vogue for that type of design, which in the mid-1930's was the most popular architectural image in the country for domestic design.[9]

In Region 6, once the forests provided pertinent data regarding site orientation and topography, the Regional Office architect, Tim Turner, was able to design individual buildings that were appropriate, attractive, and practical. Design of elevations was to some extent limited by the use of a restricted number of materials native to the area for exterior construction. Climatic conditions, environment, and economy also imposed certain limitations. The sizes, shapes, and finished surfaces of the various forms of wood used in the exterior walls of frame buildings were the attributes that largely determined their design. Only mass, line, proportion, window and door design, and color remained unrestricted.

The administrative structures of Region 6 are not highly stylized log and stone buildings reminiscent of pioneer technologies, but are still distinctly rustic (figure 1–30). More refined, they are at the same time decorative and functional. The gable roofs, with pitch appropriate to climatic conditions, were the primary design, with variations such as hipped gables or gabled hips common. Porches, hoods, and dormers repeated the roof shape and trim. Roof materials were wood shingles or split shakes.

PHOTO BY LES JOSLIN

Figure 1-30. *Gold Beach Ranger Station Office (top) and residence, Siskiyou National Forest, Region 6 (1936)*

Recreation structures were also constructed in Region 6. The Recreation Handbook, as revised in May of 1933, stated:

> The Forest Camp should not take on the appearance of a museum or arboretum. Odd and contorted trees may be left, but we find that the average tourist wishes to see straight, healthy and vigorously growing trees and shrubs.

Rustic recreational architecture in the campgrounds developed by the CCC represented entirely new construction in most cases. For the children, some campgrounds afforded playground facilities designed by the Regional Office architects.

Region 8 hired DeFord Smith as Regional Architect in 1934. Smith was a graduate of the University of Pennsylvania in architecture. He was very busy during the CCC era, producing 14 designs in 1934, 43 in 1935, 68 in 1936, 69 in 1937, 75 in 1938, and 64 in 1939. These designs consisted of picnic shelters, toilets, residences, offices, bunkhouses, lodges, and fire towers (see figures 1–37 and 1–38 on pages 46 and 47). He considered his most notable projects as Mt. Magazine Lodge (1939), Wayah Bald Observation Tower (1938) (see figure 2–74 on page 103), and various bridge designs for Puerto Rico.

Also in Region 8, the CCC razed "undesirable structures" such as cabins and outbuildings left by former owners or occupants to prevent their use by squatters. In later years, only a few foundation stones and bases for chimneys remained to mark the site of these former mountain homes.

Among the notable structural achievements in Region 9 was the building of the Chippewa National Forest Headquarters in 1935 (figure 1–31). CCC and WPA craftsmen constructed a Finnish-style notch-and-groove log building. This is considered the largest log building of its kind; it was made of native

Figure 1–31. *Headquarters Building, Chippewa National Forest, Region 9*

red pine and finished with other local materials. The 50-foot stone fireplace was constructed with glacial boulders collected from the nearby area. This structure is listed on the National Register of Historic Places.

In Region 10, a significant Depression-era project was the Petersburg Ranger Station compound. When first requested in 1935, there was little hope of getting a Federal building for this small town in southeast Alaska. District Ranger J.M. Wyckoff aggressively pursued the project with other officials who needed office space. In the submittal to Congress, the Regional Forester noted, "It would be to our advantage to have a building which would also house the Customs Service Office, as it could during the Ranger's absence give the public information it might require ..." Emergency Relief Act funds purchased a 50- x 100-foot corner lot for $650. A Colonial Revival style two-story, split-foyer office building and adjoining garage were designed and constructed by locally hired CCC members. Each floor of the wood-framed building was 24 x 28 feet. A semicircular wooden arch marked the entrance of the otherwise plain, square structure.[10]

A common element in most of the buildings constructed by the CCC is the "pine tree" logo of the Forest Service and the Civilian Conservation Corps. Nationwide, the pine tree is found in many shapes, sizes, and forms on the buildings of that period. A good example is on the Gallop Ranger Station on the Mt. Baker-Snoqualmie National Forest in Region 6 (figure 1–32). Because the pine tree symbol appears on structures in all Regions of the Forest Service, it seems certain that a directive suggesting its inclusion in design was issued from the Washington Office. The phenomenon is too widespread to be a regional innovation, and it is limited to Forest Service structures. Pine trees were cut from single boards or formed by silhouettes joined by two boards; sometimes they were cut from one board and applied to another (figure 1–33).

Figure 1–32. *Residence, Gallop Ranger Station, Mt. Baker-Snoqualmie National Forest, Region 6 (1936)*

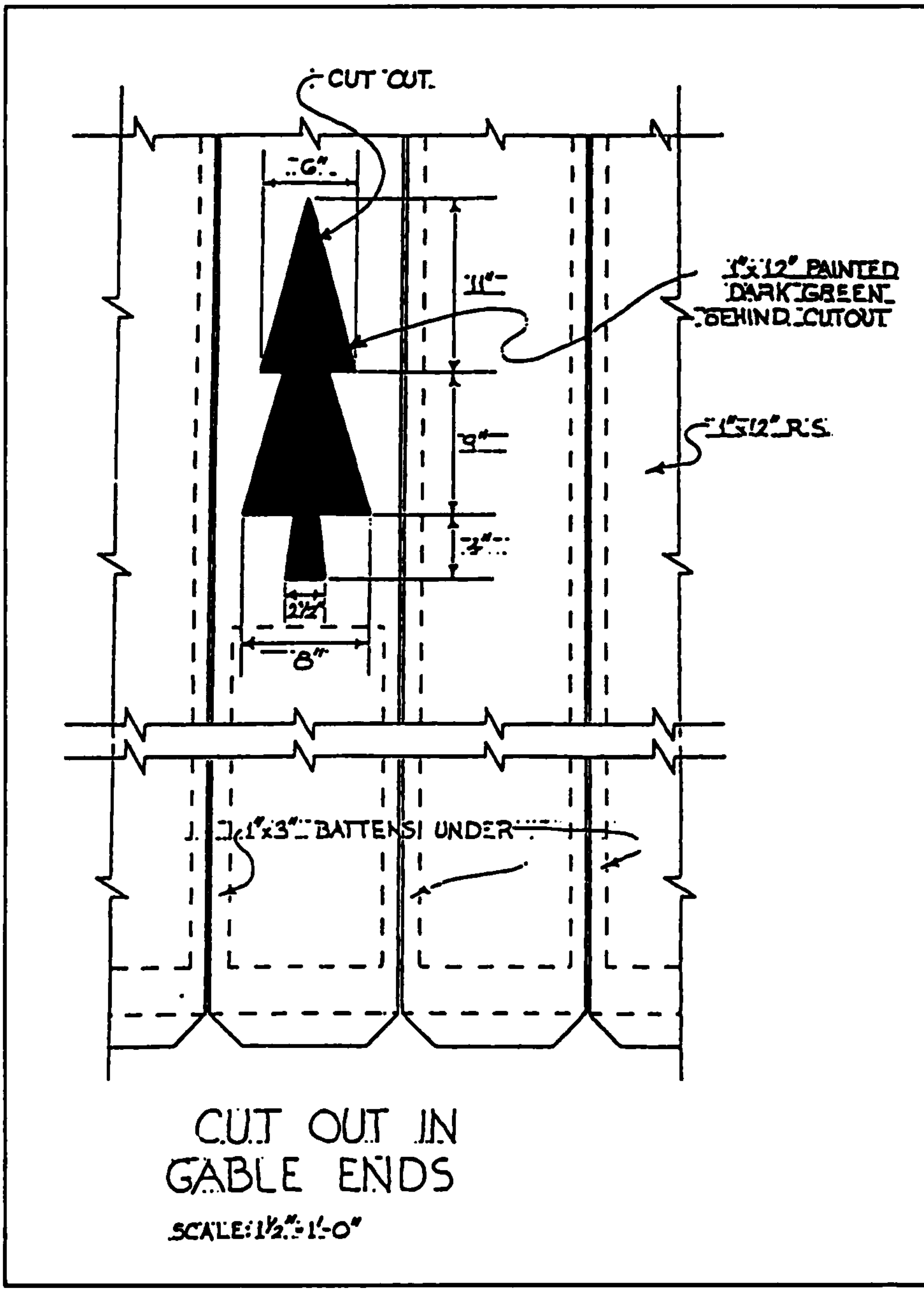


***Figure 1-33.** The distinctive pine tree logo was a common element in most of the buildings constructed by the Civilian Conservation Corps*

As end products of an important Federal response to the Depression, CCC constructions are associated with events that are significant in the Nation's history. Because they embody the distinctive characteristics of a period and type of construction, the rustic buildings on national forest lands are significant in American architecture; many exhibit excellence of design and possess high artistic values. Figures 1-35 through 1-41 show additional examples of the buildings built during this era.

In 1940, Ellis Groben, in *Architectural Trends of Future Forest Service Buildings*, attacked what he felt was "the inappropriate practice of designing buildings which did not work well in [floor] plan, but were accepted and even praised because their exteriors blended well with the environment." Though not abandoning his stance on the appropriateness of regionally responsive design, Groben called for more creativity in formulating, where appropriate, a style uniquely representative of the Forest Service.

When the declaration of war was issued in late 1941, the CCC crews were quickly inducted into the armed services. The program soon became history as the need for a make-work program diminished and the full focus of the Nation was put toward defeating the Germans and Japanese.

Shortly after the United States entered the war, it became apparent that much more natural rubber would be needed than might be available. Because of the demonstrated ability of the Forest Service to organize and handle emergency procedures, the Forest Service was selected to handle the guayule rubber project in the Southwest. Guayule, resembling sagebrush, was a natural shrub in this area, containing up to 20 percent natural rubber.[11]

A major part of this project was the design and construction of labor camps, and a large number of nurseries were set up to grow the guayule plants from seed to seedlings. Jim Byrne, then Regional Engineer in California, was named chief engineer for the project. He called together architects from Regions 1, 5, 6, and 9. Clyde Fickes from Region 1 was in charge with Harry Coughlan, also from Region 1, Keplar Johnson from Region 5, Gif Gifford from Region 6, and Nels Orne from Region 9 along with many support people who produced the plans and supervised the construction. Until the end of the war, when the project was disbanded, much of the focus of the Forest Service architects was designing and constructing the infrastructure for growing guayule plants. At the end of the war, two rubber extraction plants were operating, and plans were on the table for four more extraction plants. Approximately 6 million pounds of rubber were dispatched to rubber processing plants by the war's end.

At the end of the war, all of the architects named above returned to their previous positions as architects in the Regions. All but Harry Coughlan were Regional Architects. Harry became Regional Architect in Region 1 shortly after the end of the war.

Notes

1. Throop, *Utterly Visionary and Chimerical: A Federal Response to the Depression—An Examination of Civilian Conservation Corps Construction on National Forest System Lands in the Pacific Northwest*, p. 7.
2. Schneck and Hartley, *Administrating the National Forests of Colorado*, p. 60.
3. Ibid., p. 72.
4. Ibid., p. 88.
5. Supernowicz, p. 15.
6. Ibid.
7. Ibid.

8. Ibid.
9. Ibid., p. 18.
10. Joslin, pp. 229-230.
11. USDA Forest Service, *The History of Engineering in the Forest Service*, p. 6.

Forest Service Buildings of the CCC Era

Figure 1–34. *Warren Guard Station, Payette National Forest, Region 4 (1934)*

PHOTO BY LES JOSLIN

Figure 1–35. *Bly Ranger Station Office, Fremont National Forest, Region 6 (1936)*

***Figure 1–36.** Crown King Ranger Station barn and shop, Prescott National Forest, Region 3 (1936)*

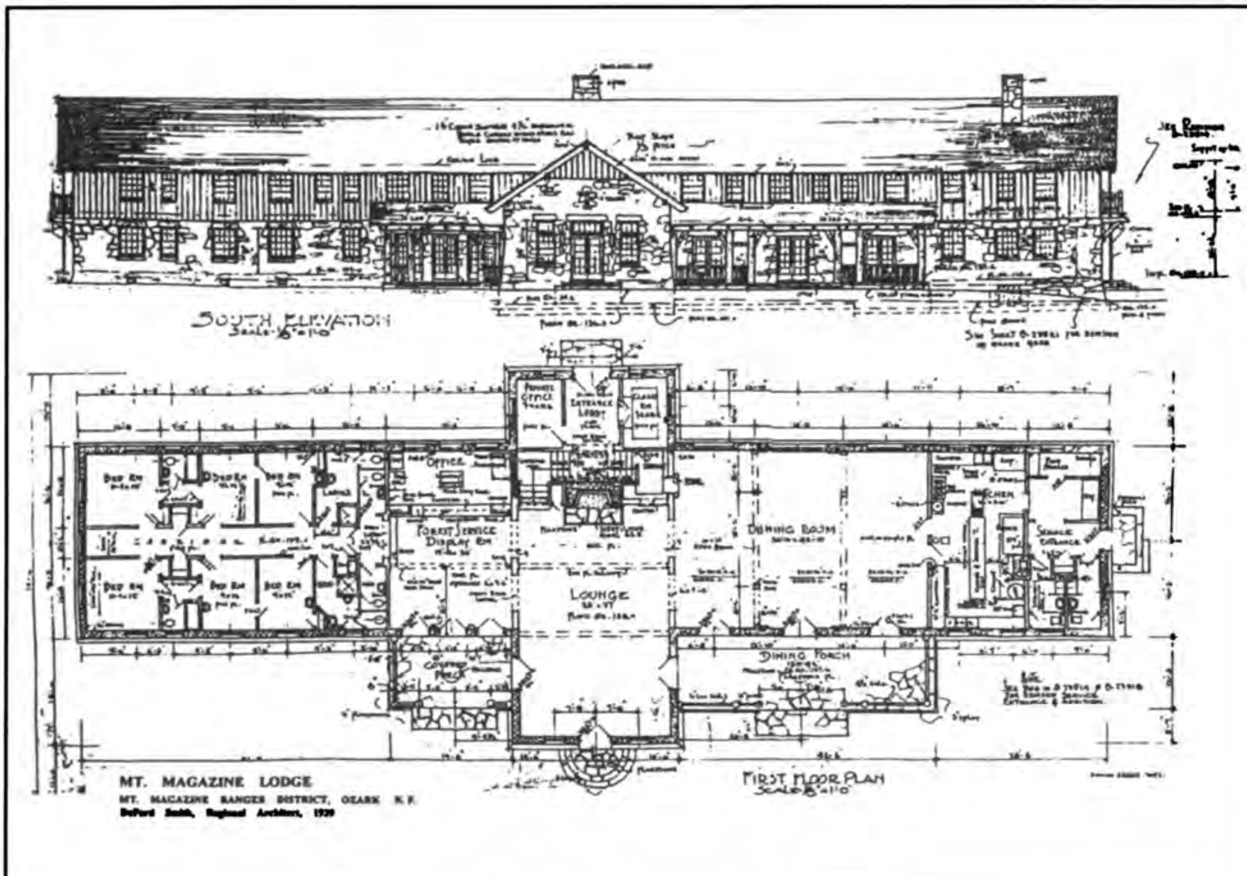


***Figure 1–37.** Mt. Magazine Lodge, Ozark National Forest, Region 8 (1939)*

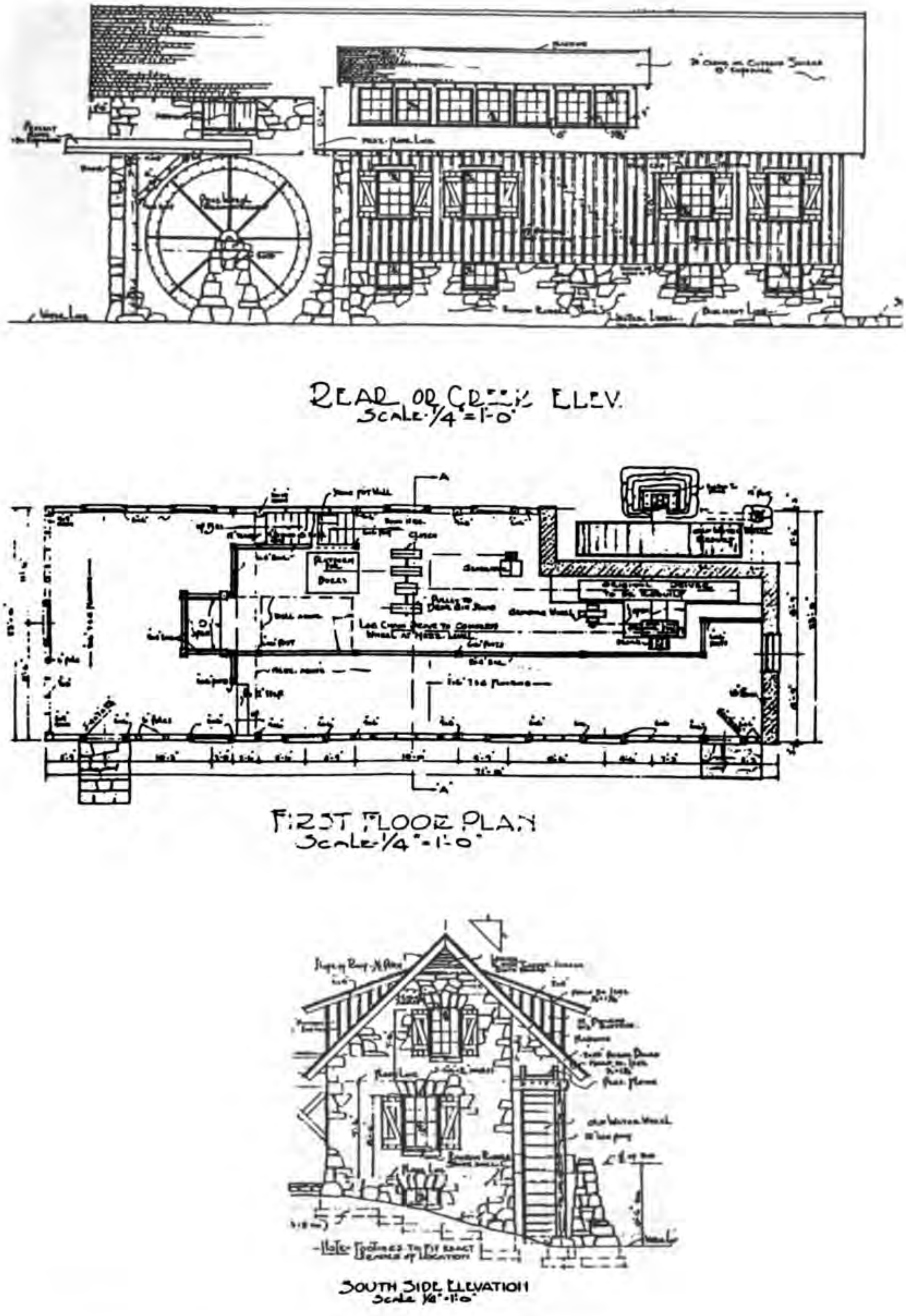


Figure 1–38. *Blanchard Springs Mill, Ozark National Forest, Region 8 (1938)*

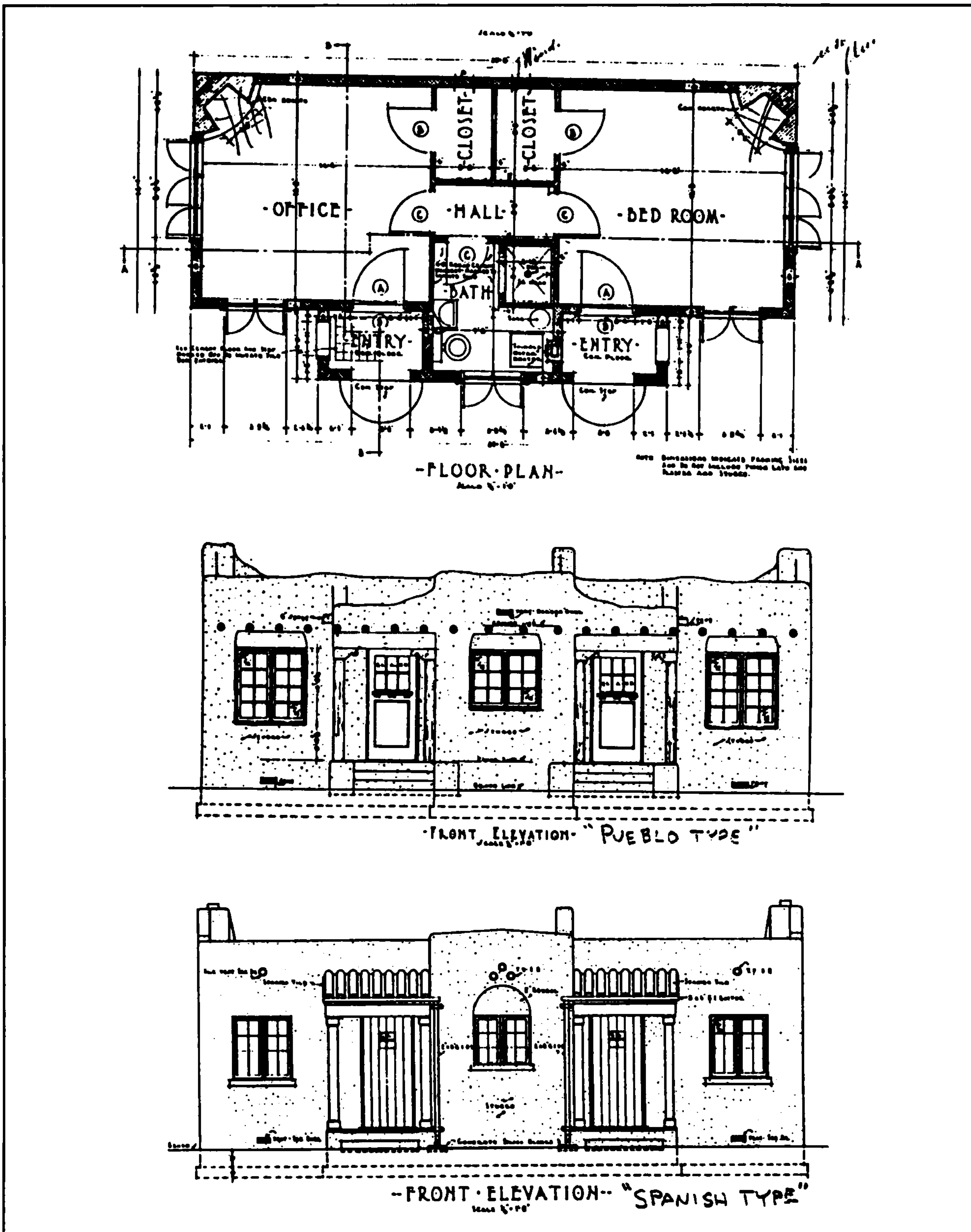


Figure 1-39. *Standard ranger office and quarters, Region 3, designed in the Spanish style*

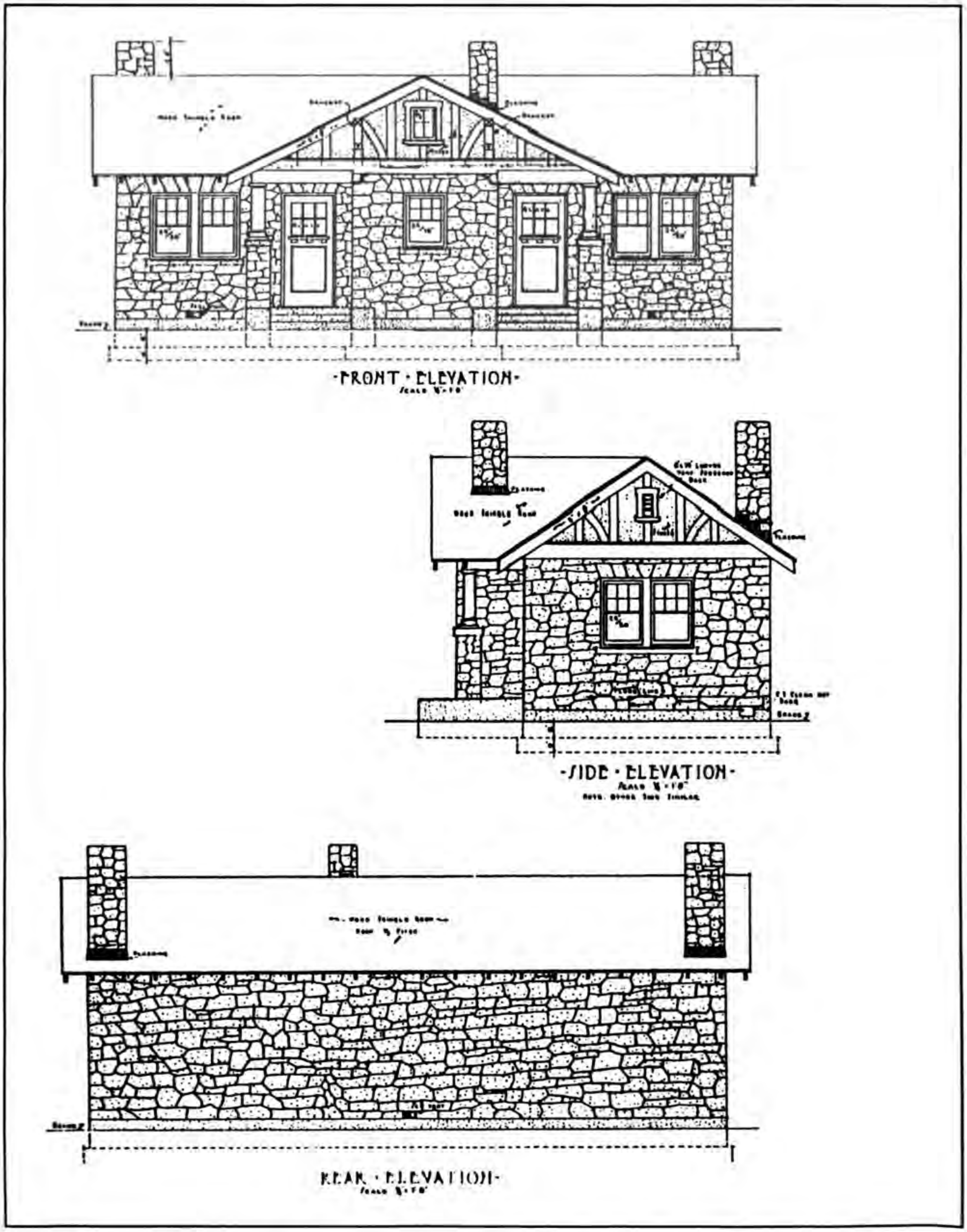


Figure 1-40. *Standard ranger office and quarters, Region 3, designed in the bungalow style*

1946–Present: The Modern Period

After the war, there were many changes in the focus and organization of the Forest Service. One was an increase in recreational use of national forest land, which led to a renewed emphasis on facilities construction, including campgrounds, restrooms, boat ramps, and trails. In 1947, 25 percent of the maintenance and improvement dollars were authorized for recreation improvements. The architects who had been working on the guayule project returned to their regional positions and started hiring new, younger graduate architects.

The era of handcrafted construction ended with the disbandment of the CCC. Attention shifted toward postwar plans for expansion. Projects in progress before 1942 were completed, but construction of new improvements had been halted by the war. Shifts in the use of the forests resulted in changes in administrative methods; some permanent ranger stations became "work centers," a new term coined to replace the outdated "guard station," which had acquired the wrong connotation during the war.

Regional Architects

The following paragraphs provide a brief outline of individuals who served as Regional Architects during this period. See Chapter 3, People, for more detailed information on the design styles of contributing architects.

At the start of 1946, Regions 2, 3, 7, and 8 did not have Regional Architects. This void remained in some Regions until the end of the 1950's or later.

In Region 1, Clyde Fickes left the Forest Service before the end of the war, and Harry Coughlan took over the position of Regional Architect. Most of the work just after the war was custodial, bringing the many buildings and stations that had been neglected back to standard and correcting safety hazards. The need for additional staff did not occur until the early 1950's, when Congress enacted legislation to provide improved and additional recreational facilities. Art Anderson was the first professional hired in Region 1 after the war, and he took over as Regional Architect when Coughlan retired in 1965. In 1972, Bob LeCain became Regional Architect and Anderson took over as administrative and planning leader. When LeCain retired in 1985, Dave Dodson took over the position and remained until 1990. Josiah Kim was the Regional Architect from 1990 to 1997.

In Region 2, W. Earle Jackson departed sometime in 1942 and the Regional Architect's position was not filled until Wes Wilkison was hired in 1958. When Wilkison retired in 1981, Dave Faulk became Regional Architect.

Region 3 did not have a Regional Architect of record until George Kirkham was hired in the mid 1960's. George Nichols did building designs for the Region from Ogden during the CCC era. After Kirkham left, Lou Archambault took over the position. Soon after, Hal Miller transferred from Portland to become Regional Architect. In the early 1990's, Kurt Kretvix became Regional Architect.

George Nichols in Region 4 was not part of the guayule project. There are no records during the war years to indicate whether he went into the military or just continued working for the Forest Service. In 1946, he was listed as the Regional Architect. William Turner was hired in 1958 to assist in the design work and took over as Regional Architect when Nichols retired. When Turner retired, Wilden Moffett took over the post of Regional Architect.

Keplar Johnson returned to his position as Regional Architect in Region 5 after the guayule project. Like most American architects, he was increasingly influenced by the modern movement in architecture after World War II. In several of his postwar buildings, Johnson continued the design themes that had marked the Region's building program of the 1930's. But even in these structures, Johnson was influenced by the ideas of the modern movement. Johnson revised many of Blanchard and Maher's plans and designed a number of new plans for specific sites within the Region.

After Johnson's retirement in 1962, Harry Kevich was named Regional Architect. Kevich increased the architectural staff by hiring young architects just out of college. He played a more managerial role and delegated most of the design work to this staff. They developed a more contemporary, modern style building for the California Region. Bob Sandusky became Regional Architect upon Kevich's retirement in 1985.

Tim Turner continued as Regional Architect in Region 6 during the war years, and he continued to work until a heart attack caused an untimely death in 1951. A.P. "Benny" DiBenedetto was hired to replace him from the Army Corps of Engineers. When DiBenedetto took over as Research Architect for the Pacific Northwest Station, Ken Reynolds was named Regional Architect. When Reynolds left, Joe Mastrandrea served as Regional Architect. JoAnn Simpson was Mastrandrea's successor.

Region 8 was without a Regional Architect from 1942, when DeFord Smith departed, until 1968, when William Speer was hired. Because there was no lead architect in Atlanta, Speer went to San Francisco to serve an apprenticeship under Harry Kevich and John Grosvenor. Speer spent a year working in Region 5, doing the designs for Region 8, before returning to Region 8 to continue as Regional Architect.

Nels Orne returned from the guayule project in 1945 and continued as Regional Architect in Region 9, where he worked until his appointment to Branch Chief for Facilities in 1965. His successor was Jim Calvery from Region 5. Upon Calvery's retirement, Dave Dercks was named Regional Architect.

Shortly before World War II, Linn Forrest transferred to Juneau to serve as the first Regional Architect for Region 10. His tenure did not last very long, as he and his son opened a private practice in Juneau in 1952. After Forrest left, George Danner, a technician, provided leadership in the design and maintenance of buildings until his retirement. At this time, there is no professional architect in Region 10.

Projects

In 1952, improvement projects nationwide were focused on rehabilitation, relocation, replacement, or reconstruction of older facilities. The Chief's message again emphasized the need for prior approval for construction projects to ascertain whether the project was essential to efficient program operation. In the mid-1950's, funding for construction remained low—only $100,000 was available nationwide. The following years were characterized by continued decentralization, specialization, and increasing workloads for rangers and staff. Forest engineers bore the responsibility of overseeing improvement programs on individual forests.

The early 1960's ushered in another era in Forest Service administration that demanded an architectural response. New "make work," educational, and other social economic programs brought accelerated public works, Job Corps, prison labor camps, Youth Conservation Corps, and other programs to the national forests. These work programs provided educational opportunities, vocational training, and practical skills in construction and other forestry activities for young and unemployed people. Congress allocated enormous funding for these and similar programs, which brought the Forest Service a huge influx of design and construction projects (figure 1–41).

In the 1970's, the emphasis turned to clean water. Water pollution abatement brought the Forest Service many millions of dollars to provide modern campgrounds and sewer systems to serve recreational and administrative sites. Since the early 1960's, the architectural staffing in the Regions had grown to be equal to or greater in size than that of the CCC era. About this time, there was a reduction in Job Corps centers in several Regions (Cali-

Figure 1–41. *Trapper Creek Job Corps Center, Bitterroot National Forest, Region 1 (1965)*

fornia, for example, went from five centers to none). As of this date, there are still six centers in Region 8 as well as centers in Regions 1, 2, and 6.

Forest Service Research relied on the Regions to provide the design and maintenance of the buildings on the experimental forest and station headquarters and laboratories. A.P. "Benny" DiBenedetto was the first professional architect hired on staff to do the designs for the Pacific Northwest Experiment Station in 1961. Bob Sandusky was hired by the Pacific Southwest Station in 1965. The other research stations continued to rely on the Regions or private architectural firms for their building designs. The North Central Station is the only research station that still has an architect on staff.

Beginning in the 1960's, the architectural staffs in the Forest Service took on a more philosophical design approach rather than concentrating on specific styles or themes. Contrary to Groben's dictates of the 1930's, architects produced designs that fused the modern with the vernacular of the past, seeking designs appropriate for the forest environment and comparable with the existing buildings on the sites.

Some of the new, innovative programs and projects like the Job Corps, accelerated public works, the Clean Water Act, and visitor centers have allowed the Regions to hire additional architectural staff. In addition, cooperative work with other agencies has allowed additional use of recently graduated architects.

Chapter 2 Building Types

"The fate of the architect is the strangest of all. How often he expends his whole soul, his heart and passion, to produce buildings into which he himself may never enter."

—Johann Wolfgang von Goethe, *Elective Affinities*

Administrative Buildings

The category of Forest Service buildings with the greatest number and most diverse types is administrative buildings. These cover all areas of work and living needs. Lookout towers are part of this group, but will be covered separately. Administrative buildings include offices, dwellings, barracks, messhalls, bunkhouses, warehouses, shops, fueling stations, and nursery buildings. Architectural styles tend to fall into eras, location within the Nation, and local trends and materials available. There is more consistency within each site, at least regarding materials.

In the earlier eras, the plan layout for buildings was limited by availability of designers and the buildings' functions. Most of the 1938 "Acceptable Plans" book covered administrative buildings, giving many floor plans and various elevation styles. As the first Service-wide compilation of this type, most of the Regions used it only as a starting point for their designs and did not copy the individual buildings.

There is more continuity within the various Forest Service Regions throughout the eras than there is between Regions during an era. Traced to climate, local materials available, and overlap of personnel between the eras, this can be seen in the regional plans and elevations shown in the 1938 "Acceptable Plans" book. Another difference between Regions is the year the first architect was brought on staff.

Offices

Through the various eras, the need for and the size of office buildings has changed tremendously. At the start, Forest Service contact with the public was limited and a small room rented in the nearest town was sufficient. It was not until the 1930's that buildings with the primary use of office space and public contact were required and constructed. Even then they were one to four rooms located in the nearest town to the forest land being managed. After World War II until the 1970's, the largest district offices had only 5 to 15 rooms, but with a better public contact area. Supervisors' offices during the 1930's and 1940's were smaller than district offices in the 1980's.

The design and styles of offices follow the regional styles and eras described in chapter 1. Not until the modern era were the differences between Regions dependent upon who was the design architect rather than the direction of the agency. Once the "Acceptable Plans" book went out of favor and there was no architect in the Washington Office, the Regions began to establish their own design style (sometimes even within a Region there were State styles). There was still a predominant use of wood with pitched rather than flat roofs, but as we approach the present day, more and more of the materials conform to the regional standards. Figures 2–1 and 2–2 and the photos and drawings on pages 68 through 80 show these variations in design and style.

Figure 2-1. *Blue Ridge Ranger Station Office and warehouse, Blairsville, Georgia*

Figure 2-2. *Groveland Ranger District Office, Groveland California, Region 5 (1991)*

The only Regional Office designed and constructed by the Forest Service is in Ogden, Utah (figures 2-3 and 2-4). George Nichols, the newly hired Regional Architect for Region 4, was given the task to develop plans for a Government-owned structure when the leased office first occupied in 1909 became inadequate. He presented his concept for a square four-story building near the center of town to the Regional Forester in October 1928. After submission upward, Senator Reed Smoot of Utah came to Ogden. He agreed that the Forest Service should remain in Ogden and stated that he would support the new office. He passed this information on to the Treasury Department, then responsible for Federal buildings. They sent W. Arthur Newman, District Engineer, Treasury Department Field Force, Office of the Supervising Architects, San Francisco, California, to Ogden to make a study of the leased building occupied and the plans developed by Nichols. Newman went through the entire building with Nichols and the Regional Forester and agreed with the Forest Service proposal.

The Second Efficiency Bill, which passed both houses of Congress in February 1931 and was subsequently signed by the President, included $300,000 for the building. As with many political issues, along with the appropriation of dollars came directions from above. In this case a local architectural firm, Hodgson-McClenahan, was given the responsibility for preparing the final contract documents, using much of what Nichols had recommended and documented. The final building was a brick and terra cotta Art Deco structure, three stories of offices with a basement and a greenhouse on the roof.

The construction contract was awarded to Murch Brothers of St. Louis for $229,000. The National Lumbermen's Association wrote a letter objecting to the design and requesting a greater utilization of wood in the construction of the building. Several changes were made: wood piling, wood frames and sashes on the first floor, hardwood floors (oak) for all offices, wood bases, and wood trims on the first floor.

Housing

Provision for housing of Forest Service employees has been a need since the earliest days. Tents and lean-to's to log cabins were the prevalent housing during the first era of the agency. Later, when families stayed with the rangers and offices were set up in town, more sophisticated dwellings were built on the same compound as the office and warehouse or storage area or near them on another lot (figure 2-5).

Figure 2-3. *Region 4 Office, Ogden, Utah (1933)*

Figure 2-4. *Entrance detail, Region 4 Office*

Figure 2–5. *Ranger Residence, Pestigo Ranger Station, Nicolet National Forest, Region 9 (1936)*

When fire suppression and timber sales became part of the administration of the National Forests, there came a need for housing for crews. Early barracks were just residences with extra bedrooms and a larger kitchen and dining room. In the 1930's, crews were larger and totally male, so the housing for crews included bunk rooms, lounges, large bath facilities, and kitchen and dining areas (figures 2–6 and 2–7).

There was very little change in single-family dwellings and crew quarters during the next 30 years except for materials and styles based on the Region. In the 1960's, several changes created different design approaches. First, the crews became larger and more diversified (fire, timber, recreation, lands, wildlife, and so forth) and worked in the field in different seasons. The buildings took on a character of either meeting the needs of a special workgroup such as a fire crew (figure 2–8), or the crews were housed in separate smaller buildings (see figures 2–40 and 2–41 on page 81 for some examples). Another trend during this phase was the use of trailers as portable camps that would follow the work. In California, one forest had more than 100 small trailers that were taken to the field in the spring and stored at lower elevations during the winter.

When the Job Corps was founded during the Johnson Administration, the Forest Service was one of the major players in providing space and work for this new venture. The first centers were trailers or modular structures purchased under Department of Labor design standards. Because there were so many being started at the same time, long delays in delivery were encountered, so the various Regions went into a crash design program to construct stick-built structures for the centers. Many of the trailers did not last very long. Region 5 and the Bureau of Reclamation in Denver were

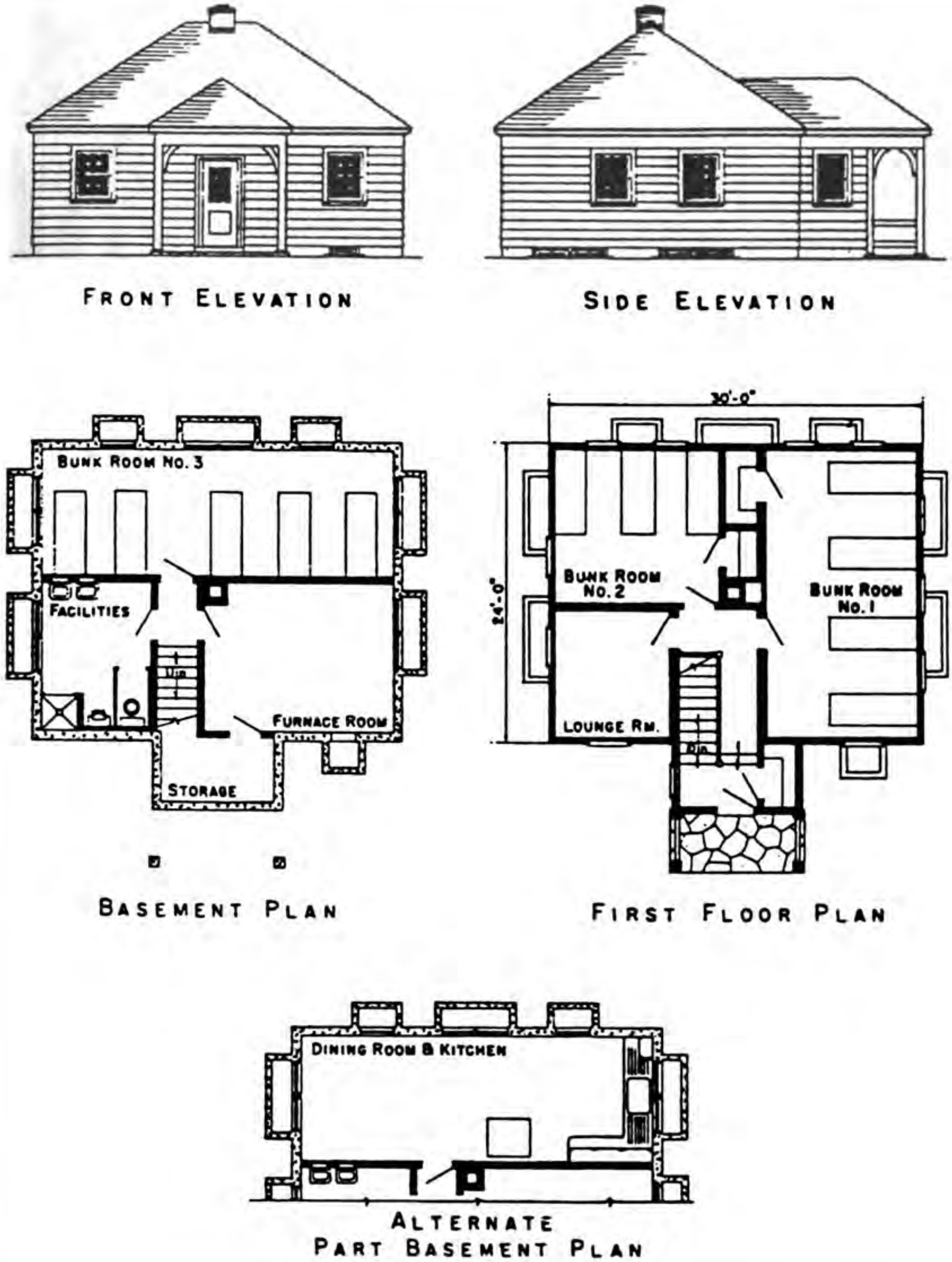


Figure 2–6. *Bunk house, Region 1*

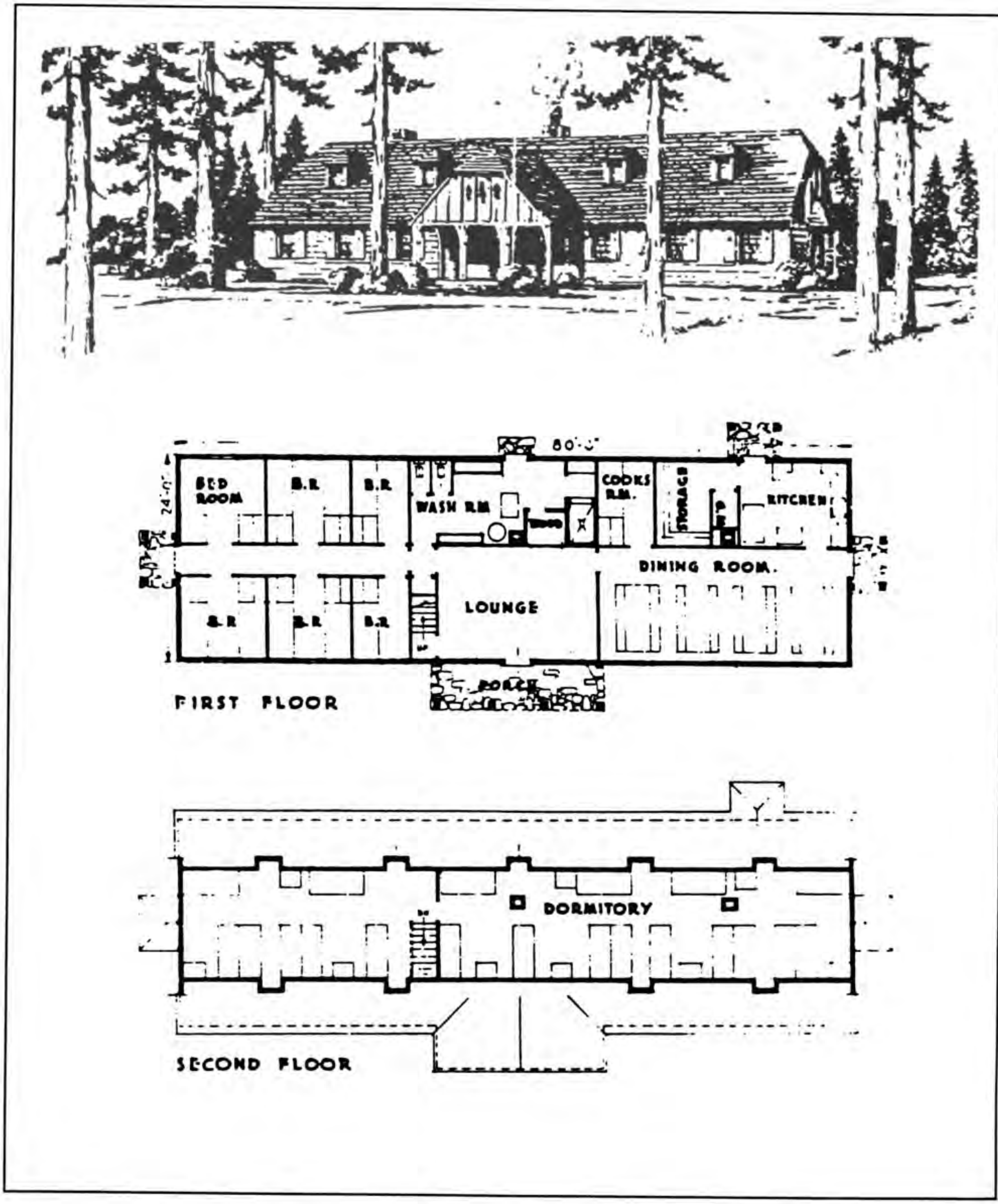


Figure 2–7. *Thirty-person crew house, Region 6*

Figure 2–8. *White Oaks Fire Station, Los Padres National Forest, Region 5 (1967)*

given the task of designing replacement buildings for these damaged trailers. A concept of pole buildings was developed for housing and dining facilities (figures 2–9 and 2–10). The architects in California were given Certificates of Merit by Chief Ed Cliff for their work (see figure 3–15 on page 216).

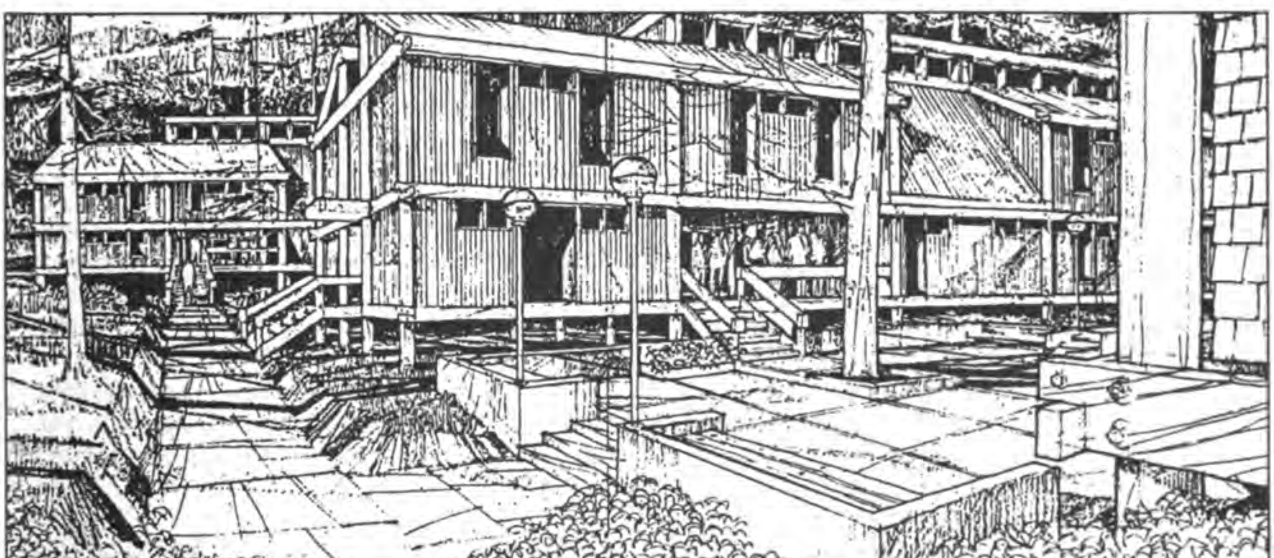


Figure 2–9. *Concept for Job Corps dormitories*

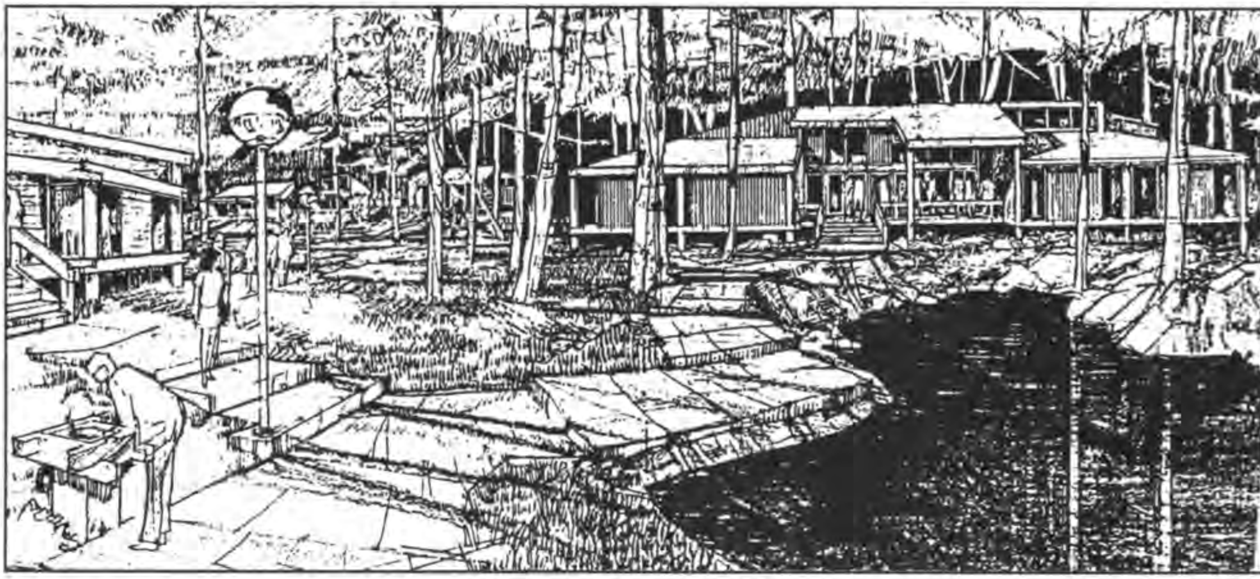


Figure 2–10. *Concept for Job Corps kitchen and messhall*

Warehouse and Storage Facilities

Few of the Forest Service warehouse and storage facilities are unique to the agency. As with any organization that provides its own facilities to cover all administrative activities, many diverse building types are needed. During most of its history, the Forest Service has owned a fleet of automobiles and trucks; therefore, the need for autoshops has been a necessity (figure 2–11). Also, since many of the areas administered are in the mountains, horse and mule barns, including hay storage, have been needed (figure 2–12). Warehouse and storage buildings have been needed for firefighting supplies and equipment, recreation, operation and maintenance, and timber management, as well as for other specialized forest management activities. Additional examples of warehouse and storage building designs can be found in Figures 2-56 through 2-60 on pages 89 to 91.

Nursery Buildings

Sometime in the early 1900's, the Forest Service started a tree planting program to regenerate the forests after tree harvesting and fires (figure 2–13). The buildings required for these processes—germination of seeds, packing of seedlings after lifting from growing beds, storage of seedlings until planting, and so forth—provided challenges to the designers and architects. Examples of successful nursery building projects include the administration building at the Savenac Nursery in Region 1 (figure 2–14). The Savenac Nursery has operated continuously since it was established in 1909 near Haugen, Montana.

A tree storage building at the Mt. Shasta Nursery in California designed in the early 1940's had 12-inch-thick walls filled with redwood bark to keep the trees in a dormant state from November until planting in April or May of the next year. Another cold-storage building can be found at the Placerville Nursery (see figure 2–15). The most recent nursery complex designed and constructed was in Albuquerque, New Mexico, in the mid-1980's.

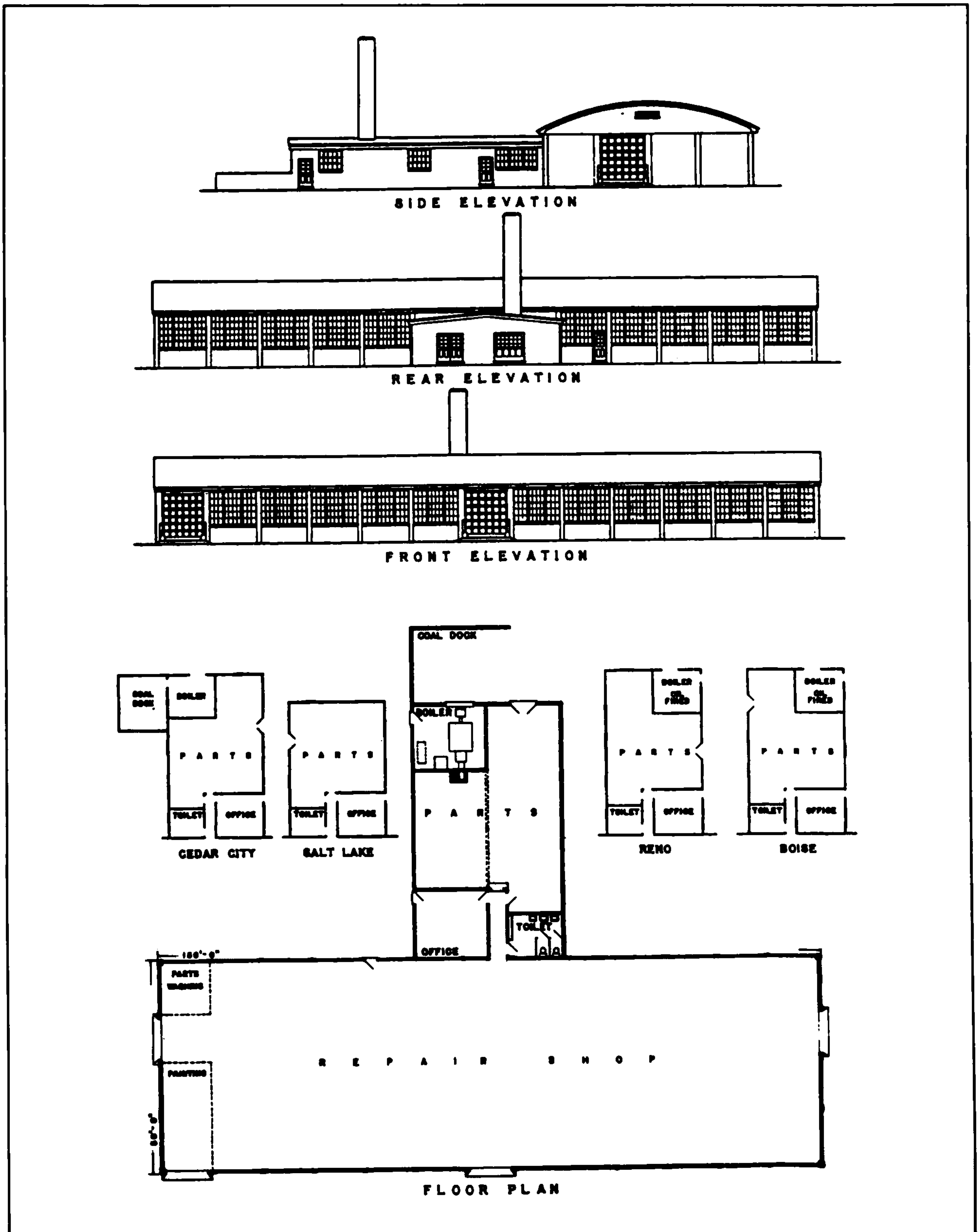


Figure 2-11. *CCC Central Repair Shop, Region 6*

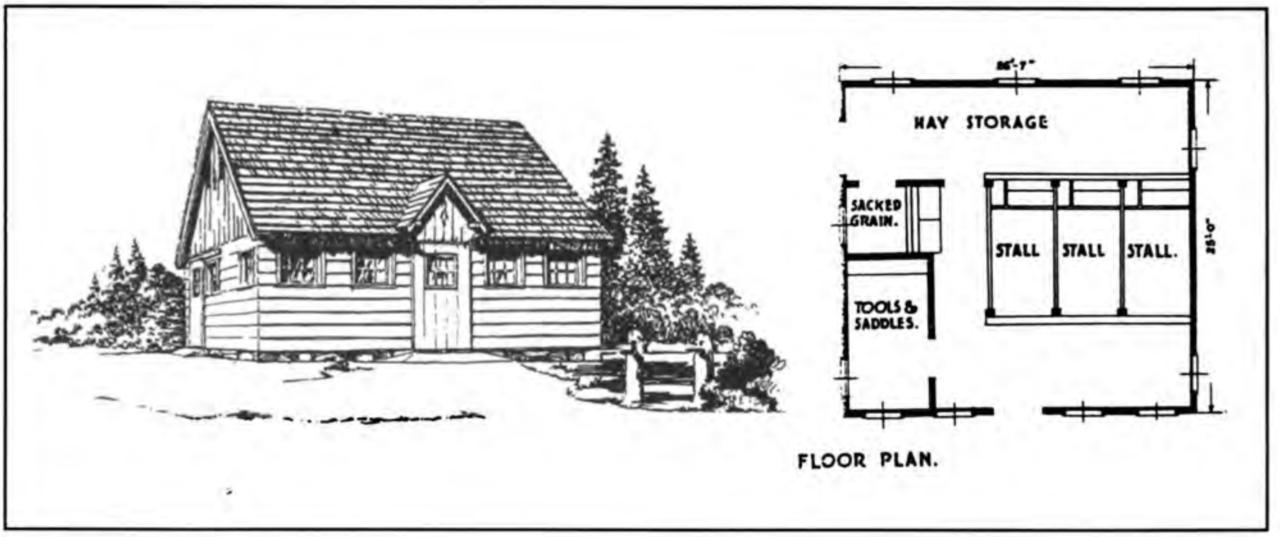


Figure 2–12. *Three-horse barn, Region 6*

Specialized Fire Suppression Facilities

In the late 1950's and early 1960's, a major change came to Forest Service fire management operations as the airplane became a major player in fire suppression. Three Regions took the most active role in providing the new buildings and amenities at airports near small communities. Region 1 built at Missoula, Montana; Region 5 at Redding, California, and Region 6 at Redmond, Oregon. Examples of these types of buildings can be found in Figures 2–61 through 2–63 on pages 92 and 93.

Figure 2–13. *Western yellow pine beds, McCloud Nursery, Shasta National Forest, California (1914)*

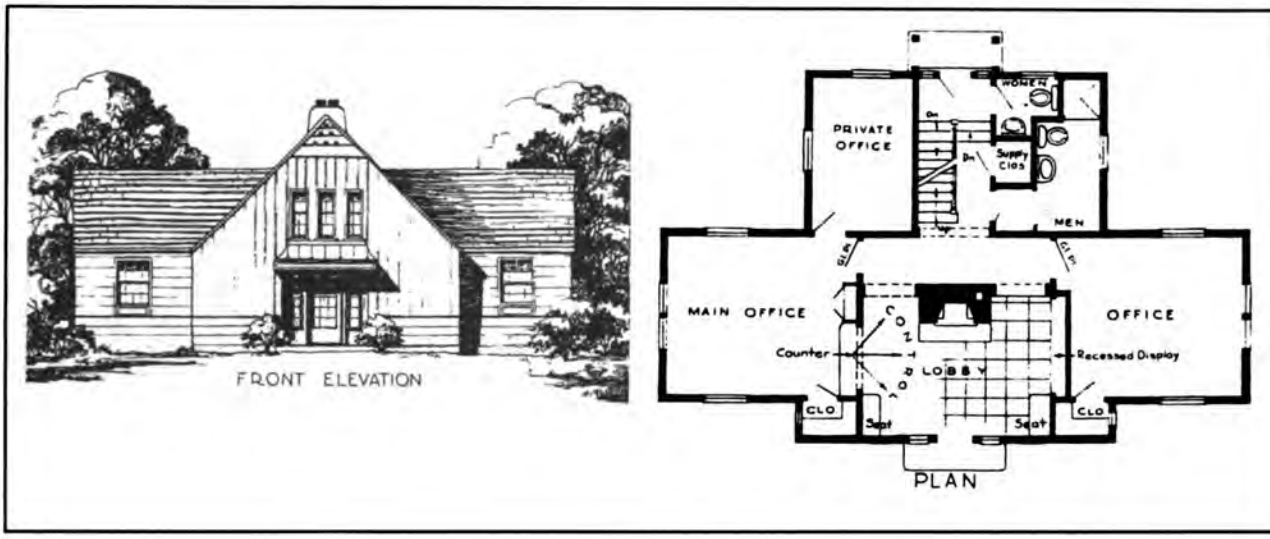


Figure 2-14. *Administration Building, Savenac Nursery, Region 1*

Figure 2-15. *Cold Storage Building, Placerville Nursery, Region 5 (1980)*

Gallery of Forest Service Administrative Buildings

Offices

Figure 2–16. *Minarets Ranger District Office, Sierra National Forest, California*

Figure 2–17. *Brush Creek Office, Grand Mesa National Forest, Region 2 (1936)*

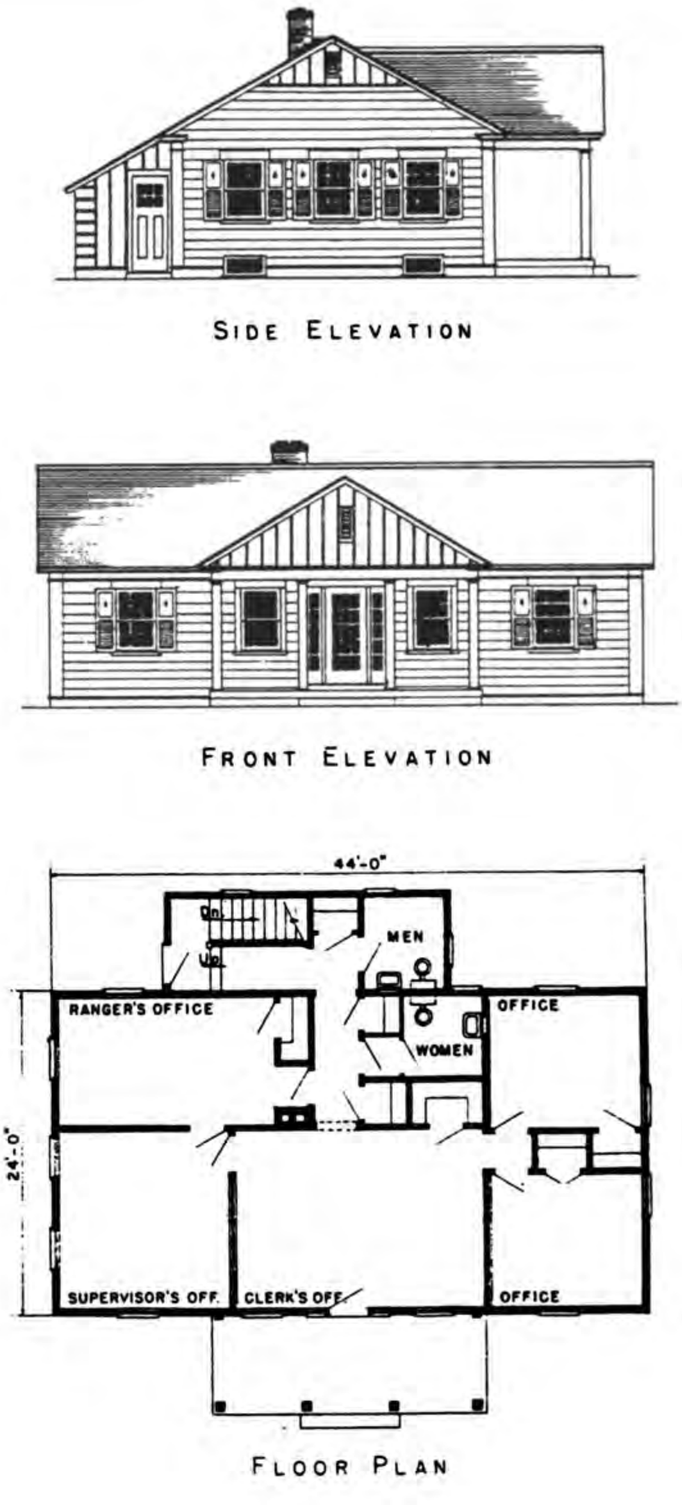


Figure 2-18. *Office Building, Region 4*

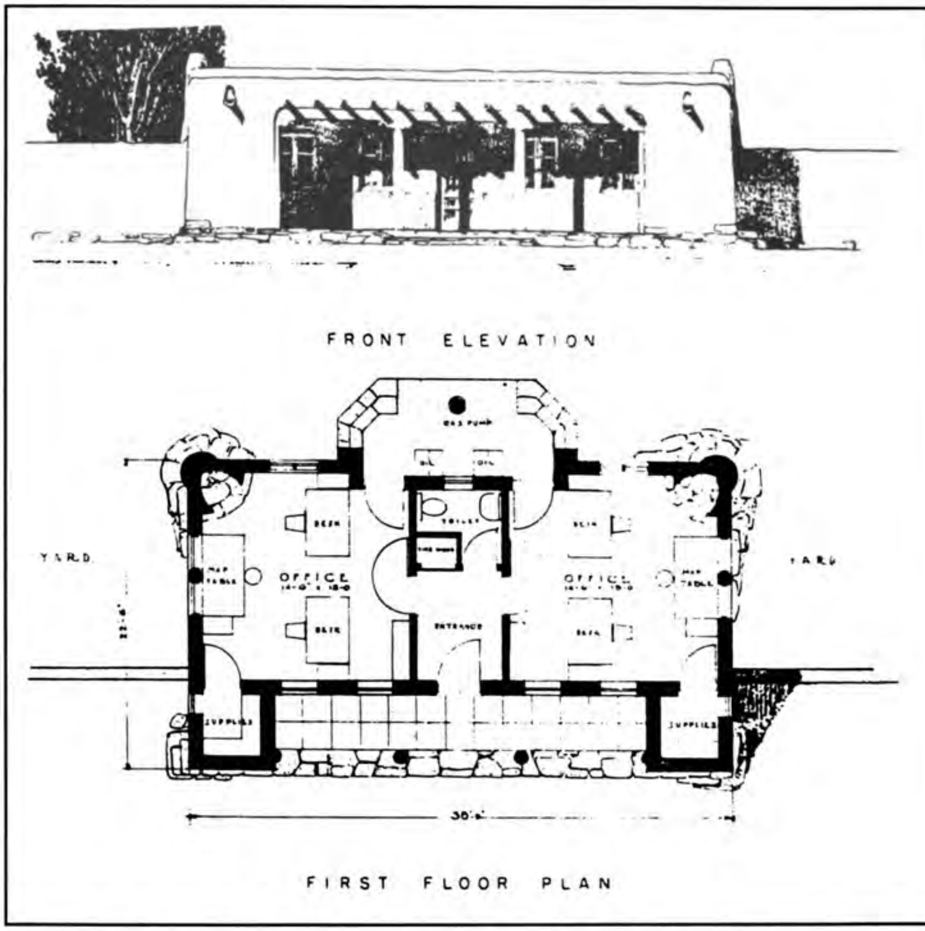


Figure 2–19. *Magdalena-Augustine District Office, Cibola National Forest, Region 3 (1938)*

Figure 2–20. *Quilcene Office, Olympic National Forest, Region 6 (1968)*

Figure 2-21. *Quinault Ranger Station, Olympic National Forest, Region 6 (1974)*

Figure 2-22. *Big Sur Multiagency Office, Los Padres National Forest, Region 5 (1989)*

Figure 2–23. *Hebo District Office, Siuslaw National Forest, Region 6 (1972)*

Figure 2–24. *Black Hills National Forest Supervisor's Office, Custer, South Dakota, Region 2 (1980)*

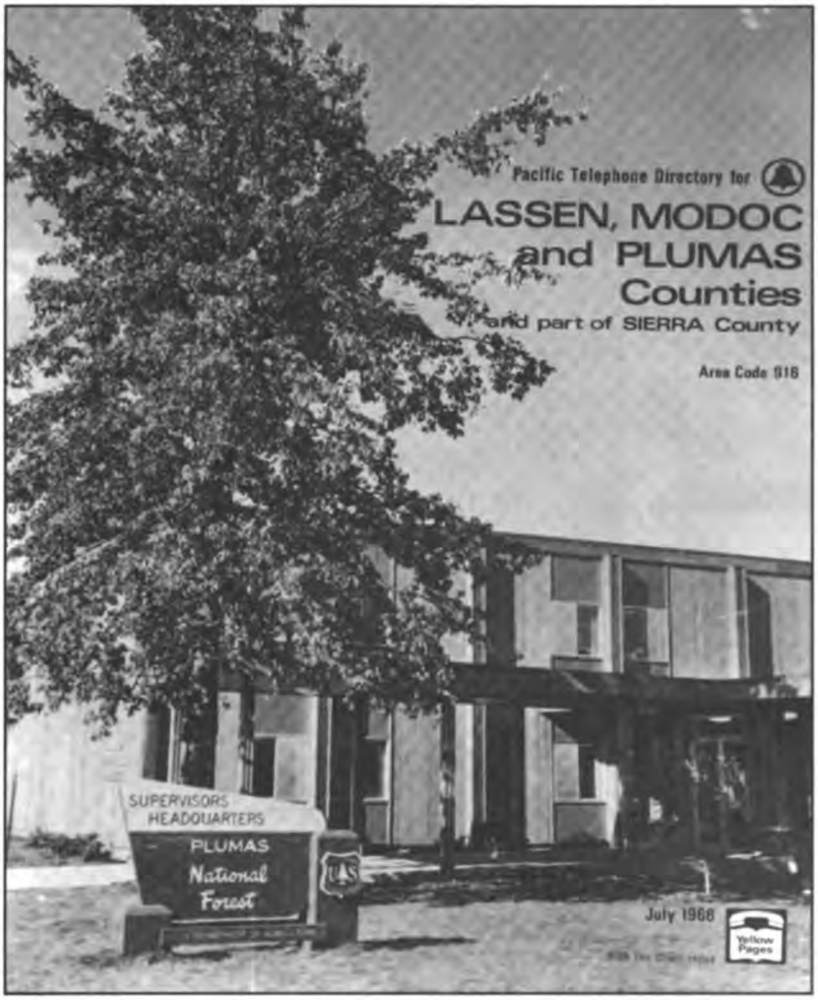


Figure 2–25. *Plumas National Forest Supervisor's Office, Quincy, California, Region 5 (1962)*

Figure 2–26. *Sawtooth National Recreation Area Ranger Office, Ketcham, Idaho, Region 4 (1978)*

Figure 2-27. *Pecos Ranger Station, Santa Fe, New Mexico, Region 3 (1994)*

Figure 2-28. *Supervisor's Office, Bridger-Teton National Forest, Region 4 (1966)*

Figure 2–29. *Mount Rogers Ranger Office, Jefferson National Forest, Region 8*

Figure 2–30. *Tuskegee Ranger Office, National Forests of Alabama, Region 8*

Figure 2–31. *Sanpete District Office, Manti-LaSal National Forest, Region 4 (1994)*

Figure 2–32. *Entrance detail, Sanpete District Office, Manti-LaSal National Forest, Region 4 (1994)*

Figure 2–33. *Lost River District Office, Challis National Forest, Region 4 (1983)*

Figure 2–34. *Wise River Ranger Office, Beaverhead National Forest, Region 1 (1982)*

Figure 2–35. *Box Elder Job Corps Center Office, Region 2 (1974)*

Figure 2–36. *Catalina Ranger Office, Caribbean National Forest, Region 8 (1980)*

Figure 2–37. *Saguache Ranger District Office, Rio Grande National Forest, Region 2 (1985)*

Figure 2–38. *Bienville Ranger Office, Bienville National Forest, Mississippi, Region 8 (1980)*

Figure 2–39. *Ketchikan Ranger District and Misty Fiords National Monument Administrative Offices, Ketchikan, Alaska, Region 10 (1986)*

Figure 2–40. *Black Rock Crew Quarters, Sequoia National Forest, Region 5 (1969)*

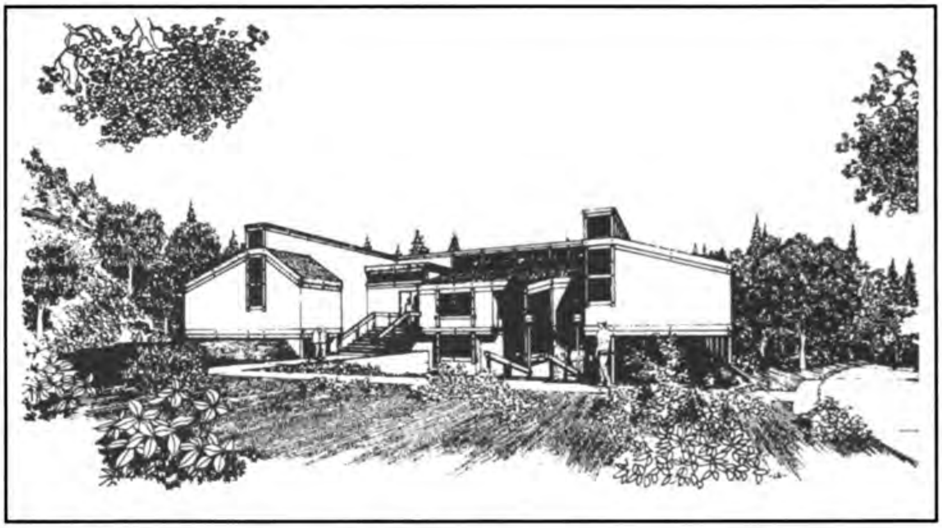


Figure 2–41. *Dalton Barracks, Angeles National Forest, Region 5 (1974)*

Figure 2–42. *West Yellowstone Barracks, Gallatin National Forest, Region 1 (1972)*

Figure 2–43. *Ten-person barracks, Tyrrell Work Center, Bighorn National Forest, Region 2*

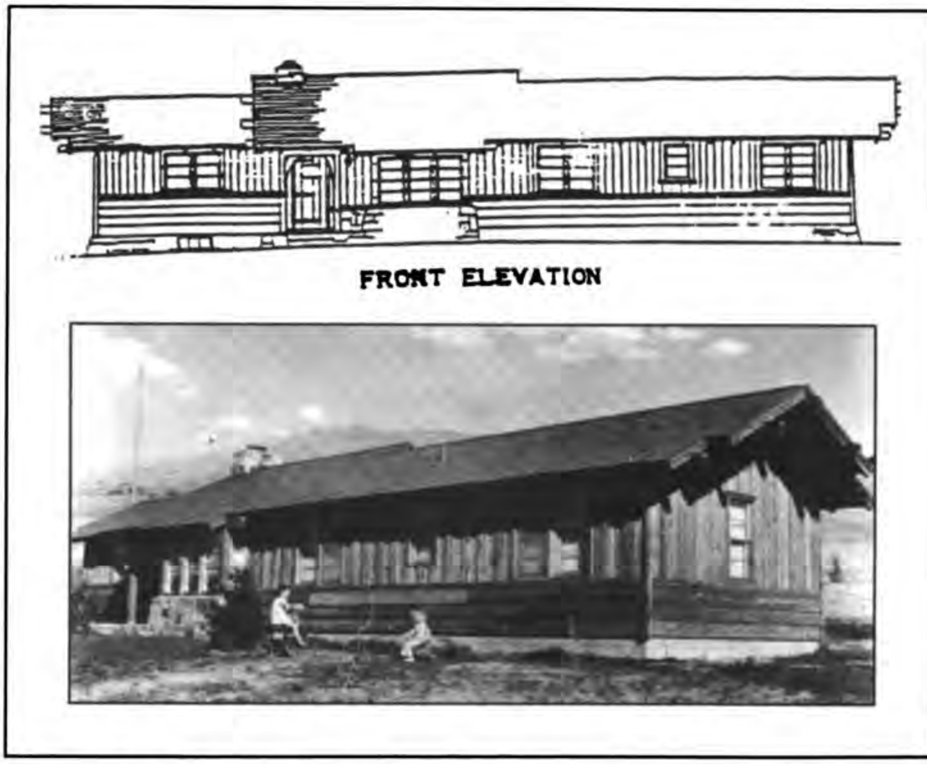


Figure 2–44. *Philipsburg Ranger Station residence*

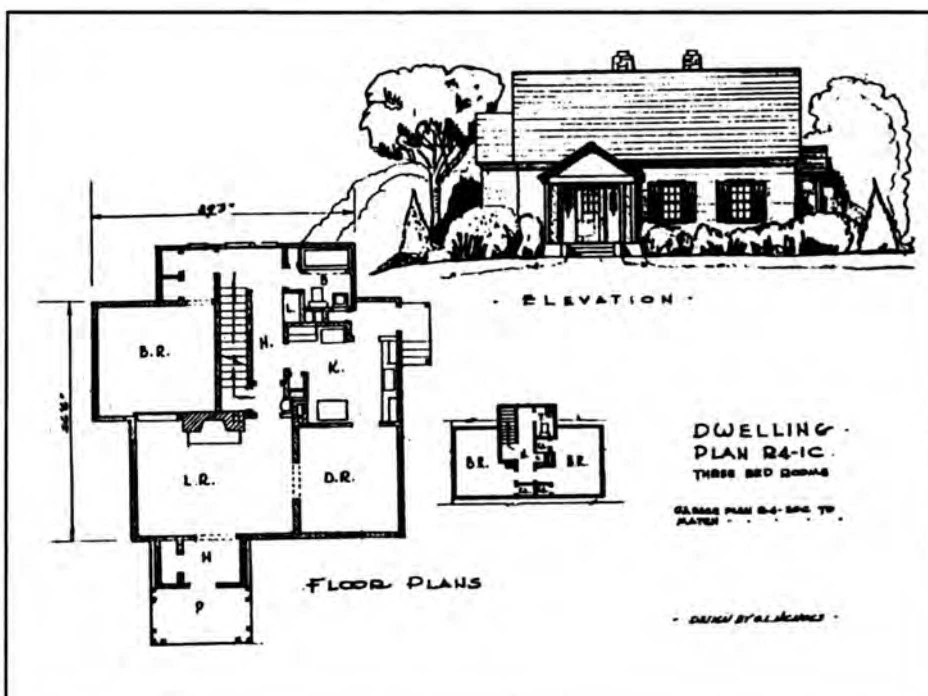


Figure 2–45. *Three-room dwelling, Region 4*

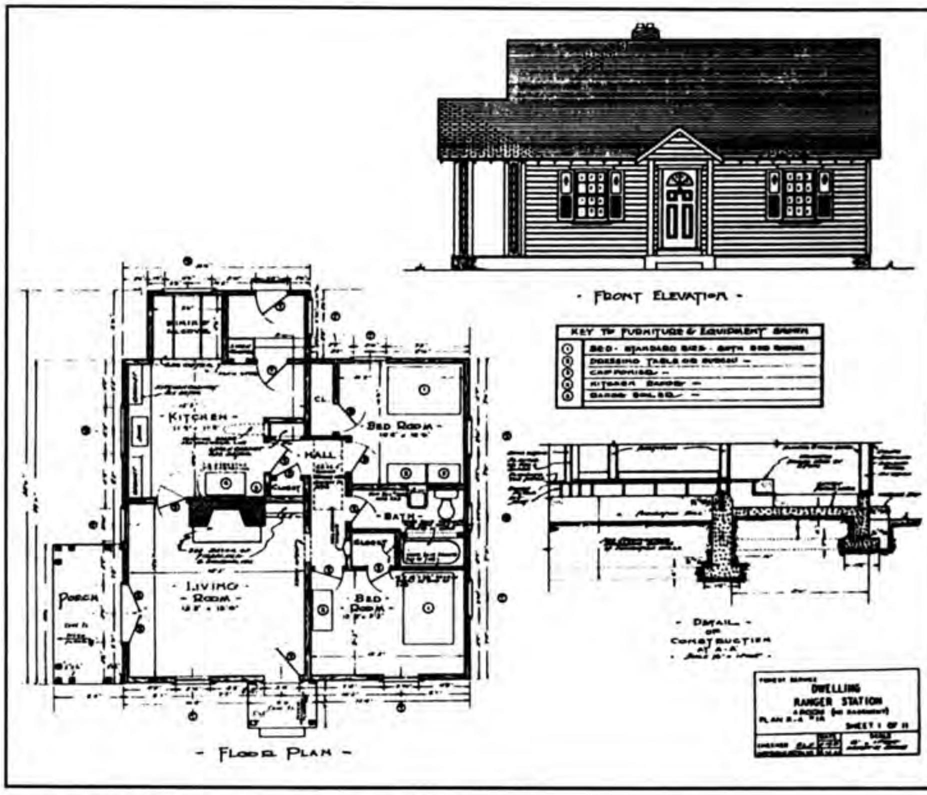


Figure 2–46. *Four-room dwelling, Region 4*

Figure 2–47. *Residences, Avery Ranger Station, Panhandle National Forest, Region 1 (1982)*

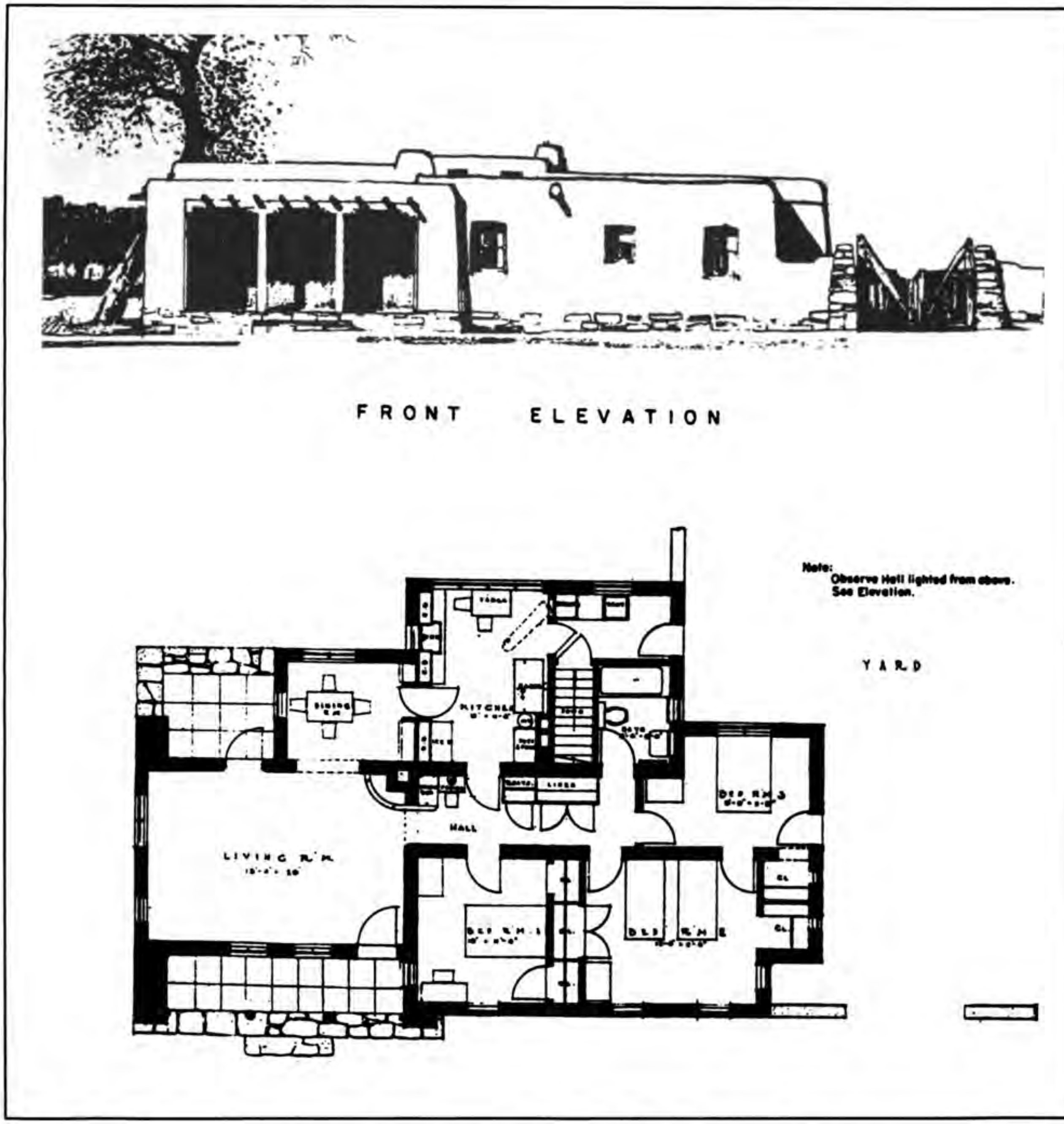


Figure 2–48. *Ranger district capitan dwelling, Lincoln National Forest, Region 3 (1938)*

Figure 2–49. *Residence, Bailey Ranger Station, Pike National Forest, Region 2 (1937)*

Figure 2–50. *Supervisor's residence, Clear Creek Ranger Station, Arapaho National Forest, Region 2 (1939)*

Figure 2–51. *Nurseryman's residence, Monument Nursery, Pike National Forest, Region 2 (1939)*

Figure 2–52. *Concrete-block residence, Angeles National Forest, Region 5 (1960)*

Figure 2–53. *Pole building in snow country, Sequoia National Forest, Region 5 (1970)*

Figure 2–54. *Dwelling, South Park Ranger District, Pike-San Isabel National Forest, Region 2 (1975)*

Figure 2–55. *Petersburg apartment complex, Tongass-Stikine Area, Region 10 (1998)*

Warehouses and Storage Facilities

Figure 2–56. *Cochetopa Warehouse, Salida Work Center, San Isabel National Forest, Region 2 (1938)*

Figure 2–57. *Warehouse and shop, North Bend Ranger Station, Snoqualmie National Forest, Region 6 (1937)*

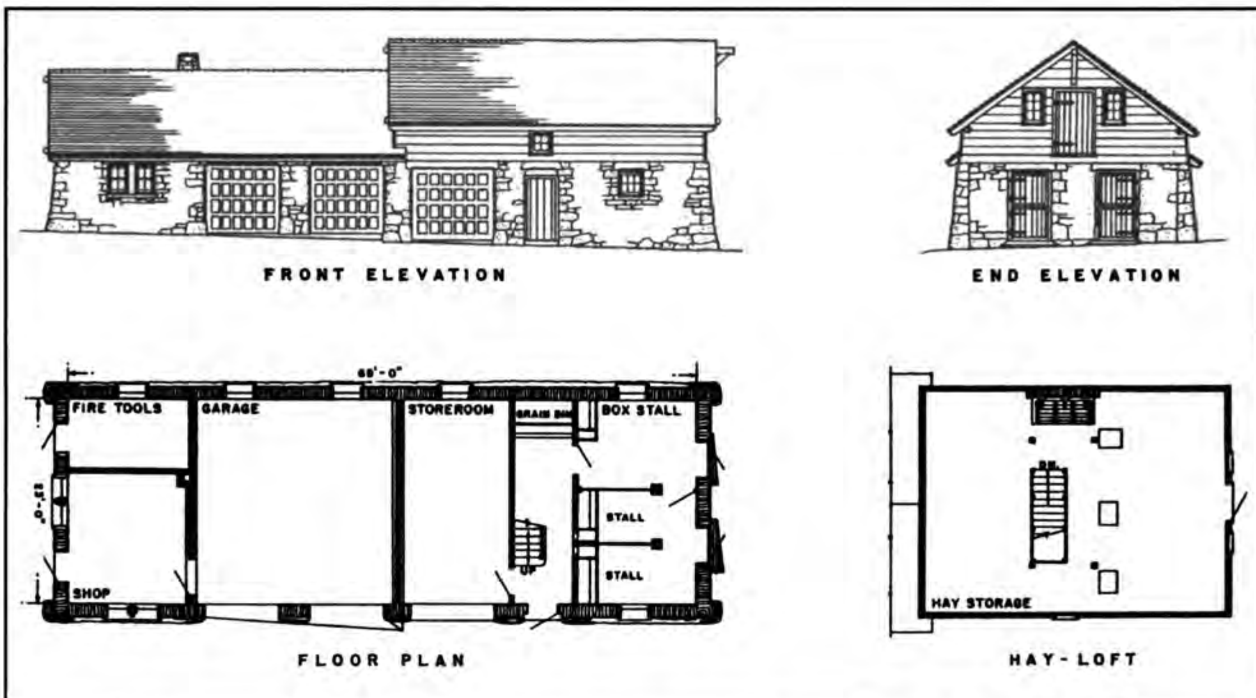


Figure 2–58. *Shop and barn, Anita Moqui Ranger Station, Kaibab National Forest, Region 3*

Figure 2–59. *Big Sur Warehouse, Los Padres National Forest, Region 5 (1992)*

Figure 2–60. *Mule Creek Boat Dock and Monorail, Shasta-Trinity National Forest, Region 5*

Figure 2–61. *McCall Smokejumper Training Base, Payette National Forest, Region 4 (1987)*

Figure 2–62. *West Yellowstone Fire Control Center, Montana, Region 1 (1965)*

Figure 2–63. *Air Center, Redmond, Oregon*

Lookouts

The Lookout

'Way above the forests, that are in my care,
Watching for the curling smoke – looking everywhere,
Tied onto the world below by a telephone,
High, and sometimes lonesome – living here alone,
Snow peaks on the skyline, woods and rocky ground,
The green of Alpine meadows circle me around,
Waves of mountain ranges like billows of the sea –
Seems like in the whole wide world there's not a soul but me.
Peering thru the drift of smoke, sighting thru the haze,
Blinking at the lightning on the stormy days,
Here to guard the forests from the Red Wolf's tongue
I stay until they take me down, when the fall snows come.

— Robin Adair
California District Newsletter, April 1927[1]

The detection and control of fires in remote wildlands has posed a special problem to the Forest Service throughout its history. Federal involvement in fire control began with the National Park Service and was later introduced into the forest reserves. The need for fire detection and prevention increased as more land was set aside by the Federal Government and as destructive fires increased.

During the early 1900's, the General Land Office carried out extensive surveys to properly place monuments to mark forest boundaries. Mapping was done on each forest, and it was probably during this time that specific mountaintops were considered for detection locations.

The greatest single motivator for fire protection within the Forest Service was its Chief, Gifford Pinchot. Part of Pinchot's plan was to convince the public that the Forest Service mission included fire detection and prevention. Pinchot and many of his followers believed that wildland fires should be prevented whenever possible or, if that failed, that fires be suppressed. Pinchot's vision would shape the future Forest Service, but lack of funding restricted the development of fire control until the second and third decades of the 20th century.[2]

In a paper written in 1910, Henry Graves stated:

> The mere fact that a tract is carefully watched makes it safer, because campers, hunters, and others crossing it are less careless on that account. By an efficient supervision most of the unnecessary fires can be prevented, such as those arising from carelessness in clearing land, leaving campfires, and smoking; from improperly equipped sawmills, locomotives, donkey engines; etc.
>
> One of the fundamental principles in fire protection is to detect and attack fires in their incipiency. In an unwatched forest a fire may burn for a long time and gain great headway before being discovered. In a forest under proper protection there is some one man or corps of men

> responsible for detecting fires and for attacking them before they have time to do much damage or to develop beyond control.

The earliest lookouts were high peaks with an unobstructed view, with tents as shelters and short mapboard stands for pinpointing the smoke on maps. After 1905, tall trees, crude observation-only towers (figure 2–64), platforms, and small log cabins began to be used.[3]

By 1911, cabins and cupolas (figure 2–65) were being constructed on mountaintops. In 1914, Aeromotor Company observation-only towers with 7- x 7-foot wood or metal cabs were approved in several Regions. A commonly built lookout tower design was the timber tower, which was used as early as 1914. Its design borrowed from similar designs used for years by the oil industry.

In 1914, Coert DuBois in *Systematic Fire Protection in the California Forests* wrote:

> The lookout man's dwelling, office and workroom should be centered in one house, on one floor, and in one room. The room can not be less than 12 feet square, and must be so constructed that at any moment of the day, with the turn of the head, he can see his whole field. He must be fixed so that while he is cooking, eating, reading, writing, dressing, washing his clothes, walking about, or sitting down, he can not help but be in the best position to see.[4]

Forests in Region 1 began to experiment with lookout construction as early as 1915. The first lookout tower in Region 1 was erected in 1916; it comprised a small cab mounted on a windmill tower. Two of the earliest lookouts in the Region were built according to the standard District 6 design. The so-called D-6 lookout was a 12- x 12-foot frame structure with an observation cupola centrally located on the gable roof. A third lookout of this vintage was the Cedar Mountain Lookout on the St. Joe National Forest. This two-story frame structure followed an improvised plan and is apparently unique.[5]

Some lookout points required a tower to obtain a view over the treetops. This type of structure had to be durable against extreme weather conditions, high winds, and lightning strikes. In the late 1920's, Clyde Fickes designed a prefabricated lookout cab that was used extensively throughout Region 1. It was said that the cab did not become rigid until the windows were installed.[6] Lookout construction in Region 1 received high priority in the 1920's; between 1921 and 1925, 61 structures were completed. Between 1926 and 1930, an additional 130 were built. By the end of the decade, the total number of occupied points reached approximately 800.[7]

In the Rocky Mountain Region, despite the acknowledged need for fire detection facilities, no official funding was allocated for construction of fire cabins or towers until the early 1910's. As a result, cabins and towers built during this era were typically constructed by rangers using scrap materials or materials that could be found on site. Even this, however, was a step up from the tents that had been previously used to shelter lookouts. There were few standardized designs in Region 2 through the 1950's.[8]

The Leon Peak Lookout on the Grand Mesa National Forest in Region 2 (figure 2–66) is believed to have been constructed in 1911 and 1912 by Clay Withersteen with the help of Rosco Bloss, a local seasonal Forest Service

Figure 2–64. *Lookout tree on Bull Hill, Lassen National Forest, California (1912)*

Figure 2–65. *Signal Peak Lookout, Sierra National Forest, Region 5 (1910)*

employee who was an accomplished carpenter. Bloss was lookout guard in the summers of 1914 and 1915. All materials were carried up by backpack. The cupola cabin topology of this lookout consisted principally of a square log room with a glass observation cupola centered on its pyramidal roof.[9]

In California, the 14- x 14-foot duBois design of 1917 established the basic floor plan for all live-in cabs built since. The duBois plans indicate that the cab could be placed on timber towers, but no height specifications are given. The tower design was of a nonbattered type similar to railroad water-tank towers. Since then, the live-in observatory has been the preferred design for California, no doubt a result of duBois's insistence that the operator should be kept in direct sight of the seen area at all times; in effect, maximizing the potential to spot and locate fires—day or night.

Figure 2-66. *Leon Peak Lookout (photo taken August 1993)*

In the early 1930's, California Regional Forester S.B. Show formed an investigative group at the California Forest Range and Experiment Station to scrutinize every aspect of fire detection. The group, headed by Edward Kotok, provided a report of its findings in 1933, just prior to the inception of the Civilian Conservation Corps. The Region immediately took advantage of the CCC workforce and initiated a massive program of construction projects, including 250 lookout towers and cabs built between 1933 and 1942.[10]

The 1937 circular "Planning, Constructing, and Operating Forest-Fire Lookout system in California" noted:

> The lookout house is probably the most distinctive structure used in forest-fire control. It now represents the product of 20 years of evolution and reflects many features that have become standard through long experience by the Forest Service. The details of design vary and are still in process of change, but the main features now conform closely to the essentials of a common design.[11]

During World War II, the Aircraft Warning Service was established, operating in 1942 and 1943. Aircraft Warning Service volunteers staffed selected lookouts 24 hours a day, 365 days a year.

After the war, the increase in air pollution limited visibility around large urban areas. Use of the forests grew, road systems expanded, and citizen reports of fire began to equal reports by lookouts. Coupled with the increased aerial surveillance and later satellite surveillance, the use of the lookout tower correspondingly diminished.

Figure 2–67. *LaCumbre Peak Lookout, Los Padres National Forest, Region 5 (1945)*

Just after the end of World War II, Keplar Johnson in Region 5 designed an "experimental lookout" for La Cumbre Peak on the Los Padres National Forest (figure 2–67). The lookout was innovative, with a steel frame cab, columns, roof beams, ties, and girders. It also had sloped windows similar to those on airport control towers. The project was funded jointly by the Washington Office and Region 5. Compared with other lookouts, La Cumbre Peak was somewhat expensive, costing $6,500. With the loss of the CCC and lean budgets after the war, funding for similar projects was rare.

The last new lookout in California was the Antelope Peak Lookout on the Lassen National Forest (figure 2–68). Built in 1977 with cooperative funding from NASA, the project tested solar energy technology. A 1979 *Sunset* magazine included an article on this structure: "Sun powers lookout":

> "A neat twist to kerosene lamps." That is how one forest ranger described the new solar system that provides light and power for the Antelope Peak lookout tower in the Lassen National Forest. The nation's first to be powered by solar cells has a panoramic view from the top of timberland and meadows, Mount Shasta, Mount Lassen and cool blue Eagle Lake. Atop the 7,684-foot peak, the hexagonal tower sits poised like a rustic spaceship. On its south-facing side are eight panels

Figure 2–68. *Antelope Peak Lookout, Plumas National Forest (1974). This was the last lookout designed in Region 5, a wood tower and cab built in cooperation with NASA to test solar electric panels. Bob Sandusky was the designer.*

that can generate 300 watts at high noon. When sunlight strikes the silicon wafer cells, they produce enough electricity (stored in 18 batteries) to operate the stations lights, radio, waterpump and appliances that include a refrigerator and a small television—"all the comforts of home," as fire lookout Virginia McAllister says.

The lookouts who spent their time in these remote, isolated forest environments had to be self-contained people with a sense of humor. A lookout at the Timber Mountain Lookout on the Colville National Forest in Region 6, wrote the following poem in 1948:

I like FS biscuits;
think they're mighty fine.
One rolled off the table
and killed a pal of mine.

I like FS coffee;
think it's mighty fine.
Good for cuts and bruises
just like iodine.

I like FS corned beef;
it really is okay.
I fed it to the squirrels;
funerals are today.

Figures 2–69 through 2–74 show additional examples of lookout design styles in several Regions.

Notes

1. Mark Thorton, *Fixed Point Fire Detection: The Lookouts*, p. 4
2. Ibid., pp. 23 -24
3. Ibid., p. 6
4. Ibid., p. 8
5. Historical Research Associates, p. 38.
6. Ibid., p. 8
7. Ibid., p. 38
8. Schneck and Hartley, p. 96
9. Ibid., p. 97
10. Thorton, p. 16
11. Thorton, p. 42

Figure 2–69. *Bald Mountain Lookout, Sierra National Forest, Region 5 (1910)*

Figure 2–70. *Blue Mountain Lookout, Modoc National Forest, Region 5 (1930)*

Figure 2–71. *Hayes Lookout, Nantahala National Forest, North Carolina, a low wooden enclosed structure with a 6- x 6-foot cabin built by the CCC in 1939*

Figure 2–72. *Blue Point Lookout, Cascade Ranger District, Boise National Forest, Region 4 (1920)*

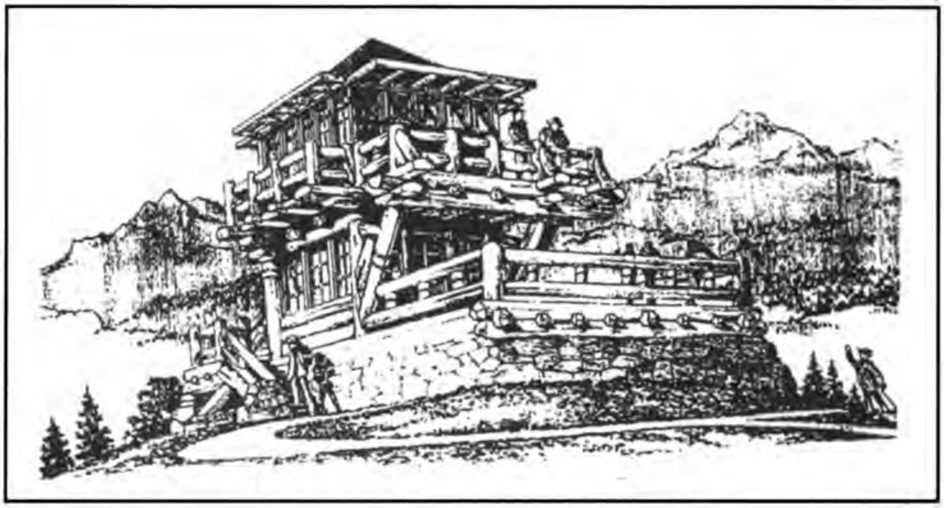


Figure 2-73. *Sketch of an early Region 6 lookout*

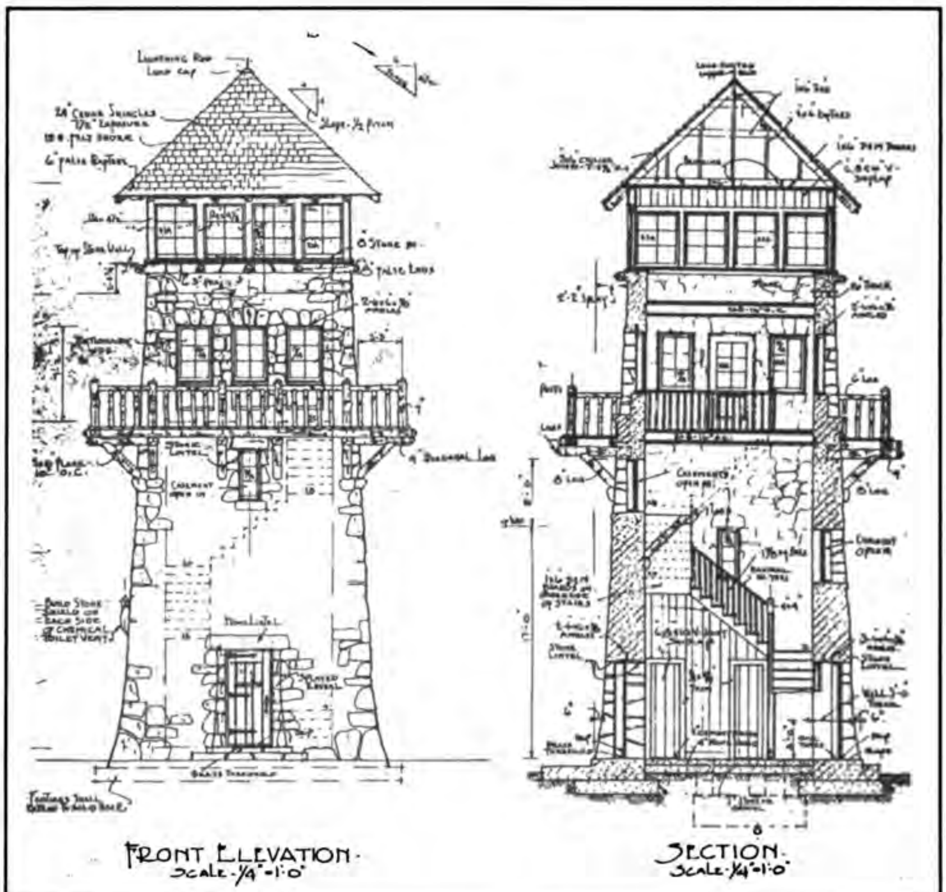


Figure 2-74. *Wayah Bald Observation Tower, North Carolina (1938)*

Recreation Buildings

The category of buildings with the second greatest number and diversity of types is recreation buildings. In a 1940 supplement to the "Acceptable Plans" book, Groben writes:

> All recreation structures should be designed to serve their intended purpose, be of architectural and engineering soundness, and harmonize with the forest environment of recreation areas as much as possible, consistent with utility, good structural design, and reasonable cost of construction and maintenance.
>
> The very fact that recreation structures should harmonize with the environment precludes definite standardization of design. Functional requirements also vary somewhat with locality and are likewise difficult to standardize in definite pattern.[1]

Foresters became aware of the demand for recreation well before the creation of the National Park Service in 1916. The 1913 annual report stated, "Recreation use of the Forest is growing very rapidly, especially on Forests near cities of considerable size."[2] The creation of the National Park Service in 1916 touched off an interagency land struggle that spurred limited Forest Service development of a variety of recreational sites and buildings, including campgrounds, trails, shelters, and toilets, as well as encouragement of summer home sites and structures, throughout the 1920's. Americans visited the national forests in record numbers, due in part to greater access to automobiles and the development of roads within the forests. In 1925, somewhat more than 5 percent of the amount spent on new buildings supported campground development.

One writer summarized the influence of roads on the growth of recreational use in the national forests:

> Although it was not their original purpose, the 'fire roads' did much to open the forests to recreational use by hunters and hikers who still gratefully use them today. The development, especially after World War II, of four-wheel-drive vehicles such as jeeps made these trails even more popular. CCC men also built trails for hiking, especially short ones to spots of particular natural beauty of interest, often providing bridges and steps for visitors also.
>
> Since road building and automobile ownership were making the forests accessible for recreation, the Forest Service put some of the CCC boys to work building campgrounds. A campground might include shelters, toilet facilities, picnic tables, fireplaces, parking lots, and water supply systems. ... Bathhouses were built at some good swimming areas.[3]

The Forest Service had good reasons for welcoming recreation use of the forests. One reason was to obtain broad-based political support for the development of the forests. Public demand for access to the forests translated into Federal dollars for road construction, which in turn increased the value of all other natural resources the forests possessed. Americans were visiting the national forests in increasing numbers, mainly because automobiles gave them unprecedented ease of access. But the values that drew them to the forests ran deep. To the dismay of many, the United States was becoming an urban nation; the 1920 census revealed that for the first time a majority of U.S. citizens lived in communities with populations greater than 2,500. Americans were adjusting rather nervously to a faster pace of life. The first areas of greatest concentration of summer visitors were on the Angeles National Forest of southern California, the Mt. Hood National Forest in northern Oregon, and the Pike and San Isabel National Forests in central Colorado, all in mountains near cities.[4] Forest Service management plans for recreation aimed first at preserving scenery: belts of timber were left uncut along highways, around lakes and campgrounds, and in settings that were attractive for summer homes.

Having closed the Columbia River Gorge Park to the development of summer cabins or private resorts, the Forest Service found itself forced to assume greater responsibility for the recreational facility development it had done in other areas of high recreational potential. During the summer of 1916, the Mt. Hood National Forest developed the Eagle Creek Campground within the Columbia River Gorge Park. Apparently for the first time, the Forest Service undertook the construction of a public campground in the modern sense. Facilities included camp tables, toilets (figure 2–75), a check-in station, and a ranger station.[5] Ranger Albert Weisendanger and his wife welcomed many visitors to the campground, which provided a convenient place to stop along the now historic (but then under construction) Columbia Gorge Highway.

Construction of recreational improvements accelerated during the 1930's. CCC enrollees nationwide constructed numerous campground structures. The next acceleration of recreation development came in 1957 under the "Operation Outdoors" program, which expanded recreation in the national

Figure 2–75. *First substantial toilet building, Mt. Hood National Forest, Region 6 (1916)*

forests. Today the national forests are the public's number one recreational destination point.

The "Campground Improvement Manual" from Region 5, dated March 1, 1933, states: "The most important feature on a campground, both from the viewpoint of the camper and sanitation, is the latrine."[6] This manual includes six latrine types as regional standards (for example, figure 2–76 shows the design for localities of heavy snowfall). These designs were developed over a 10-year period. The manual includes a bill of materials for all designs. Flush toilets were rare during this time.

In the Improvements section of the Region 6 Recreation Handbook, dated February 23, 1935, under Registry Booths, it states: "... suggested types of special registry booths ... used at class A camps ... should be places near natural gathering places."[7] The designs are quite rustic (figure 2–77).

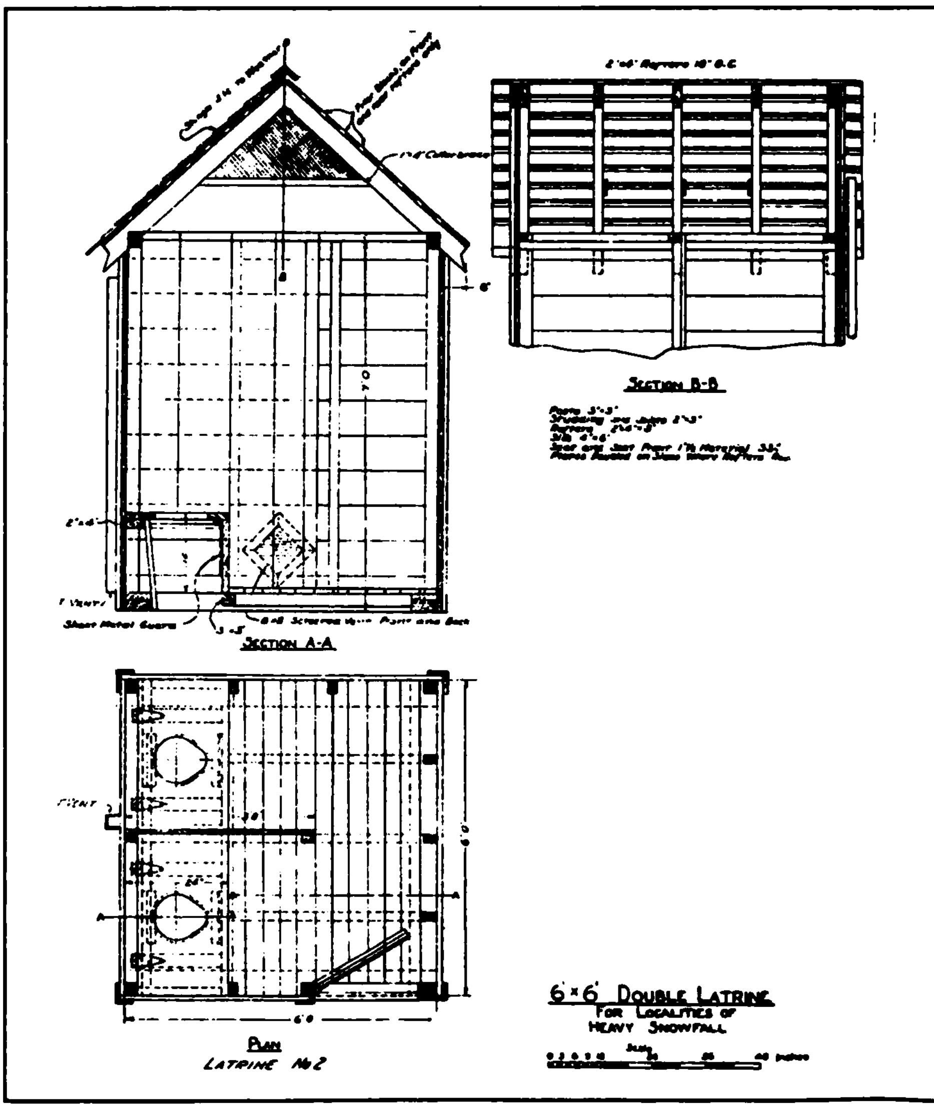


Figure 2–76. *Double latrine design from Region 5 Campground Improvement Manual (1933)*

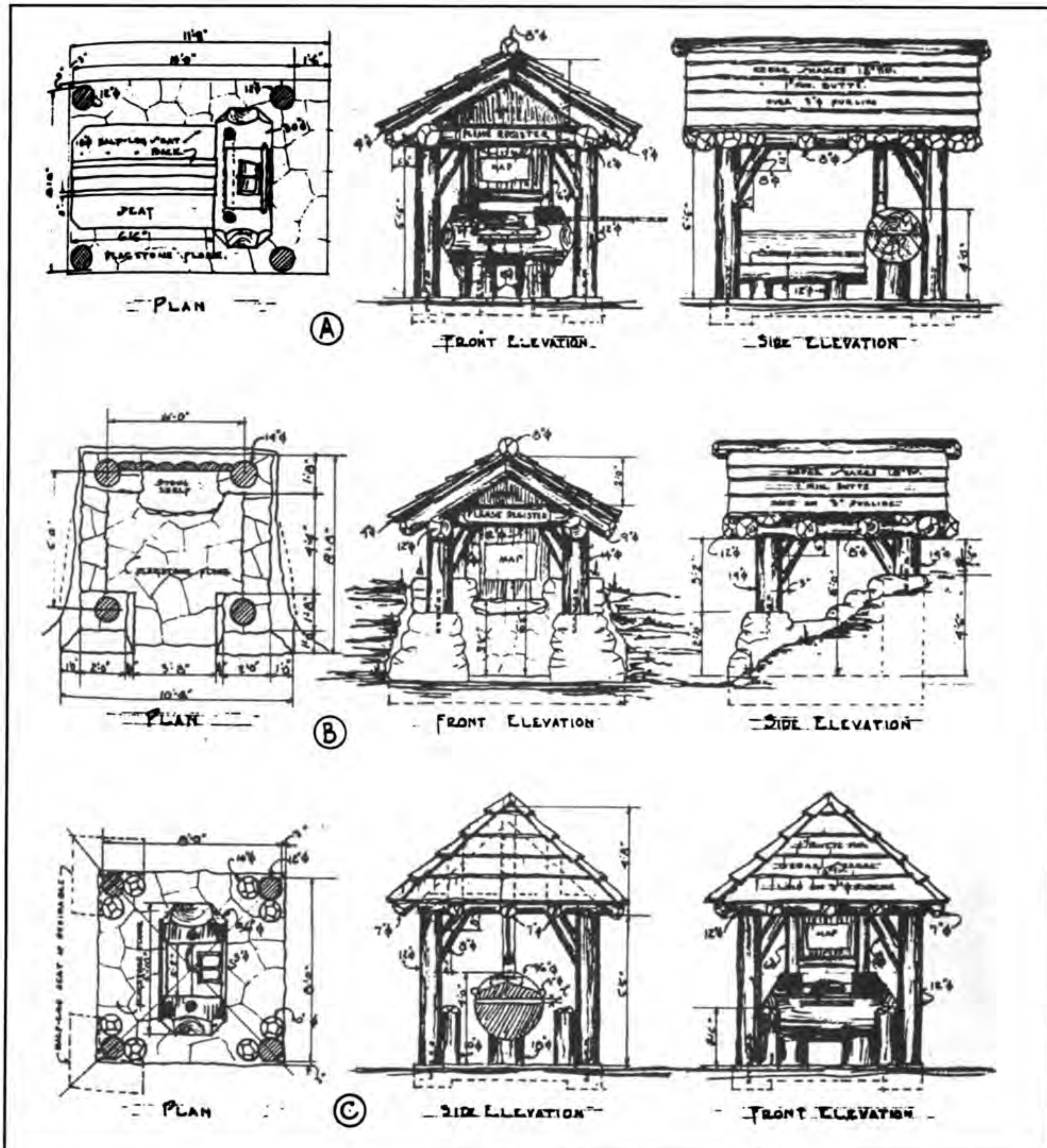


Figure 2–77. *Design for a registry booth from the Region 6 Recreation Handbook (1935)*

In the Eastern Region's "Handbook of Administration—Recreation," dated March 15, 1935, under Forest Camp Facilities, it states: "Comfort stations will be provided throughout Forest Camps at convenient locations to accommodate the people in that vicinity. The structures themselves will be designed to give efficient service for the use and will be of pleasing proportions and finish" (figure 2–78).

In a foreword to a report in 1936 by consulting landscape architect A.D. Taylor, Acting Chief of the Forest Service C.M. Granger noted:

> ... that the increasing social use of our National Forests places a great responsibility on us to preserve the natural aspects of the forests, and at the same time to provide areas and accompanying facilities for the many kinds of recreation activities for which so many millions of people enter the National Forests each year.[8]

In the 1960's, Congress passed a bill funding construction of campgrounds at new and existing reservoirs and lakes in the Nation; these had a considerable impact on the Forest Service recreation design and construction program. This increased funding started a trend toward campgrounds with larger capacity in the more urban forests.

Almost all Regions publish a catalog of standard recreation structures that is edited at least every 5 years. The most prevalent single type of building for the recreation public is the toilet structure. These range from screened backcountry (wilderness) toilets to one-hole pit toilets for remote camp-

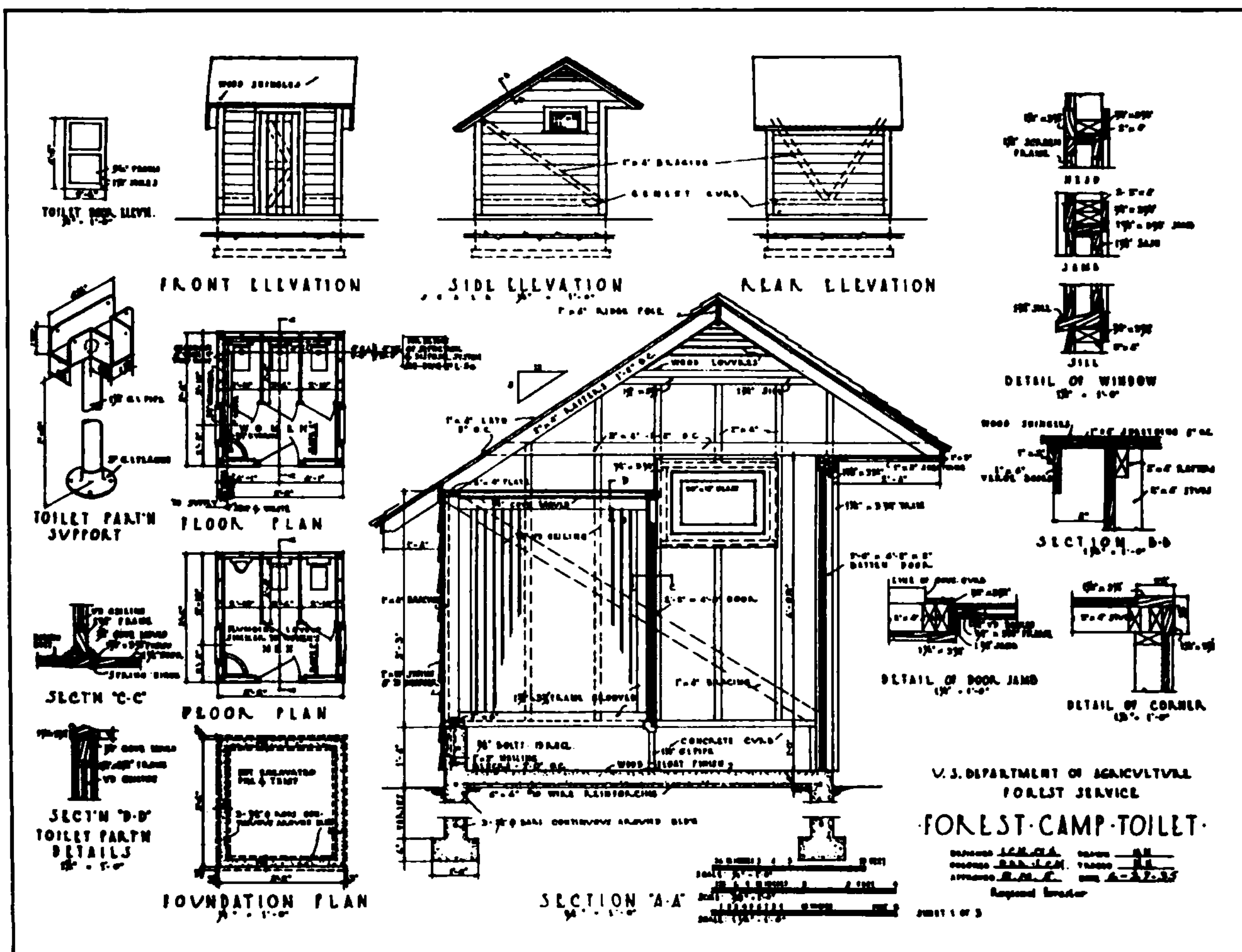


***Figure 2–78.** Design for a comfort station from the Eastern Region's Recreation Handbook (1933)*

grounds to the flush comfort station for urban-type campgrounds. Because most new architects start out with a toilet design or redesign, there are as many different designs as there are designers. See figures 2-79 through 2-92 for additional examples of toilet buildings, including modern vault and flush toilets.

A continuing concern with vault and pit toilet buildings was, and still is, the venting of the holding tank for the human waste. Odor and insects have made these structures less attractive to the national forest recreational visitor. Over the years, the designs of toilet buildings with holding tanks or pits have employed any number of inventive solutions; these have included fans, solar heaters, wind diverters, and other devices to increase the flow of air upward out of the vault to decrease odors in the building. Briar Cook, a research engineer at the Forest Service's San Dimas Equipment Development Center in California, spent the last years of his career attempting to devise a "sweet smelling toilet." One year he spent many hours down in the tanks doing an inventory of all items deposited there (his list was several pages long). His final "gift" to the agency was a series of toilet buildings with technical innovations to properly vent the vaults to keep unwanted odors and insects out of the interiors of these buildings. These were shown to perform well in laboratory tests, but if the buildings were constructed in the wrong location or orientation in the field, the venting did not work.

Looking at the styles of the various recreation structures of the Forest Service shows that the predominate character of these buildings in the rural areas is rustic—labor intensive with logs, wood shakes or shingles, rough planks, and stone. In urban areas, the buildings are more finished, with plywood siding or concrete blocks and flat roofs, and are more visible to the public. The variety of building types and design styles can be seen in figures 2-93 through 2-102 on pages 119 to 124.

In the early 1990's, recreation became the number one use of the national forests as well as the greatest money maker for the U.S. Treasury from receipts. Since the mid 1990's, more and more programs have focused on the recreational needs within the national forests, including refurbishing, rebuilding, and adding to the recreational structures.

Notes

1. USDA Forest Service, "Recreation Structures," *Acceptable Plans*, p. 2.
2. USDA Forest Service, "A History of Outdoor Recreation Development in National Forests, 1891-1942," p. 2.
3. USDA Forest Service, *Mountains and Rangers: A History of Federal Forest Management in the Southern Appalachians, 1900-91*, p. 78.
4. USDA Forest Service, "A History of Outdoor Recreation," p. 3.
5. Ibid., p. 4.
6. USDA Forest Service, *Campground Improvement Manual*, p. 9.
7. USDA Forest Service, *Recreation Plans—North Pacific Region*
8. Taylor, *Problems in Landscape Architecture in the National Forests*, Foreword.

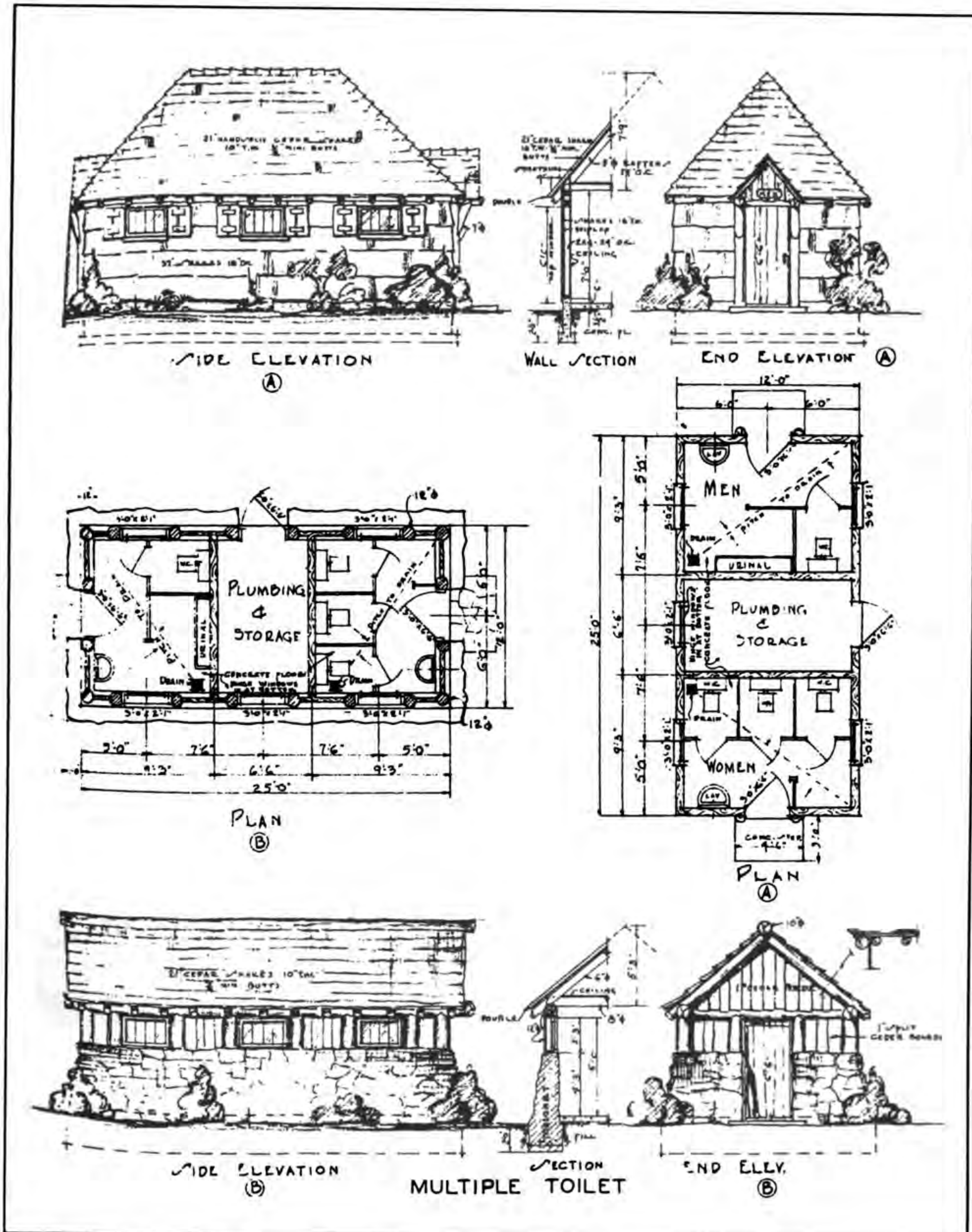


***Figure 2–79.** Comfort station with separate multiple toilets, Region 6 (1936)*

Toilet Buildings of the 1930's

Figure 2–80. *Combination toilet and registration building, Rogue River National Forest, Region 6 (1936)*

Figure 2–81. *Toilet building and bathhouse, Kaniksu National Forest, Region 1 (1936)*

Figure 2–82. *Toilet building, White Mountain National Forest, Region 7 (1936)*

Figure 2–83. *Toilet building, Chelan National Forest, Region 6 (1936)*

Figure 2–84. *Seedhouse Campground toilet, Routt National Forest, Region 2 (1935)*

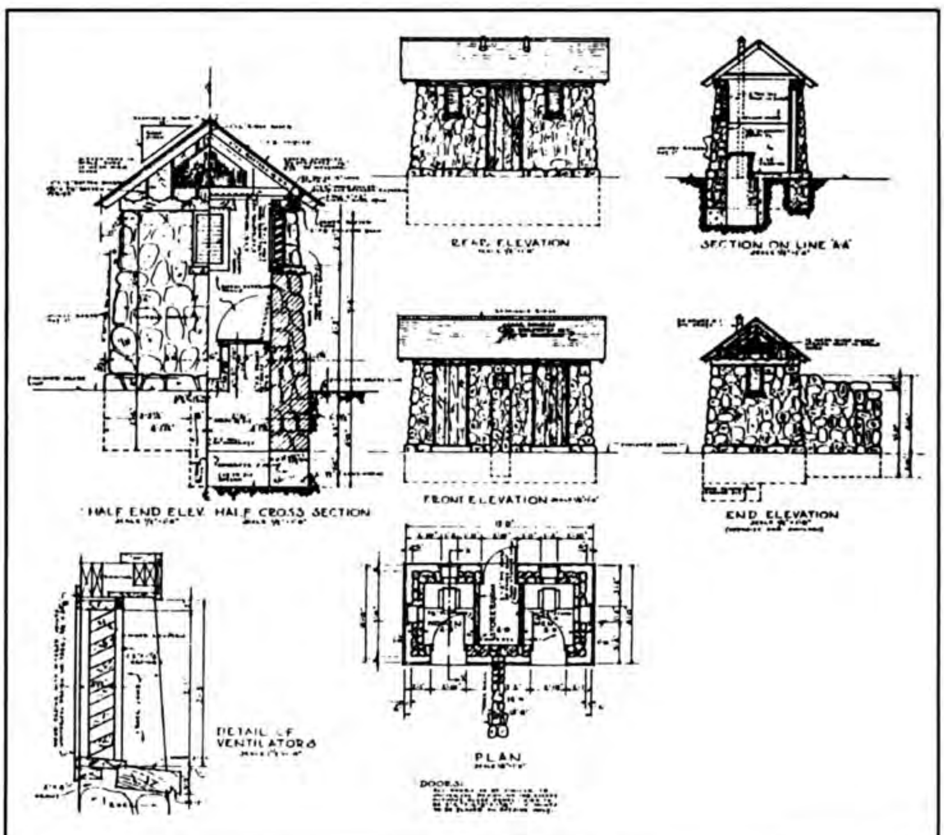


Figure 2–85. *Region 4 standard two-unit comfort station (1934)*

Modern Vault Toilets—Designs of the 1960's

Figure 2–86. *Two-hole vault, southern California, Region 5*

Figure 2–87. *Mountaintop vault structure, Region 5*

Flush Toilets

Figure 2–88. *Flush toilet, San Bernardino National Forest, Region 5 (1960)*

Figure 2–89. *Flush toilet, Plumas National Forest, Region 5 (1960)*

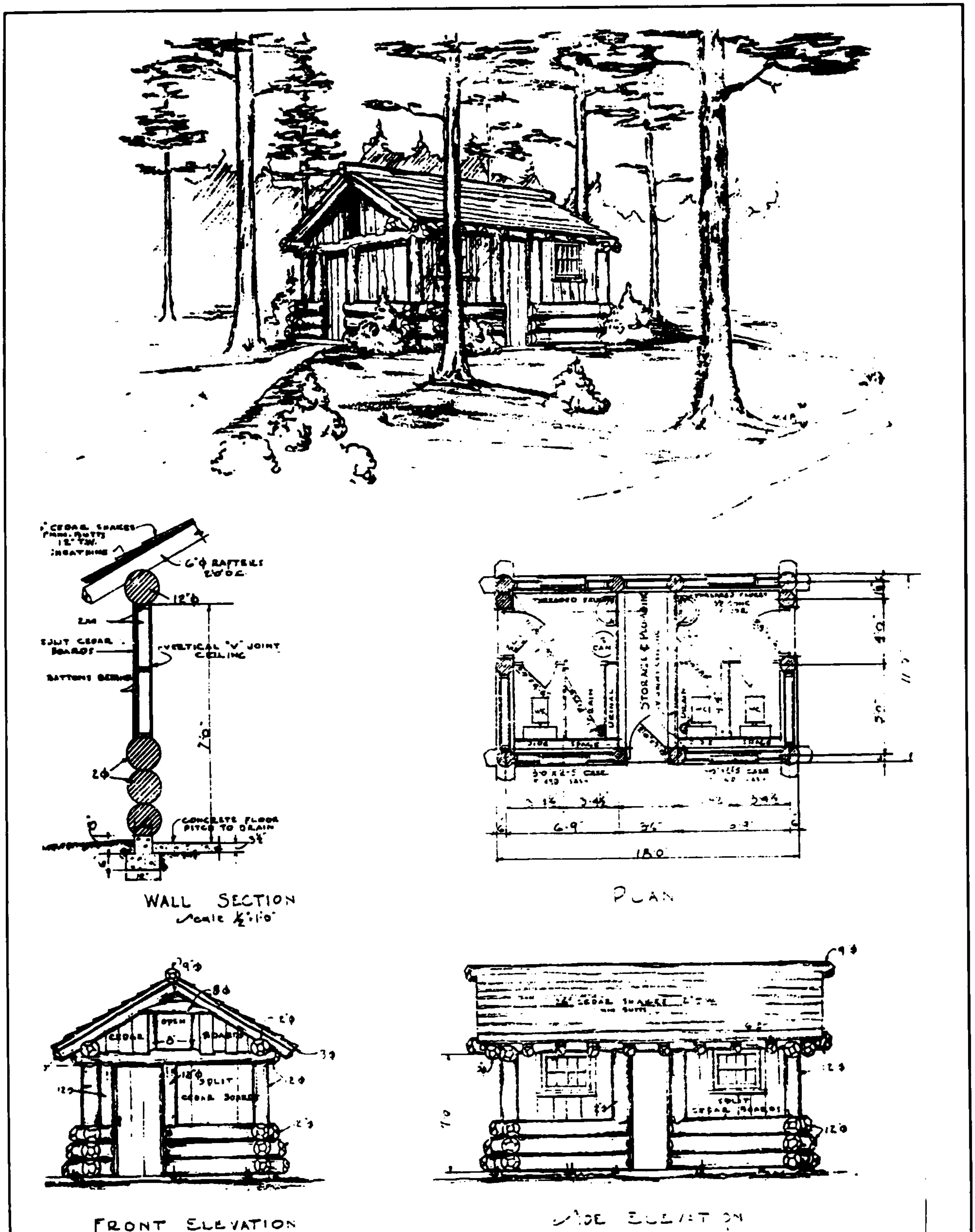


Figure 2-90. *Combination flush toilet, Region 6*

Figure 2-91. *Modern flush toilet, Region 8 (1980)*

Figure 2-92. *Portage Glacier restroom, Chugach National Forest, Region 10 (1962)*

Figure 2–93. *Mono Hot Springs bathhouse, Sierra National Forest, Region 5 (1963)*

Figure 2–94. *Change pavilion, June Lake, Inyo National Forest, Region 5 (1964)*

Figure 2-95. *Amphitheater with rear-projection building, Lake Tahoe Visitor Center, Region 5 (1964)*

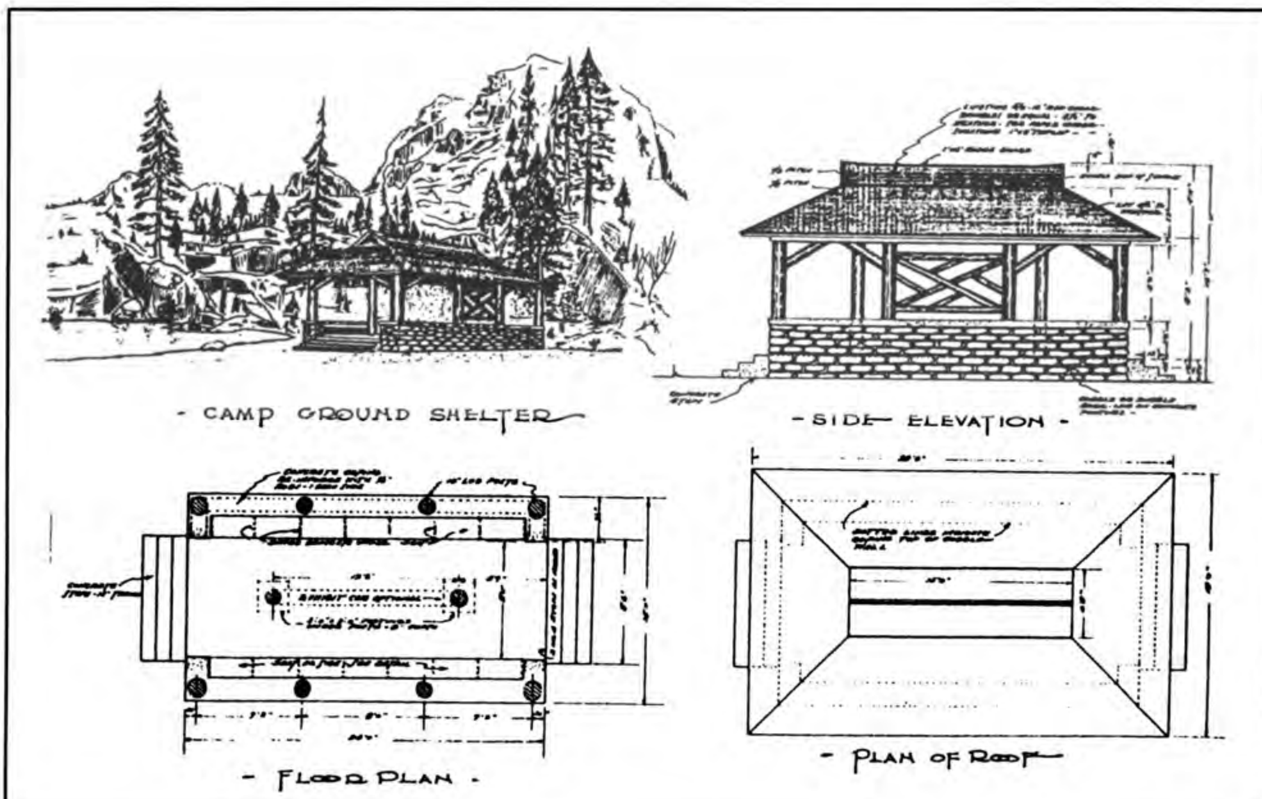


Figure 2-96. *Standard Region 4 campground shelter (1934)*

Figure 2-97. *Picnic shelter, Cibola National Forest, Region 3 (1936)*

Figure 2-98. *Interior detail of picnic shelter, Cibola National Forest, Region 3 (1936)*

Figure 2–99. *Picnic shelter, Snoqualmie National Forest, Region 6 (1936)*

Figure 2–100. *Picnic shelter, Longdale Recreation Area, George Washington National Forest, Region 8*

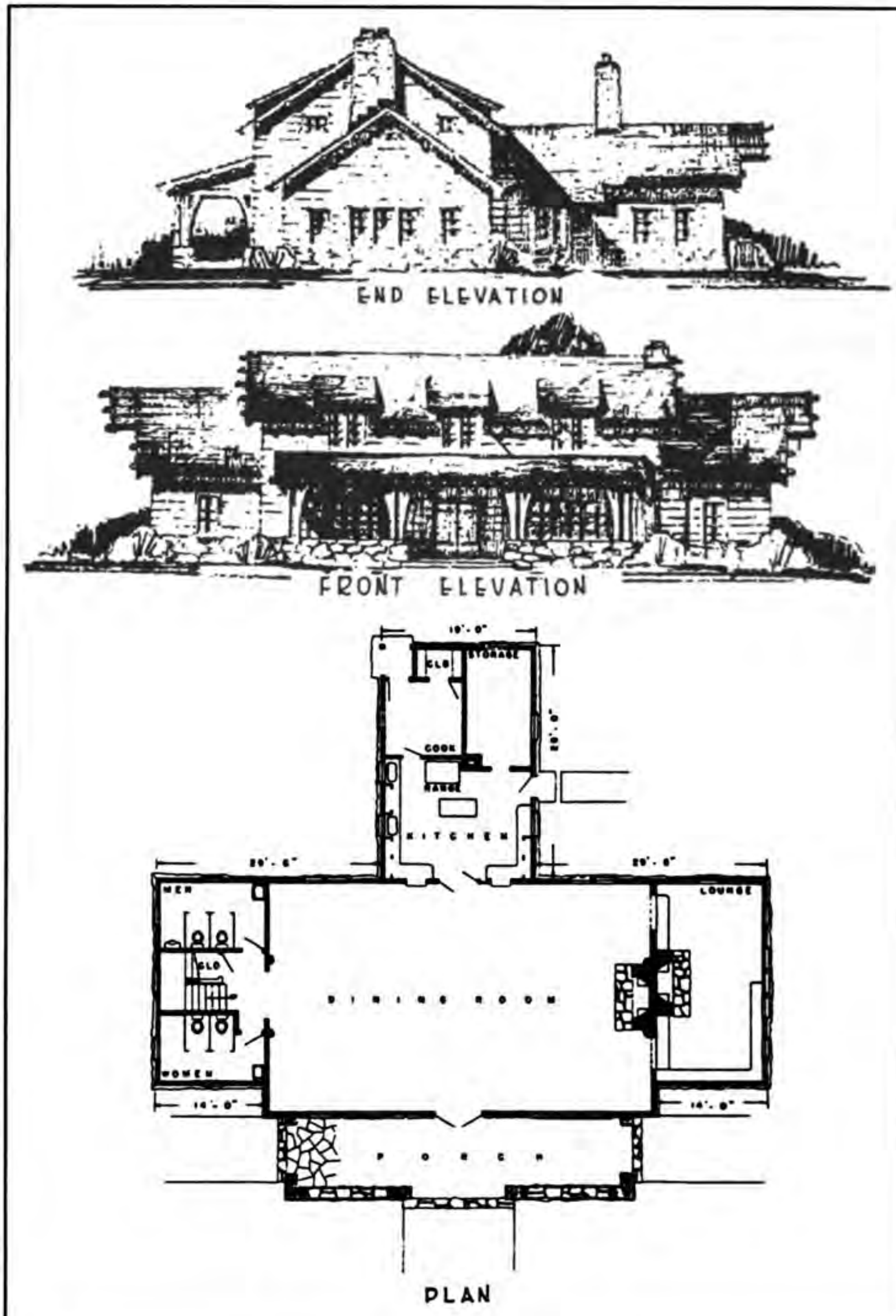


Figure 2-101. *Messhall, Organization Camp, Wyoming National Forest, Region 4*

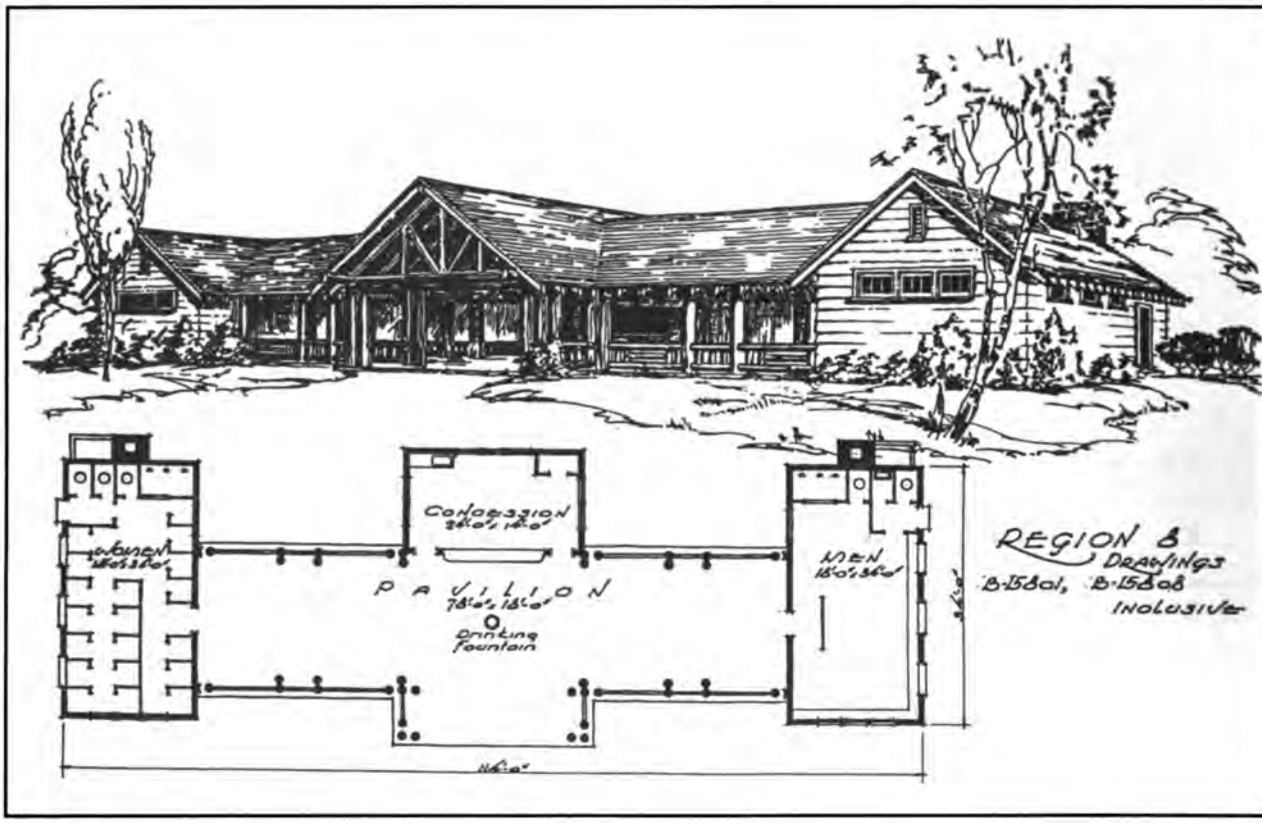


Figure 2-102. *Bath house and pavilion, Region 8*

Timberline Lodge: A Legacy from the WPA

Hundreds of thousands of visitors come to Timberline Lodge each year, making it one of the top two tourist attractions in the State of Oregon. Timberline Lodge stands just above the timberline on the south side of Mount Hood in the Oregon Cascade Range. A majestic structure in wood and stone, it was built mostly by Works Progress Administration (WPA) labor between 1936 and 1938. The lodge is traditional in style and has similarities with wilderness hotels, but it is unique to the Forest Service because it was designed by agency architects. It is one of only two national historic landmark properties in the National Forest System. The other is Grey Towers in Milford, Pennsylvania—Gifford Pinchot's ancestral home.

A project application form for a WPA grant for the Timberline project, a year-round recreation center on Mount Hood, was sent to Washington on September 7, 1935. The initial role of the Forest Service in the Timberline project was that of sponsor, but in a limited capacity. The project was guided by the Mount Hood Recreational Association, an unincorporated group of Portland citizens who were interested in the development of recreational housing facilities at Timberline on the slopes of Mount Hood. While stating that the Forest Service would supervise the development, the Mount Hood Recreational Association clearly planned to exercise control over the architecture of the hotel.

There was no money available to pay for the 6 percent fee a private architectural firm would charge for the design of the hotel. Forest Service Headquarters recommended that Gilbert Stanley Underwood be consulting

Figure 2-103. *Rendering of proposed Timberline Lodge by Linn Forrest (1935)*

PHOTO BY PAUL CALLICOTE

Figure 2-104. *Tim Turner (center front) poses with Timberline Lodge workers in 1937*

architect and that the design be done by a team of Forest Service architects headed by Tim Turner from the Region 6 office. Underwood was noted for his design of the Ahwanee Hotel in California's Yosemite National Park and a lodge at Zion National Park and for his work with the Union Pacific Railroad, including stations in Omaha and Kansas City. His name appears on some sketches of elevations for Timberline Lodge, but not on any of the construction drawings.

The team of Forest Service architects for the Timberline Lodge included Turner (as leader), Linn Forrest (lead designer for the lodge), Gif Gifford, and Dean Wright. These were all men who had grown up in the Northwest and who brought many years of experience with all facets of architecture, including hotel design, to their positions in the Forest Service. They were men who were familiar with historic architecture and yet kept abreast of current developments on both the national and international levels.

Turner led this team to produce a unique design and details for the only major recreation development on Forest Service land by the WPA. Turner was given the task to provide Forest Service inspection of the construction of the lodge.

The design of the lodge was called "Cascadian" and was thought of as an American version of European Alpine architecture. E.J. Griffith, in an interview in 1976, said:

> "America has never developed any highland architecture as the Alpine of Europe. So an attempt was made to establish a distinctive style, which subsequently was given the name of Cascadian architecture. With steep sloping roofs, massive and rugged walls to meet the weight of the snows and force of winds, the design was the development of a pioneer motif ..."

The strength of the design of Timberline Lodge is in the head house and its long, sloping roof (figure 2-105). It is a unique and powerful structure.

Nonetheless, for the time when it was built, the lodge was traditional rather than innovative in style. The architects of Timberline Lodge were less influenced by the "modern movements" from the Bauhaus or Art Deco than by European chateau and alpine architecture. These traditional styles were the antecedents of Timberline Lodge.[1]

Forrest designed the carved panel of an American Indian chief wearing a headdress on one of the entrance doors (figure 2–106). The beadwork at the bottom of the panel between the braids is made up of the initials of the Forest Service architects, the Regional Engineer, and their secretary: JF (James Frankland, Regional Engineer), WIT (Tim Turner, supervising architect), HG (Gif Gifford, architect), DW (Dean Wright, architect), EDC (Ethel Chaterfield, secretary), and LF (Linn Forrest, architect).[2]

Construction began on June 13, 1936, even though the plans were not actually approved until July. Ward Gano, a recent engineering graduate from the University of Washington, was assigned by the Forest Service to be the resident engineer inspector. The weather was a primary consideration in this construction project. It was necessary to frame the building during the summer of 1936. Fortunately, the first snows did not start until December that year.[3]

The lodge was formally dedicated by President Franklin D. Roosevelt on September 28, 1937. The President called the lodge "a monument to the

PHOTO © BY LAWRENCE HUDETZ

Figure 2–105. *Exterior view of Timberline Lodge*

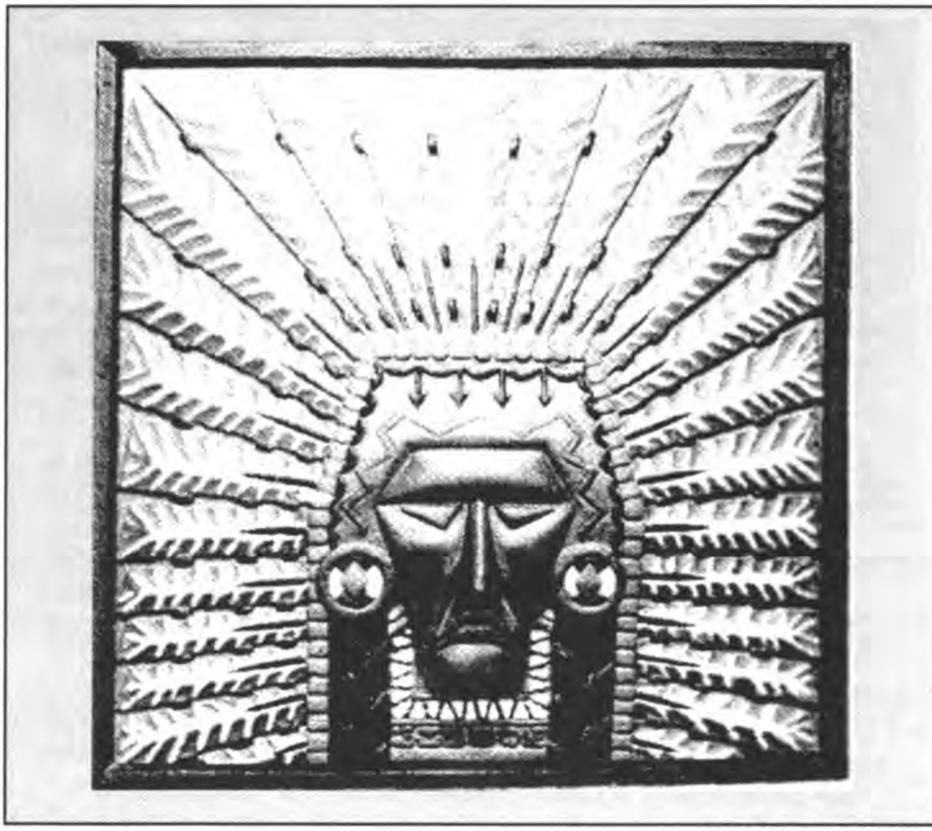


PHOTO © BY LAWRENCE HUDETZ

Figure 2–106. *Carved panel detail from Timberline Lodge door*

skill and faithful performance of workers on the rolls of the Works Progress Administration."

As the Timberline project neared completion in 1938, the Forest Service called for bids from hotel companies interested in operating it. Very few bids materialized, and the Mt. Hood Development Association appealed to Portland businessmen to form an operating company. The lodge was not opened to the public until February 4, 1938.

The architects of Timberline Lodge felt that the lodge was designed both for people who could afford to stay in the individual guest rooms and also for younger, generally less wealthy skiers, who would stay in the dormitory. The architects did not anticipate the heavy use of the lodge by summer visitors, nor could they predict the future boom of skiing as a popular sport.

Notes

1. Griffin and Munro, p. 5.
2. Ibid., p. 79.
3. Ibid., pp. 6 -7.

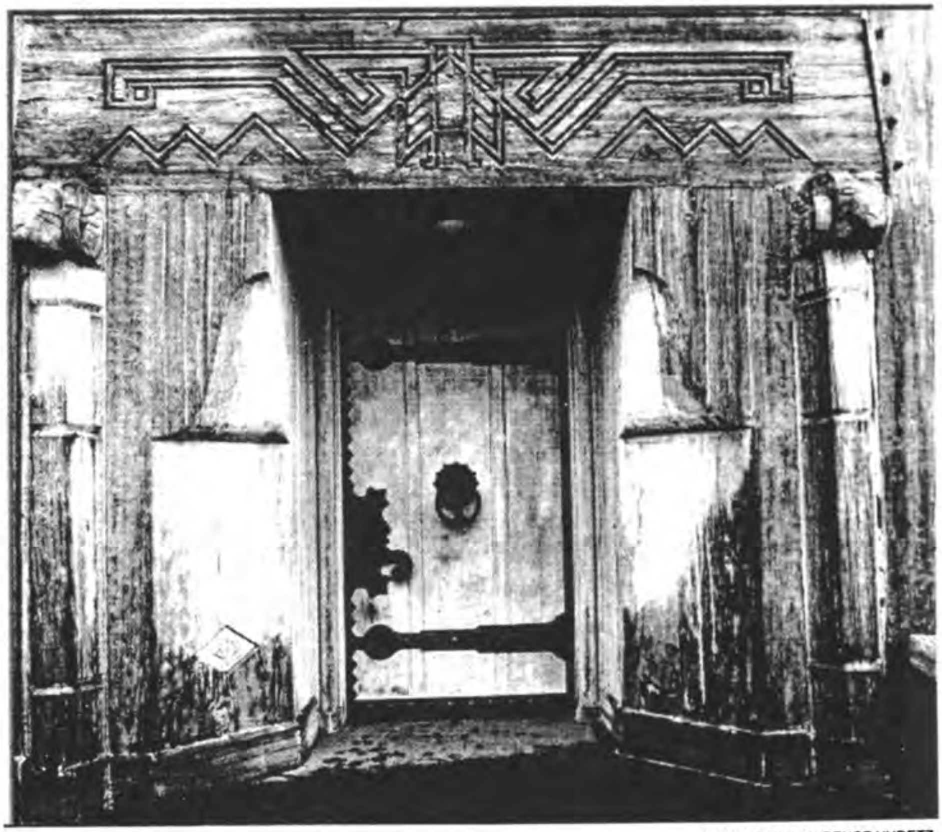


PHOTO © BY LAWRENCE HUDETZ

Figure 2-107. *Doorway, Timberline Lodge*

Visitor Centers

Recreation in the national forests has been seen as one of the primary multiple-use categories since the concept was first articulated by Gifford Pinchot in the early 1900's. Camping, hiking, hunting, and other outdoor recreational activities have taken place on national forests since they were formed.

Although the Park Service developed and implemented the concept of visitor information centers early in its history, the concept is still fairly new to the Forest Service. Most visitor contact points have been, and still are, made in the ranger district headquarters, where the public receives maps and directions from the clerk in the reception area. However, facilities designed to offer visitor information services are a way to help the public not only to enjoy the national forests but to understand the nature of the resources and their management.

For the design architects, visitor center buildings became a vehicle for their most creative expressions. Many of these structures were designed by Forest Service architects. Even when the designs were given to private architectural firms, the prospectuses and preliminary plans and styles were dictated by Forest Service architectural staffs. The styles of the buildings reflected more contemporary architectural elements than most of the other building types. The structures were built in areas of the national forests that were unique in their settings and that attracted a large number of visitors.

Just as the toilet building was the "bane" of the designer, the visitor center was the "joy." The high point in many a Forest Service architect's career was the assignment to participate in the development, design, and production of plans for new visitor centers. The buildings produced both by Forest Service architects and private firms are a positive reflection on the agency.

The first building designed and constructed as a visitor information center was the Mendenhall Glacier Visitor Center, built in 1961 near Juneau, Alaska. Conceptual ideas and sketch plans were developed by the Regional Office recreation staff. The proposal and plan for the observatory arose from a need for a comfort station (public toilet facility) at this already popular attraction, which for public convenience included a trail, viewing area, and sign. Linn Forrest Architects of Anchorage, Alaska, was contracted to prepare the construction documents. Forrest was one of the architects on the Timberline Lodge design team during the 1930's. The simple needs of the first concepts grew to include an observatory with a coffee shop, concessionaire apartment, office, and storage space (figure 2–108).

In 1991, it was time to bring the building up to the present needs and codes (especially the Americans with Disabilities Act). During the years 1995, 1996, and 1997, funding was provided to make the changes designed by a private architectural firm out of Seattle, Washington.

***Figure 2–108.** The first Forest Service visitor center at Mendenhall Glacier, Juneau, Alaska (1961)*

An unusual and challenging example of this building type was the Stream Profile Chamber at South Lake Tahoe, California (figures 2–109 and 2–110). The architectural design prospectus was completed in September 1964. Richard Modee, a new architect on the Regional Office engineering staff, was assigned the design of the building and John Grosvenor was assigned as the liaison between the forest and the Regional Office. Modee was a graduate student in landscape architecture at the University of California at Berkeley; he had a B.A. in architecture from the Rhode Island School of Design.

Grosvenor and Modee went up to the proposed building site before the winter snows began in 1964. The forest had done the surveying and had staked an approximate location on the ground. The two architects also met with Bob Morris to discuss the exhibits and how they would affect the flow of people in the structure. Modee had a rough sketch of the building showing the viewing windows and the entrance and exit ramps. Morris had some good suggestions regarding the shape and layout of the interior space. At the end of the meeting, the three felt they had a good understanding of the project and proposed to meet again just after the first of the year.

There were some difficult structural engineering issues. First was how to keep the structure from floating in the winter, when the water level in the meadow was close to the surface. Second was how to keep the moisture out of the underground chamber, both intrusion from underneath and water flowing down the two ramps. Third was how to span the large room with a sloping roof.

Figure 2-109. *Stream Profile Chamber, South Lake Tahoe, California, Region 5*

Figure 2-110. *Stream Profile Chamber, entrance detail*

The architectural engineering firm selected was Pregnoff and Mathhis of San Francisco, with Ken Mathhis as structural designer. Mathhis had worked for the Forest Service in bridge design before going into private practice.

Modee finished the preliminary design sketches and made a ½-inch-scale model (figure 2–111), and Grosvenor prepared a preliminary cost estimate. In the spring of 1965, Modee, Grosvenor, and Morris, made a presentation to Forest Supervisor Doug Leisz and Forest Recreation Officer Ellis Smart. The preliminary estimate for the building alone was $45,000. Over and above this would be the trail to the building, the stream diversion and pool, and the exhibits. Morris had completed the exhibit prospectus, focusing on public education regarding stream pollution, life and history of the Kokanee salmon, and resource management of the Lake Tahoe watershed, including Taylor Creek, the location of the Stream Chamber.

Leisz and Smart were pleased with what had been developed up to this point. They made some suggestions to the design team and agreed to prepare a budget request to the Chief for fiscal year 1966 funding, hoping for a start of construction in spring 1967. Smart was given the task of preparing the total estimate and writing up the request for the structure.

Assuming there would be no problems in getting the funds, Modee started the final design soon after returning from the meeting. He had a predesign meeting with Mathhis to go over the structural concerns. The Eldorado engineering surveyors started right away doing the site survey, including the water table depth.

Figure 2–111. *Scale model of Stream Profile Chamber*

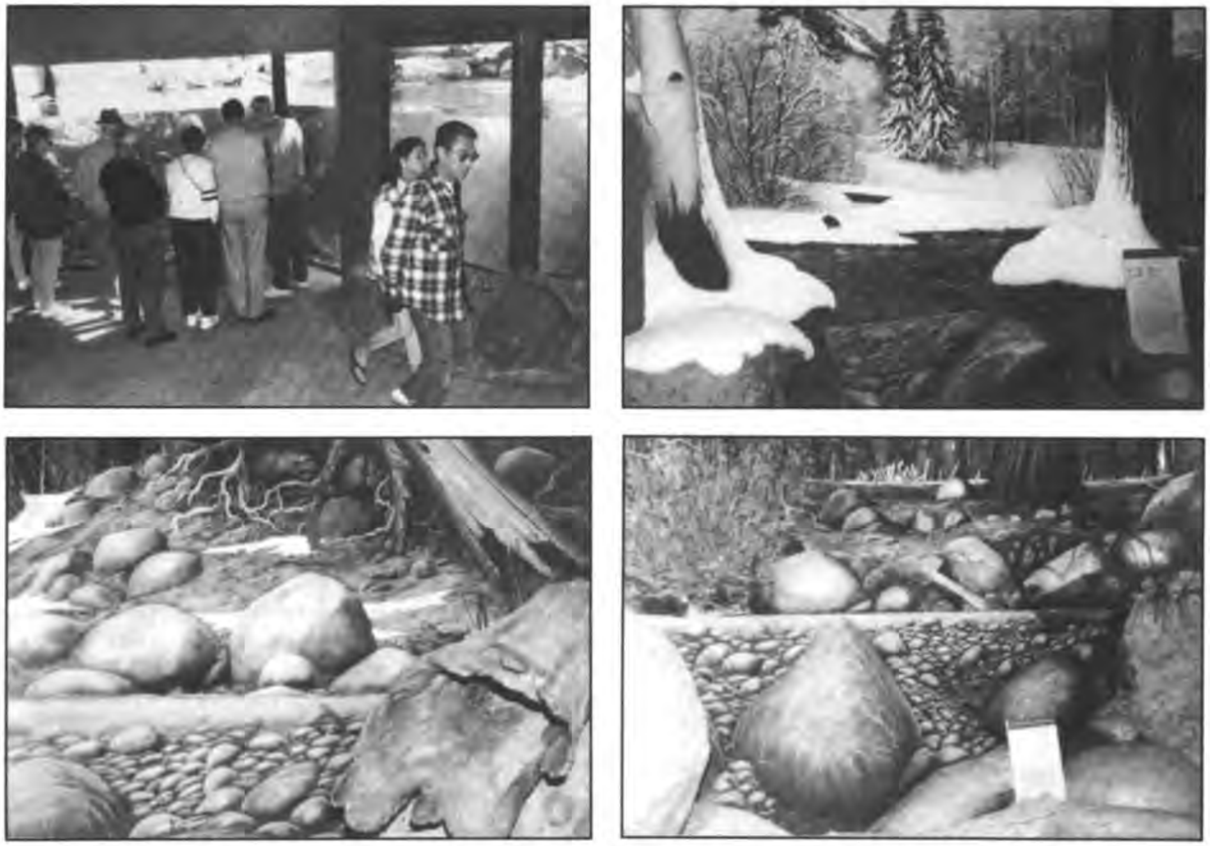


Figure 2–112. *Interior views of remodeled Stream Profile Chamber*

Completed in 1967, for 30 years this building has drawn thousands of visitors each summer to look through the 30 feet of viewing windows and see fish swimming in the manmade pool (figure 2–112). In October 1997, a rededication of the building was held after a major remodeling of the interior (costing $640,000—half of which came from private donors). The windows had been greatly modified to articulate into the building and into the pool; one of the ramps had been modified to meet the latest accessibility standards; and the interior exhibits had been modernized. More than 3,000 people came the first day to see the changes (the building had been closed for 2 years).

Figures 2–113 through 2–138 on pages 137 through 151 show the range of architectural styles used for the Forest Service visitor centers throughout the Nation over the years. Table 1 contains a list of the Forest Service visitor centers.

Table 2–1. National Forest Visitor Centers

Region/Forest	Name	Built
1–Gallatin	Quake Lake	1966
1–Clearwater	Lolo Pass	
1–Flathead	Hungry Horse	
2–Arapaho/Roosevelt	Idaho Springs	1964
2–Black Hills	Pactola	1969
2–Nebraska	National Grasslands	1991
2–Bighorn	Burgess Junction	1992
2–Nebraska	Prehistoric Prairies	Proposed
3–Coronado	Sabino Canyon	1963
3–Gila	Gila Cliff Dwellings	1967
3–Apache-Sitgreaves	Big Lake	1967
3–Carson	Ghost Ranch	1970
3–Coronado	Palisades	1970
3–Kaibab	No. Kaibab	1991
3–Coronado	Columbine	1992
3–Coronado	Portal	1993
3–Apache-Sitgraves	Mogollon	1993
3–Tonto	Roosevelt Lake	1994
3–Kaibab	Williams Depot	1994
3–Lincoln	Sun Spot Solar Observatory	1997
4–Sawtooth	Red Fish Lake	1963
4–Ashley	Flaming Gorge	1965
4–Ashley	Red Canyon	1966
4–Sawtooth	Sawtooth NRA	1977
4–Uinta	Strawberry	1983
4–Briger-Teton	Briger-Teton	1991
5–Eldorado	Lake Tahoe	1964
5–Shasta-Trinity	Trinity Lake (destroyed by fire)	1964
5–Eldorado	Stream Profile Chamber	1967
5–Inyo	Mammoth Lakes	1967
5–Angeles	Chilao	1980
5–Inyo	Mono Lake	1990
5–Angeles	Grassy Hollow	1996
5–Inyo	Shulman Grove	1997
5–San Bernardino	Big Bear	1997
5–Sequoia	Lake Isabella	1997
6–Siuslaw	Cape Perpetua	1967
6–Deschutes	Lava Lands	1975
6–Gifford Pinchot	Mount St. Helens (Silver Lake)	1986
6–Gifford Pinchot	Mount St. Helens (Coldwater)	1993
6–Gifford Pinchot	Mount St. Helens (Johnston Ridge)	1996
6–Mt. Hood	Multnomah Falls	
6–Wallowa-Whitman	Hells Canyon	
8–Chattahoochee	Brasstown Bald	1963
8–North Carolina	Cradle of Forestry (destroyed by fire)	1964
8–North Carolina	Cradle of Forestry	1984
8–Ozark-St. Francis	Blanchard Caverns	1969
8–Chattahoochee	Anna Ruby Falls	1988
8–Caribbean	El Portal del Yunque	1996
8–George Washington	Massanutten	
8–Jefferson	Mt. Rogers	1972
8–Jefferson	Natural Bridge	
9–Superior	Voyagers	1963
9–Monongahela	Cranberry Mtn.	1963
9–Ottawa	Watersmeet	1968
9–Monongahela	Seneca Rocks	1972
10–Tongass-Stikine	Mendenhall Glacier	1961
10–Chugach	Portage Glacier	1986
10–Tongass-Ketchikan	Ketchikan	1994

Figure 2–113. *Conceptual model of Lake Tahoe Visitor Center, Region 5 (1963)*

Figure 2–114. *First (and only) building at Lake Tahoe Visitor Center (1964)*

Figure 2–115. *Ely Visitor Center, Ely, Minnesota, Region 9 (1963)*

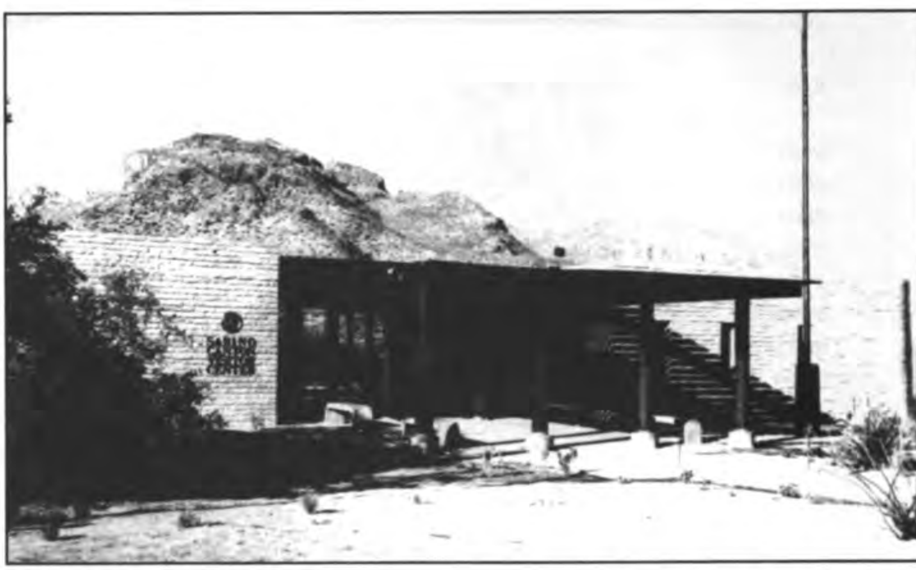


Figure 2–116. *Sabino Canyon, Coronado National Forest, Region 3 (1963)*

Figure 2-117. *Original Cradle of Forestry, Pisgah National Forest, Region 8 (1964)*

Figure 2-118. *Gila Cliff Dwellings Visitor Center, Gila National Forest, Region 3 (1965)*

Figure 2–119. *West Yellowstone Visitor Center, Montana, Region 1 (1966)*

Figure 2–120. *Red Canyon Overlook Visitor Center, Flaming Gorge National Recreation Area, Region 4 (1966)*

Figure 2-121. *Big Lake Visitor Center, Apache National Forest, Region 3 (1966)*

Figure 2-122. *Brasstown Bald, highest point in Georgia, Region 8 (1967)*

Figure 2–123. *Cape Perpetua Visitor Center, Siuslaw National Forest, Region 6 (1967)*

Figure 2–124. *Deck and view from Cape Perpetua Visitor Center*

Figure 2–125. *Pactola Visitor Center, Black Hills National Forest, Region 2 (1969)*

Figure 2–126. *Blanchard Cavern Visitor Center, Region 8 (1969)*

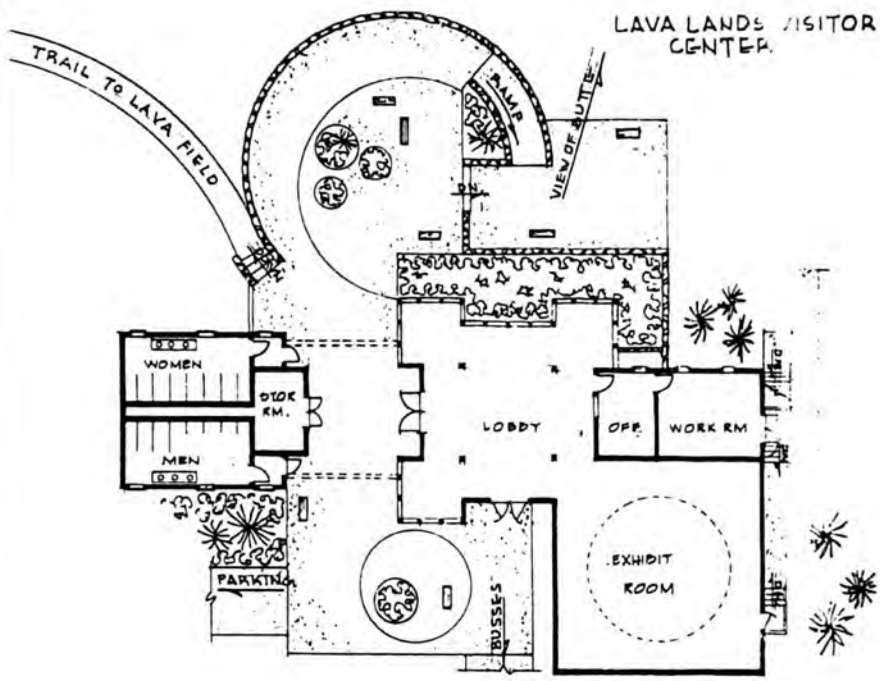


***Figure 2-127.** Lava Lands Visitor Center, Deschutes National Forest, Region 6 (1975)*

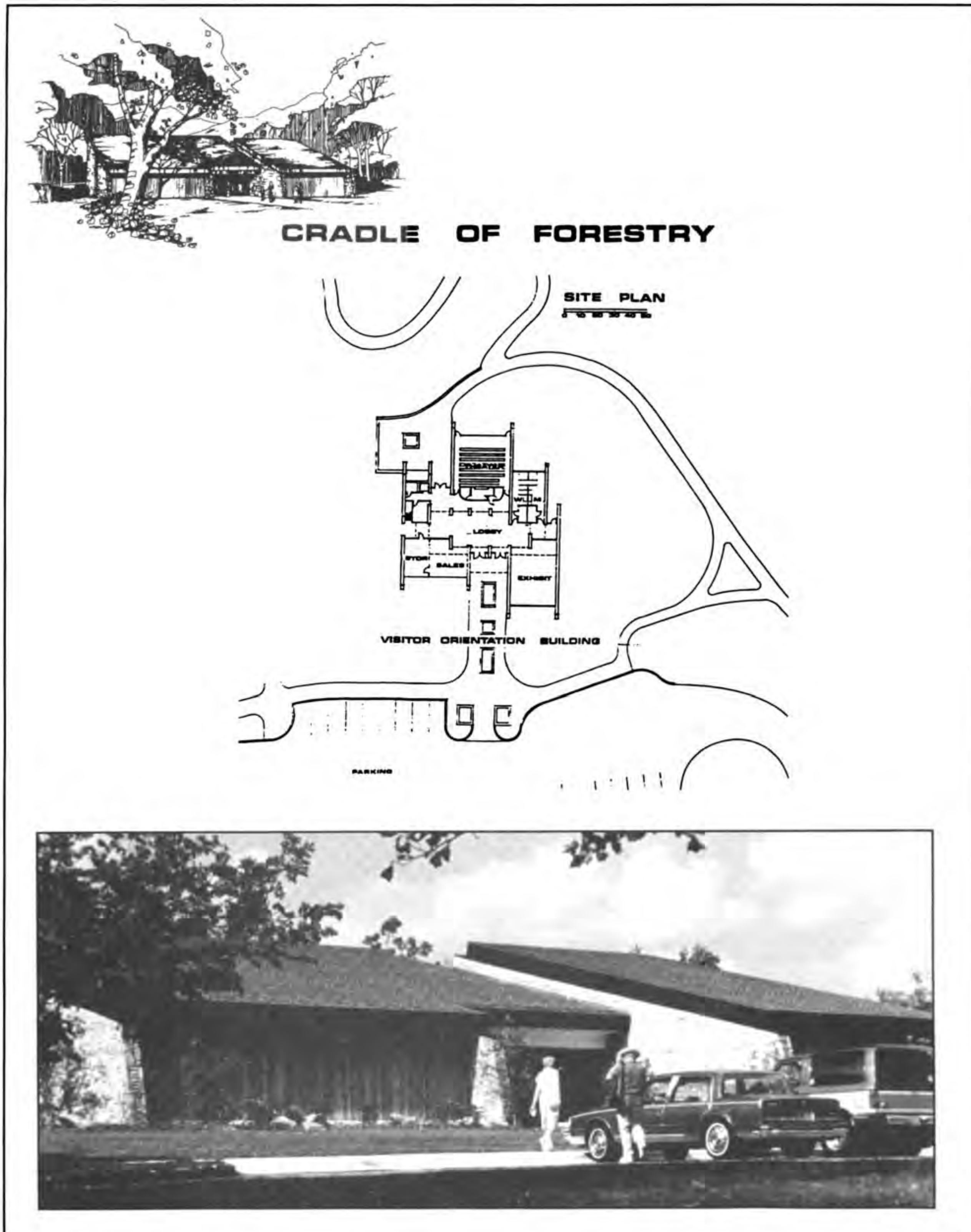


Figure 2-128. *Rebuilt Cradle of Forestry Visitor Center, Pisgah National Forest, Region 8 (1984)*

Figure 2–129. *Chilao Visitor Center, Angeles National Forest, Region 5 (1980)*

Figure 2–130. *Mono Lake Visitor Center, Inyo National Forest, Region 5 (1990)*

Figure 2-131. *Mount St. Helens Visitor Center at Silver Lake, Region 6 (1986)*

Figure 2-132. *Mount St. Helens Visitor Center at Coldwater Ridge (1993)*

Figure 2–133. *North Kaibab Visitor Center, Kaibab National Forest, Region 3 (1991)*

Figure 2–134. *National Grasslands Visitor Center, Wall Administrative Site, Nebraska National Forest, Region 2 (1991)*

Figure 2-135. *Burgess Junction Visitor Center, Bighorn National Forest, Region 2 (1992)*

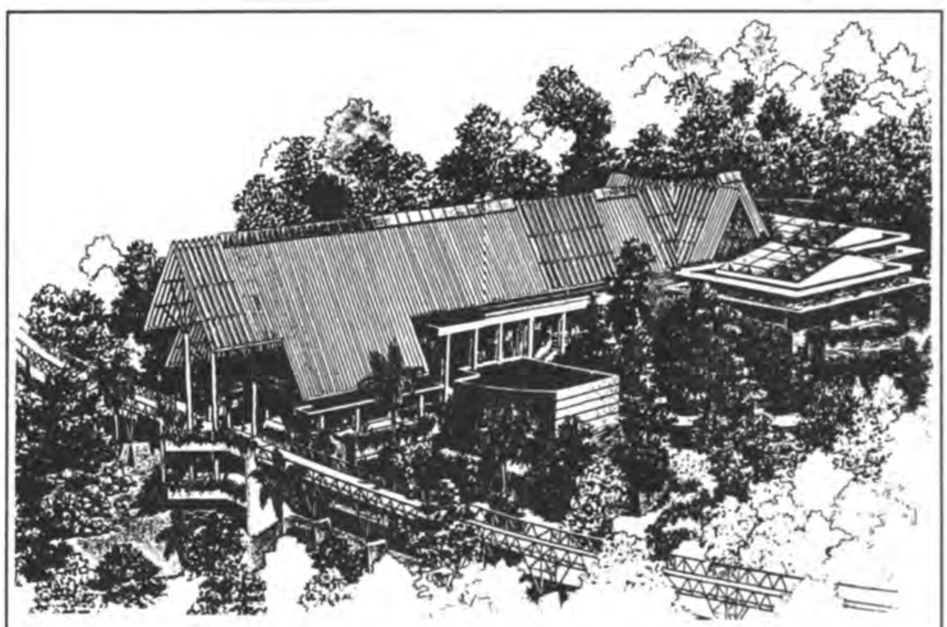


Figure 2-136. *El Portal Visitor Center, Caribbean National Forest, Region 8 (1996)*

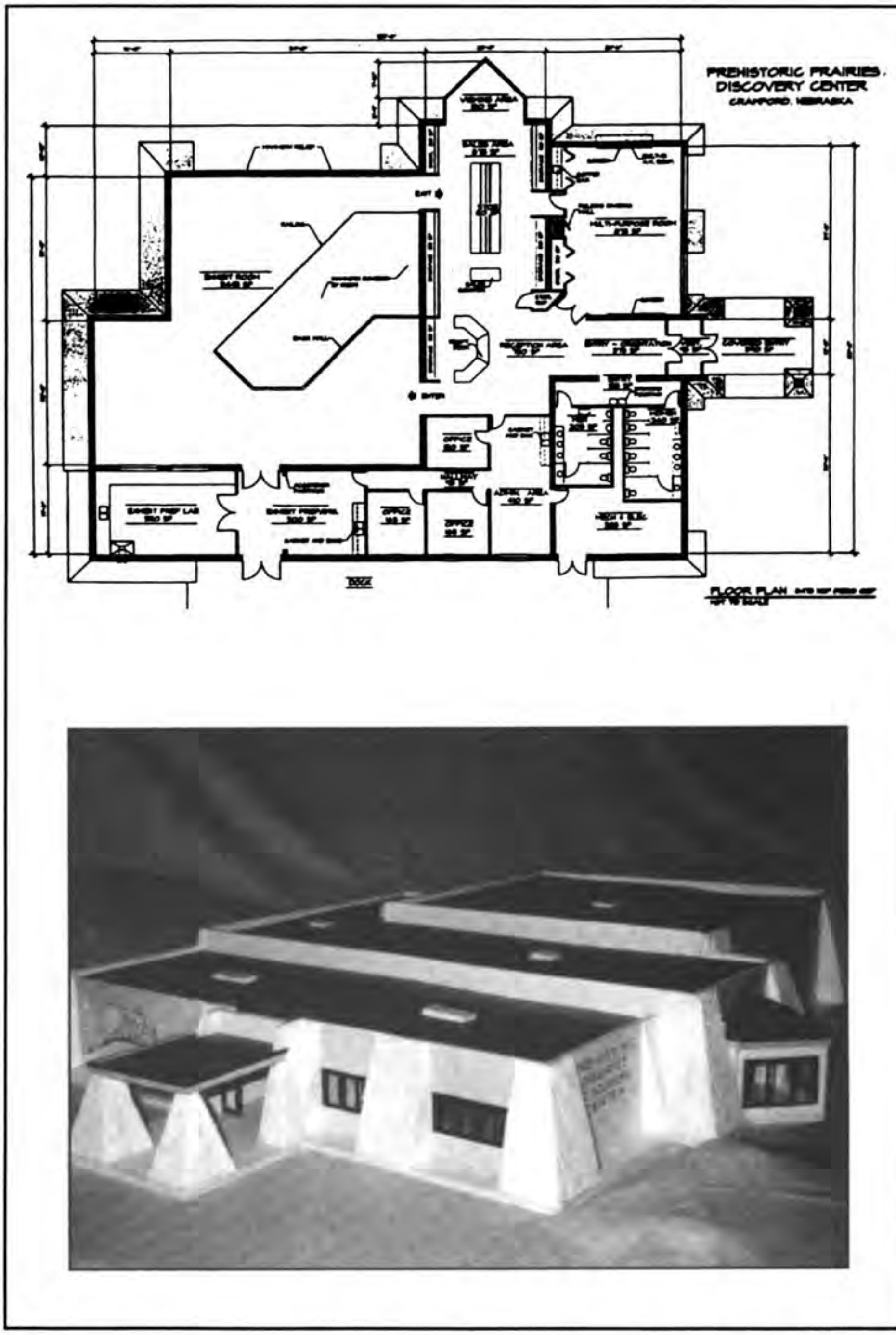


Figure 2-137. *Prehistoric Prairies Discovery Center, Crawford, Nebraska, Region 2 (1998)*

Figure 2-138. *Grassy Hollow Visitor Center, Angeles National Forest, Region 5 (1996)*

Research Buildings

When the Forest Service was created in 1905, it was recognized that research was needed to guide the new agency's efforts. European experience, which provided the best example of forestry at the time, was not an adequate basis for American forestry because of the different species, climates, and social and economic conditions prevailing in the United States. At that time, field studies were conducted throughout the United States, but all of the investigators were headquartered in Washington, DC.[1]

A significant change in the research organization occurred in 1908 with the establishment of a system of forest experiment stations. The first station was established at Fort Valley on the Coconino National Forest in Arizona, with similar stations built in Colorado, Idaho, California, Washington, and Utah.[2]

These "stations," however, were rather small and localized—more like what were later called "field centers" or "work centers" or even "experimental forests." In 1915, research in the Forest Service was consolidated within the newly established Branch of Research. The first regional forest experiment stations were the Appalachian and Southern Forest Experiment Stations, which were established in 1921. In 1923, the Lake States and Northeastern Forest Experiment Stations were established, followed in 1924 by the Pacific Northwest Station and in 1925 by the Allegheny, Central States, and Northern Rocky Mountain Stations. The California Station (1926), the Intermountain and Southwestern Stations (1930), and the Rocky Mountain Station (1935) completed coverage of the forested regions of the continental United States.

In 1909, forest products research was centrally located at the University of Wisconsin at Madison. This Forest Products Laboratory building (figure 2–139) was built by the University for the Forest Service and was dedicated in 1910.

Early in its history, the Forest Service established experimental forest reserves, areas set aside from normal day-to-day operations to study various ecosystems through scientific controls. The first buildings were similar to those constructed for the forest management buildings, using the same style and materials. When the first stations were created, they were all associated with universities; the buildings were either college buildings on campus or rented facilities just off campus.

In the 1930's, as with administration buildings, there was a boom in construction for research. Many of the scientific research facilities were built by the CCC. Groben's 1938 "Acceptable Plans" book included a research facility (figure 2–140).

In California, three notable complexes of buildings were constructed, as was a unique structure at an experimental forest. The complex of buildings at

Figure 2–139. *Forest Products Laboratory, Madison, Wisconsin: original building*

the Fresno Experimental Range was designed in the regional office to be constructed of adobe blocks. Experts from Mexico were brought in to teach the CCC construction crew how to mix, mold, sun dry, and build with this southwestern construction material. North of Fresno, in Placerville, the Forest Genetics Laboratory was constructed by the CCC (figure 2–141). In southern California, the headquarters of the San Dimas Experimental Forest in Glendora and a lysimeter on the experimental forest were designed in the Regional Office and constructed by the CCC.

The headquarters building for the Priest River Experimental Forest in Idaho's Panhandle National Forest (figure 2–142) was constructed in the late 1930's. The buildings at this complex have been nominated for the National Register of Historical Buildings. Figures 2–150 and 2–151 on page 162 show examples of other research building styles of the 1930's.

Between 1931 and 1932, a new laboratory building for the Forest Products Laboratory was designed and constructed on the campus of the University of Wisconsin. The laboratory was designed by the Chicago architectural firm of Holabird and Root. Both Holabird and Root were graduates of the Ecole des Beaux Arts in Paris and the firm's background included the steel-framed Rand Tower and the Palmolive Building, early skyscrapers in the commercial district of Chicago. The firm also designed the Chrysler Building at the 1939 New York World's Fair.

The building (figure 2–143) typifies the American Perpendicular or Modernistic phase of the Art Deco style as it was applied to commercial design. The building is detached, with a U-shaped plan. The frame of the building is

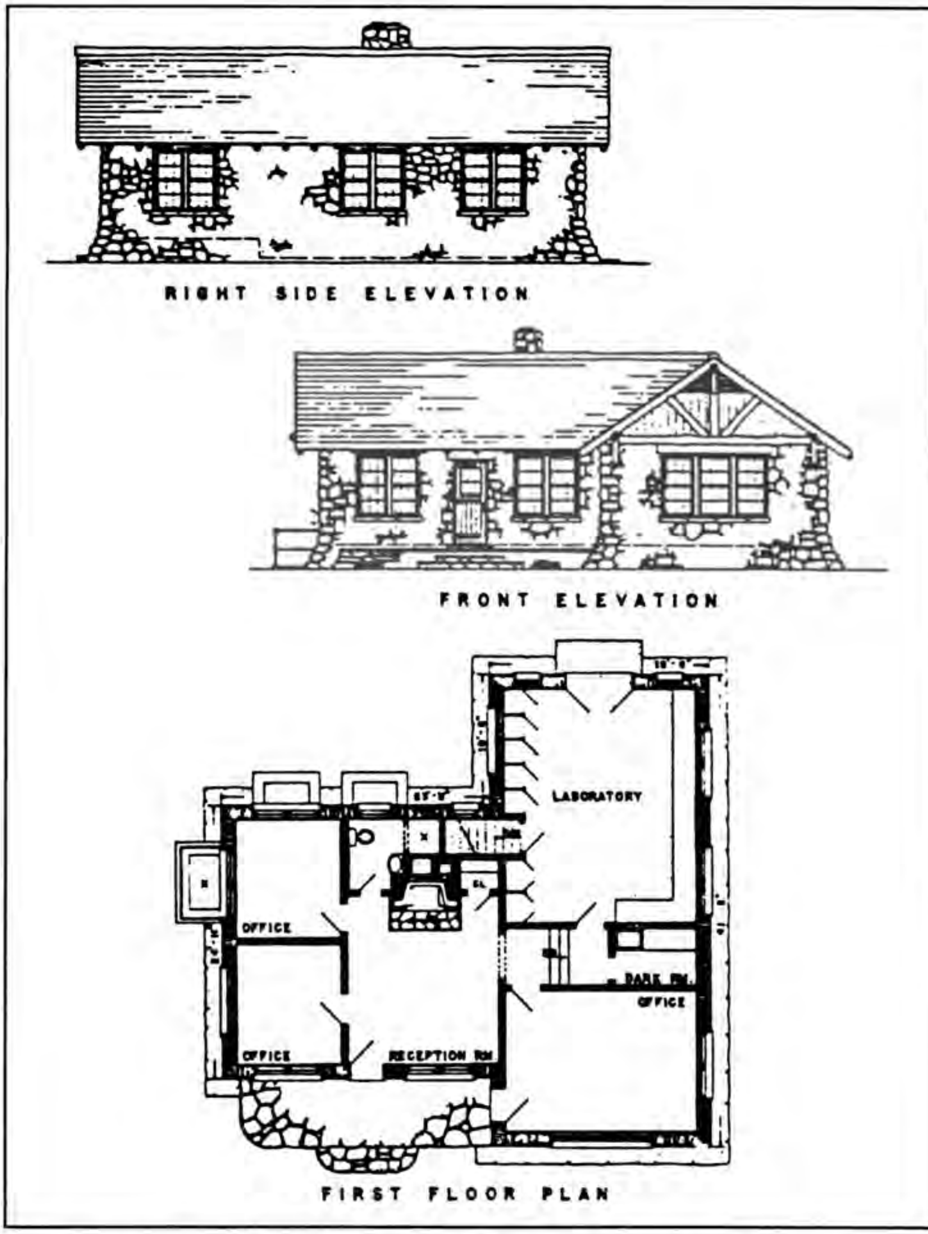


Figure 2-140. *Office and laboratory, Irons Fork Experimental Forest, Mena, Arkansas, Region 8*

steel covered with concrete. The exterior is faced with smoothly dressed white Indiana limestone blocks. The windows are massed in groupings of four: one-over-one, double-hung sashes with flat surrounds. Cypress-wood fins running the height of the vertical faces flank each window and add a decorative and functional detail. The fins shade the glass in the windows during the heat of the day and reduce solar gain. Atop the vertical mass is a set-back "penthouse" housing the building's mechanical systems. The roof is flat, with a plain parapet, and there is no cornice decoration. This building style is unique. The building entrance is from Walnut Street and is called Gifford Pinchot Drive.

Figure 2–141. *Office and laboratory, Institute of Forest Genetics, Pacific Southwest (PSW), Placerville, California (1938)*

Figure 2–142. *Priest River Experimental Forest, Priest River, Idaho (1939)*

Figure 2-143. *Forest Products Laboratory, Madison, Wisconsin: new building constructed under WPA program (1932)*

In the postwar years, the Forest Service set up two Engineering Technology and Development Centers. One was located in Missoula, Montana, and the other in Arcadia, California. At the outset, the main function was development of road building and maintenance equipment. Over the years this was expanded to firefighting, recreation, and building systems and equipment. In the early 1970's, a new center for the California group was constructed just outside the city of San Dimas (figure 2-144).

In the early 1960's, Benny DiBenedetto moved from his post as Regional Architect for Region 6 to become Station Architect for the Pacific Northwest Experiment Station. DiBenedetto almost immediately began to design the new laboratory facilities at Bend and Corvalis, Oregon. His work was so unique that it was published in national architectural magazines (figures 2-145 and 2-146). Examples of other design styles of the 1960's through the present can be found on pages 163 through 168.

In the mid 1960's, a joint venture by the Southeastern Forest Experiment Station and the Forest Products Laboratory produced several designs for low-cost wood homes. The designers were Harold F. Zornig of Athens, Georgia, and L.O. Anderson of Madison, Wisconsin. The various Regions constructed several of these as prototypes to be used in public service announcements. The estimated cost for construction was about one-half the cost of standard-design tract homes of the time (figures 2-147 through 2-149). The actual construction costs were higher than estimated.

Notes

1. Herbert C. Story, *History of Forest Service Research, Development of a National Program*, p.8.
2. Ibid., p. 13.

Figure 2-144. *Equipment Development Center, San Dimas, California (1970)*

Figure 2-145. *Silviculture Research Laboratory, Bend, Oregon (1963)*

Figure 2-146. *Forestry Sciences Laboratory, Corvallis, Oregon (1963)*

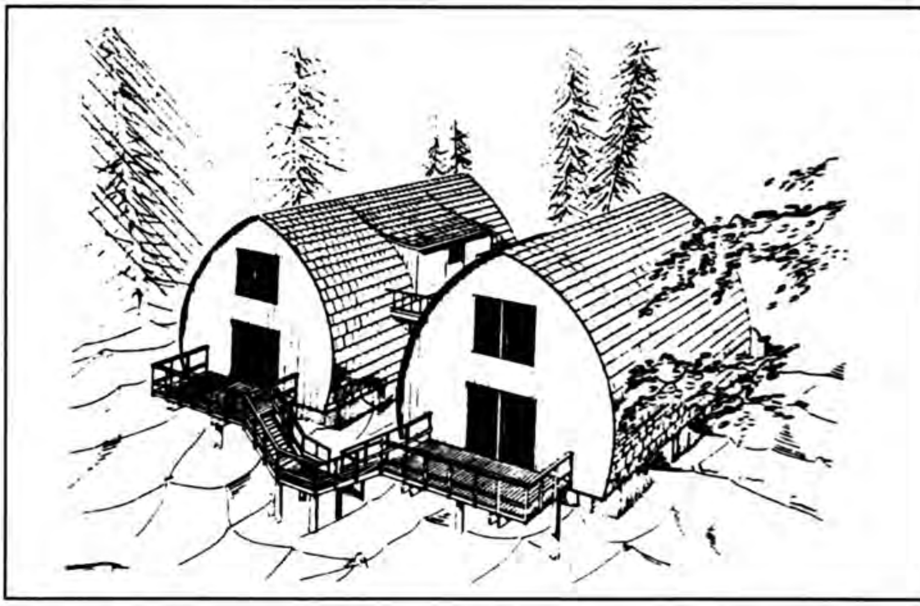


Figure 2-147. *A Hillside Duplex of Wood: This interesting design for a two-family home is intended particularly for sloping sites. It provides a total of 900 square feet in each of the two units, approximately half on each of two floors. The design is based on a pole-frame structure combined with wood arches that can be built in a simple shop.*

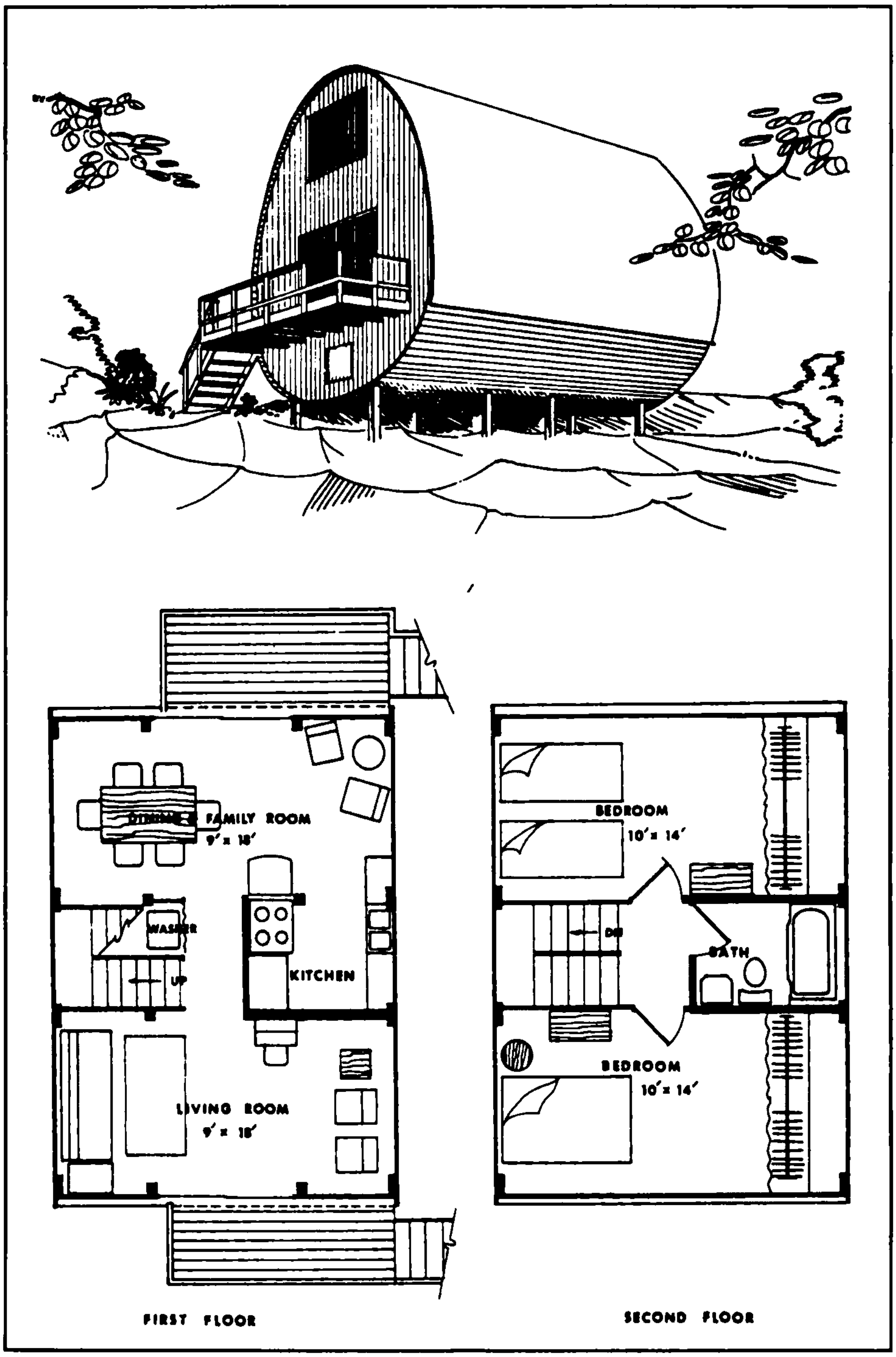


Figure 2-148. *Tubular Home of Wood: This unusual home offers attractive living space within its curved walls. It is intended for sloping sites in rural areas. This home provides 1,000 square feet of floor area.*

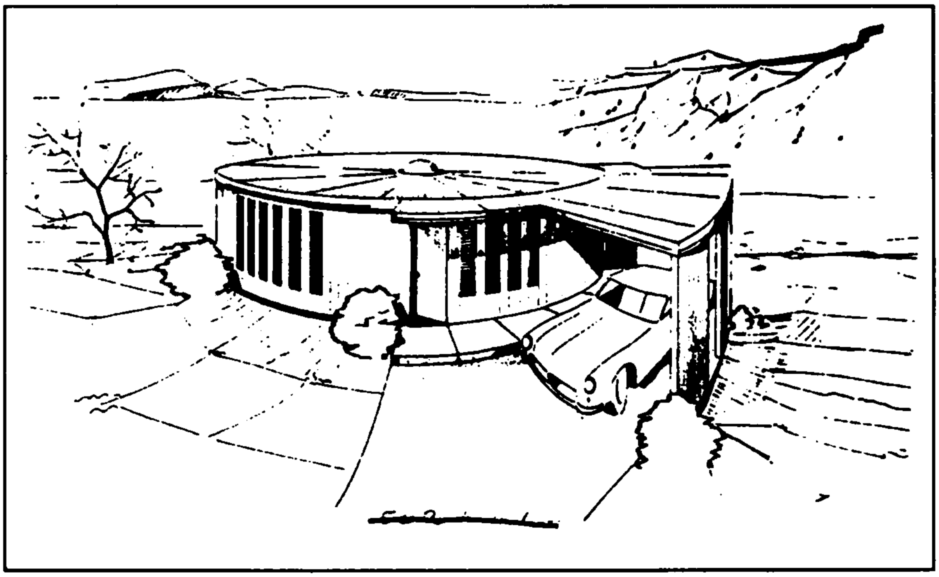


Figure 2-149. *A Round House of Wood: This unique design provides a three-bedroom home with 1,134 square feet of living area. It is designed for a flat site. A smaller version provides three bedrooms and a total area of 804 square feet.*

Figure 2–150. *Combined office, laboratory, and bachelor's quarters, Roscommon, Michigan (1934)*

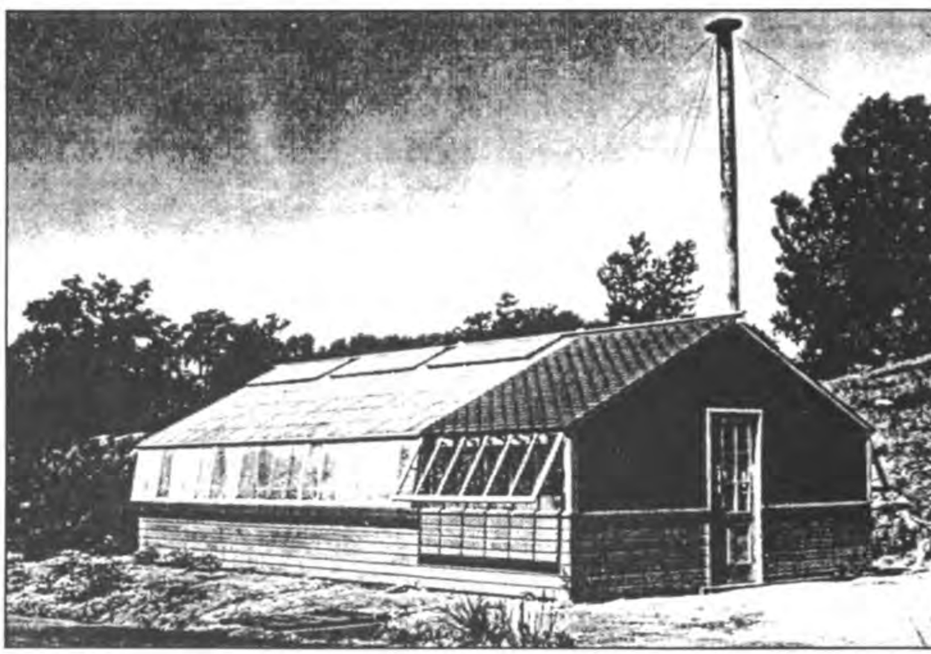


Figure 2–151. *Greenhouse, San Juaquin Range PSW, O'Neals, California (1936)*

Figure 2-152. *Northern Institute of Forest Genetics Reinlander, Wisconsin (1960)*

Figure 2-153. *Headwaters Forest Research Center, Grand Rapids, Minnesota (1960)*

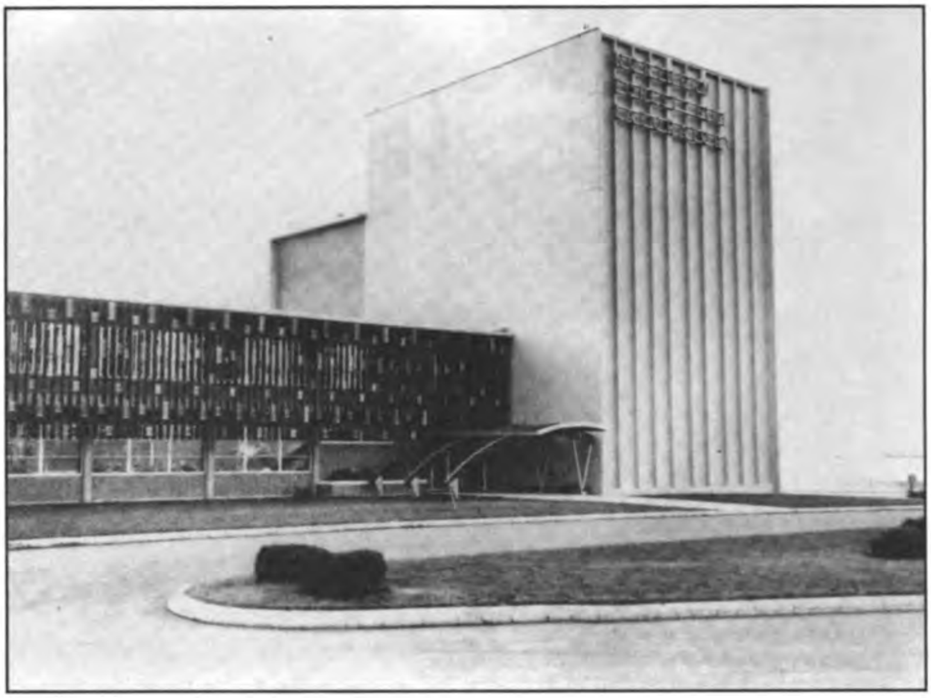


Figure 2–154. *Northern Forest Fire Laboratory, Missoula, Montana (1961)*

Figure 2–155. *Shelterbelt Laboratory, Bottineau, North Dakota (1962)*

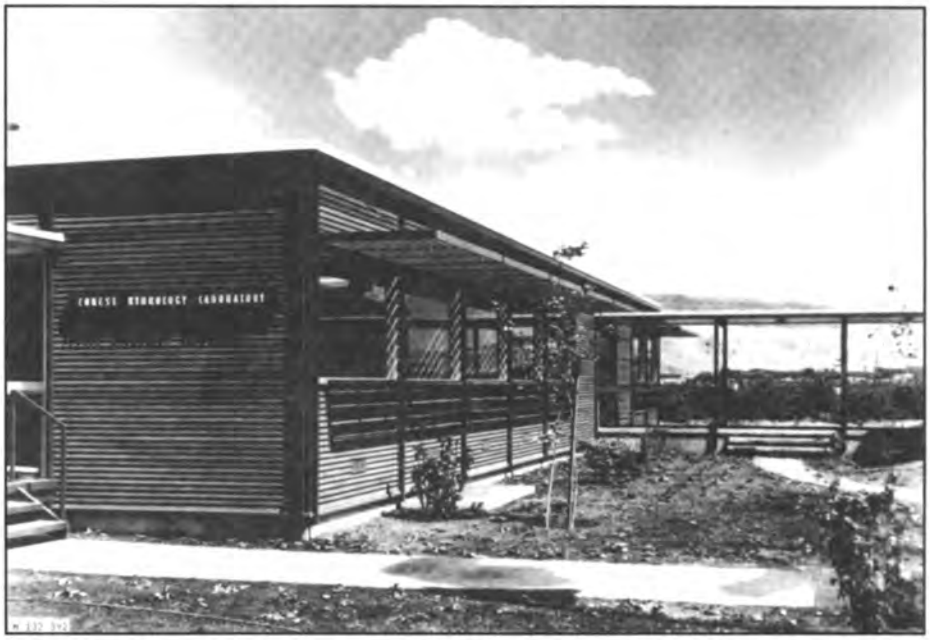


Figure 2–156. *Forest Hydrology Laboratory, Wenatchee, Washington (1963)*

Figure 2–157. *Laboratory, Durham, North Carolina (1963)*

Figure 2-158. *Moscow Laboratory, Moscow, Idaho (1963)*

Figure 2-159. *Silviculture Laboratory, Sewanee, Tennessee (1966)*

Figure 2–160. *Provo Laboratory, Rocky Mountain Station, Provo, Utah (1969)*

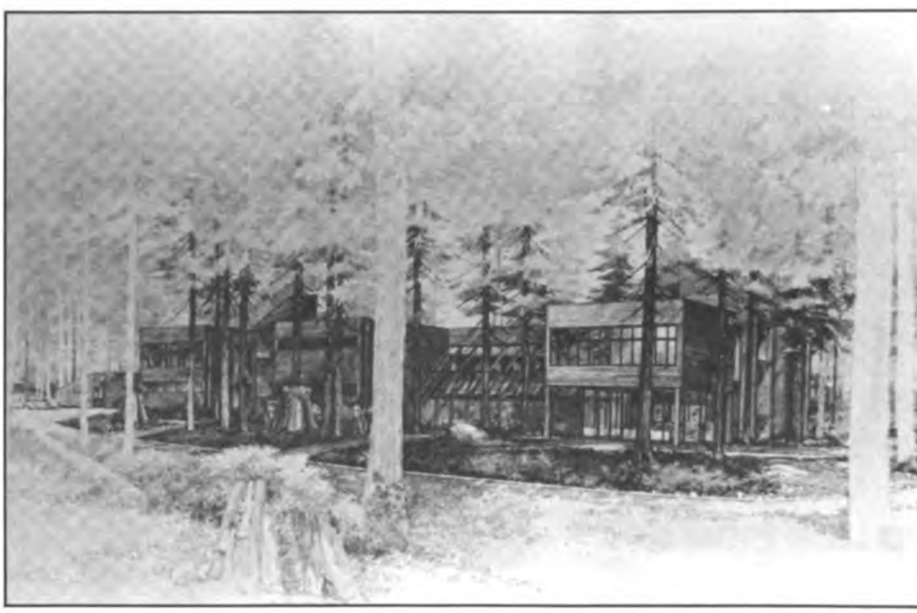


Figure 2–161. *Redwood Sciences Laboratory, Arcata, California (1971)*

Figure 2-162. *Corvallis Laboratory, Corvallis, Oregon (1978)*

Figure 2-163. *Fresno Laboratory, Region 5 (1985)*

Chapter 3 People

Leaders and Implementers

"The final test of a leader is that he leaves behind him in other men the conviction and will to carry on"

—Walter Lippmann,
Roosevelt Has Gone

The Forest Service Architects

Current Architects (1999)

Rudy Brown
Bruce Crockett
Daryl Dean
Lee Deeds
Dave Dercks, Region 9*
Ken Duce
Dave Faulk, Region 2*
Nancy Freeman
Dana Henderson
Maurice Hoelting
Josiah Kim, Washington Office
Jane Kipp
Jeff Klas
Kurt Kretvix, Region 3*
Keith Lee
Gil Levesque
Hal Miller
Oswaldo Mino
Wilden Moffett, Region 4*
Thad Schroeder
Jo Ann Simpson, Region 6*
Kathie Snodgrass
William A. Speer, Jr., Region 8*
Adele Tsunemori

Retired Architects (1999)

Arthur F. Anderson, Region 1*
S.A. Axtens, Region 2*
Jim A. Calvery, Region 9*
Harry W. Coughlan, Region 1*
Don Critchlow
A.P. "Benny" DiBenedetto, FAIA, Region 6*
Clyde P. Fickes, Region 1*
Bill Fox, Region 1*
W. Ellis Groben, Washington Office*
John R. Grosvenor, Region 5*
Glenn Hacker
Alton Hooten, Region 6*
W. Earle Jackson, Region 2*
Keplar B. Johnson, Region 5*
Harry Kevich, Region 5*
Joe Lazaro
Bob LeCain, Region 1*
Joe Mastrandrea, Region 6*
Allan Mitchell
Dick Modee
George Nichols, Region 4*
Nels Orne, Region 9*
A.E. Oviatt (Research)
Ken Reynolds, Region 6*
Bob Sandusky, Region 5*
William Turner, Region 4*
Art Ulvestad
Wes Wilkison, Region 2*
Jim Wilson
Harold Zorning (Research)

*Denotes Regional Architects

Figure 3-1. Architects' Gathering, Albuquerque, New Mexico, 1986
Front Row: *Thad Schroeder, Region 2; Maurice Hoelting, Region 8; Dave Dercks, Region 9; unidentified (National Park Service); Wilden Moffett, Region 4; Joe Mastrandrea, Region 6; unidentified (National Park Service).*
Second Row: *Bruce Crockett, Region 1; Don Critchlow, Region 8; William A. Speer, Region 8; Jo Ann Simpson, Region 6; Glenn Hacker, Region 1; unidentified (National Park Service); George Lippert, retired Civil Engineer*
Third Row: *Lou Archambault, Region 3; Dave Dodson, Region 1; Hal Miller, Region 6; Jim Wilson, Region 6; John R. Grosvenor, Region 5; Ken Duce, Region 1; Dave Faulk, Region 2; Lee Deeds, Region 1; Bob Sandusky, Region 5; Keith Lee, Region 5.*

Architects Who Left the Forest Service

Lou Archenbault, Region 3*
Tom Baltzell
Albert Biggerstaff
Jerome Brewster
Bill Bruner
Pam Chang
Byron Cochran
Dave Dodson, Region 1*
Ann Dunn
Mari Ellingson
Ward Ellis
Roy Ettinger
Dale Farr
Linn Argile Forrest, Region 10*
Dave Frese
Howard Gifford
Dave Hall
Gunnard Hans
(Forest Products Laboratory)
Bill Headley
Jerry Heyers
Bill Hohnstein
Duane Hoochins
Charles Jaka
George Kirkham, Region 3*
Arthur Longfellow
Dick Lundy
Mike Madias
Tom Morland
Harold Nelson
Bill Peterson
George Raach
Neal Sands
Deford Smith, Region 8*
Cal Spaun
Si Stanich
Allan Tucker
William Irving "Tim" Turner, Region 6*
Fred Wagoner
Bill Wells
R.M. Williams
Judy Winfrey
Dean Wright
Ron Wylie

*Denotes Regional Architects

Regional Architects

Region 1
Arthur F. Anderson
Harry W. Coughlan
Dave Dodson
Clyde P. Fickes
Bill Fox
Josiah Kim
Bob LeCain

Region 2
S.A. Axtens
Dave Faulk
W. Earle Jackson
Wes Wilkison

Region 3
Lou Archambault
George Kirkham
Kurt Kretvix
Hal Miller
George Nichols*

Region 4
Wilden Moffett
George Nichols
William Turner

Region 5
John R. Grosvenor
Keplar B. Johnson
Harry Kevich
Keith Lee
Bob Sandusky

Region 6
A.P. "Benny" DiBenedetto, FAIA
Alton Hooten
Joe Mastrandrea
Ken Reynolds
Jo Ann Simpson
William Irving "Tim" Turner

Region 8
Deford Smith
William A. Speer, Jr.

Region 9
Jim A. Calvery
Dave Dercks
Nels Orne

Region 10
Linn Argile Forrest

Washington Office
A.P. "Benny" DiBenedetto, FAIA (Research)
W. Ellis Groben

*George Nichols served both Region 3 and Region 4 from Ogden.

Figure 3–2. Architects' Gathering, Denver, Colorado, 1997
Front Row: *Dave Faulk, Region 2; Wilden Moffett, Region 4; Thad Schroeder, Region 2; Lee Deeds, Region 2; Maurice Hoelting, Region 8; Nancy Freeman, North Carolina; Randy Warbington, Mechanical Engineer, Region 8; Kathie Snodgrass, Region 1; Ken Duce, Region 1; Josiah Kim, Region 1; Bruce Crockett, Region 1.*
Second Row: *Jim Wilson, Region 6; Jeff Klas, Region 3; John R. Grosvenor, Region 5; Gil Levesque, Region 4; George Lippert, retired Civil Engineer; Kurt Kretvix, Region 3; Daryl Dean, Region 9; Hal Miller, Region 4; Dana Henderson, Region 5; Gary Gibson, Architectural Technician, Region 4; William A. Speer, Region 8.*
Not in Photo: *Keith Lee, Region 5; Jane Kipp, Region 1; Oswaldo Mino, Region 1.*
Not at Gathering: *Jo Ann Simpson, Region 6; Rudy Brown, Region 2; Adele Tsunemori, Region 2.*

The following sections in this chapter are a compilation of memoirs by various past and present Forest Service architects. Their experiences were either written by the architect or by John R. Grosvenor based on interviews he conducted.

Editing in these sections was minimal; however, we made the sections consistent with Government and Forest Service Engineering styles and format. In some instances, spellings of people and places and exact dates could not be verified and can only be left up to the individual architect's recall.

W. Ellis Groben

Washington Office Architect (1933–1953)

Ellis Groben was a product of the East, a native of Philadelphia, Pennsylvania. He attended the University of Pennsylvania for undergraduate architectural training and then went to the Ecole des Beaux Arts School of Architectural Design in Paris, France, for his postgraduate education.

He entered into apprenticeship training in and around Philadelphia. His early practice was with architectural firms on the east coast. He was hired as Chief Architect for the city of Philadelphia, but a political upset there forced him to seek other employment. After spending some time doing residential design, he was employed by T.W. Norcross, Chief Engineer of the Forest Service, as the national consulting architect. When he arrived he looked the part, with a flowing mustache and goatee.

In the early years, Groben produced concepts for Forest Service structures, which were detailed by his draftsman, Ed Hamilton. Groben enjoyed making elaborate renderings of his building concepts; his drawing of the proposed headquarters building for the Tropical Forest Experiment Station in Rio Piedras, Puerto Rico (figure 3–3), hangs in the lobby of the building today. He also spent considerable time relocating his automobile about the streets of southwest Washington, DC, to minimize his violations of the overtime parking ordinance.[1]

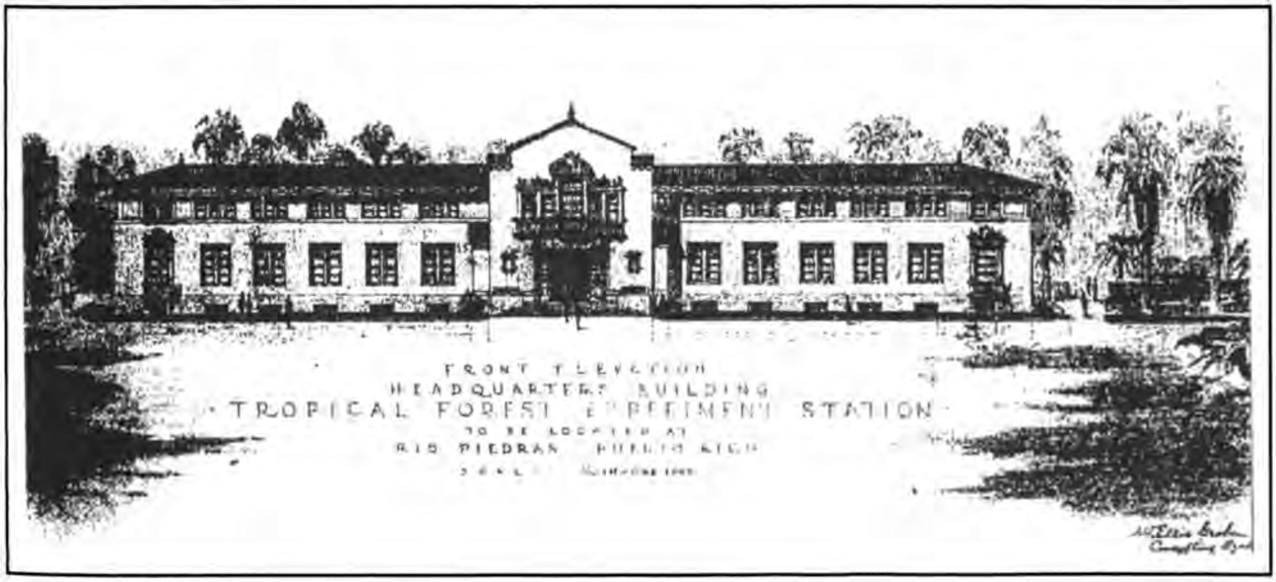


***Figure 3–3.** Rendering of the Tropical Forestry Building, Rio Piedras, Puerto Rico, by Ellis Groben (1939)*

Almost all we know of Groben's architectural philosophy comes from three major documents he signed. The first of these and the most extensive is "Acceptable Plans for Forest Service Buildings," dated 1938. This is a large collection of plans and elevations selected by Groben from all of the various Regions of the Forest Service and other Federal land management agencies. He states in the Preface: "The majority of plans and elevations have been reproduced in their entirety, as prepared by the respective regional offices; others have been slightly modified to correct or improve minor details without changing their general scheme."

The second document, written in 1940, is "Architectural Trend of Future Forest Service Buildings." In the first paragraph, Groben states: "The external design of Forest Service buildings calls for a greater display of imagination and inventive genius than heretofore, in order to give them sufficient individual character to definitely express their purpose and the particular Federal agency to which they belong."

He was upset by the eclectic trends of the architectural profession of this time. He said: "The almost universal practice, now commonly in vogue in a number of Regions, of always employing the conventional urban styles of architecture for Forest Service buildings generally, could be discontinued advantageously for styles which are more expressive of the Forest Service itself, and, at the same time, more appropriate to the diverse conditions, respective locations and particular environments in which they are to be erected." He goes on to say: "No one architectural style can serve universally to adequately represent any particular Federal agency because the country itself is too vast in extent and too varied in character to permit of it with any degree of success. For example, the Colonial style is incongruous in regions where, due to traditional usage, it has been found that the Mexican, Spanish, or Ranch types are appropriate and practical. The contrary is equally true. As in most of his documents, he follows up with plans to explain.

He concludes this document with: "Engineering, Washington Office, welcomes the opportunity of reviewing any sketches which may be submitted for its special consideration, comments and suggestions, etc., in advance of actual construction in order to assist insofar as possible, in improving matters of architectural design."

The last of the three documents, the "Improvement Handbook," focuses on the construction and maintenance of Forest Service buildings. George Nichols, Regional Architect, Region 4, prepared most of the text from reviewing handbooks and bulletins from the various Regions. Groben states in the Preface: "The purpose of this handbook is to make available the methods and standards recognized as good practice in building structural improvements on the national forests to Forest Service engineers, architects, and men engaged in construction."

All three of these documents provided strong leadership to the new architects emerging in all of the Forest Service Regions. As stated in chapter 1, Eras, there is no record of a Forest Service architect prior to the 1930's. Ellis Groben established an effective standard from his position as National Consulting Architect of the agency. Without his voice from Washington, DC, the course of the history of Forest Service architecture could have been as diverse as the many forests in this Nation. Groben put his skills as both designer and public administrator to work guiding the Forest Service as it worked to create its own style of architecture.

In the summer of 1944, Groben made his first visit to a forest west of the Mississippi; he went to Montana on a monitoring trip, meeting with Clyde Fickes. Fickes thought some of his reactions to western conditions and practices were most interesting, and at times very amusing. Groben remarked time and again as they drove through the forests about the amount of dead timber lying on the ground. Groben asked why it wasn't being gathered up and being put to some use. As a student in France and Germany, he had observed how the ground or floor of the forests was kept clean and free of debris. Fickes found it difficult to convince him that we were not overlooking a productive phase of forest management.[2]

Groben had one bad habit that was disliked by the architects in the various Regions. When the architects sent him copies of preliminary plans and sketches for his review and recommendations, he would make his comments and corrections in red pencil on the original documents. These included fully rendered color drawings that were ruined by Groben's additions and comments. This was the way professors in architecture schools in Europe and the United States dealt with their students.

Groben was not only an outstanding architect who designed many public buildings, but he was also an artist of real ability. He prepared plaques for Gifford Pinchot, to commemorate his 80th birthday, and Evan Kelly, upon his retirement. Some of his artwork is illustrated on the following pages (figures 3–4 through 3–6).

Notes

1. USDA Forest Service, *The History of Engineering in the Forest Service*, p. 362
2. Fickes, *Recollections*.

Figure 3–4. *Drawing by Ellis Groben to commemorate the retirement of Evan Kelley (1944)*

Figure 3-5. *Drawing by Ellis Groben to commemorate the 80th birthday of Gifford Pinchot, former Chief of the Forest Service (1945)*

Figure 3–6. *Poster drawn by Ellis Groben to commemorate the 50th anniversary of the Forest Service (1955)*

Clyde P. Fickes

Regional Architect, Region 1 (1929–1944)

Clyde Fickes was born in Nelson, Nebraska, in 1884. He grew up in Pittsburgh, Pennsylvania, spending summers on a farm in Bedford County with his maternal grandmother. He attended Ohio Northern University, majoring in engineering. After graduation, he went to Kalispell, Montana, where he lived with an uncle.

Fickes was appointed a Forest Guard on July 6, 1907. He furnished a saddle and packhorse and was assigned to work with D.C. Harrison, a topographer, to survey and plat administrative site withdrawals.

For the next 17 years he worked on several forests in Region 1 and was assigned duties in various aspects of forest management. When Clyde transferred to the Madison National Forest, one of his first tasks was to learn how to drive the Government-owned Model T Ford. "On a forest like the Madison," Clyde said, "good transportation was a necessity. Any place one wanted to go was 20 to 40 miles, so it was not a very good saddlehorse chance. Four miles an hour against 40, and a Ford could be driven cross-country on at least half of the forest, especially if the Ford was equipped with a Ruckstell axle."

After Clyde had worked on the Madison for a period of time, the following announcement was posted in the Sheridan Office:

> Fickes Family Departs for Sandpoint—C.P. Fickes, of the local Forest Office, who has been transferred to the Pend Oreille National Forest with headquarters at Sandpoint, Idaho, expects to leave today or tomorrow for his new station. Mr. Fickes was transferred to the Madison Forest from the Nezperce on March 5, 1924, and has since that time occupied the position of Assistant Supervisor on the Madison Forest.

"In due time I reported to Forest Supervisor Ernest T. Wolf at the Pend Oreille National Forest in Sandpoint, Idaho, and met Assistant Supervisor L.F. "Duff" Jefferson, Forest Assistant George M. DeJarnette, and Chief Clerk Walter W. Schwartz. The office was in a storeroom on the ground-floor level, with a private office partitioned off for the Supervisor. The forest was in need of improvements of all kinds, and my first job was to acquaint myself with what we had and then help to prepare overall plans for future development of the forest. We had a very light fire season in 1927, so I was able to visit all the ranger districts and visit with rangers about their improvement problems. The Port Hill District was allotted money for a lookout house on Smith Peak for which we did not have any construction plans.

"My father was a carpenter and builder, and I virtually grew up among carpenter shop shavings and small building construction. I drew up some detailed plans for a 12- x 12-foot building of frame construction with a 6- x 6-foot cupola, and ordered some lumber and hardware. Frank Casler hauled it up to the Smith Creek Ranger Station. At that time there were only half a dozen or so satisfactory, improved fire lookouts on the Idaho forests of Region 1. At that time the Region did not have any kind of structural plans and specifications for a lookout structure. Region 6, at Portland, Oregon, had a plan for a 12- x 12-foot building with an observation cupola on top, which was developed for that Region by some architectural engineer. The estimated cost of that building was from $1,200 to $2,000 to construct. I had prepared plans for a ready-cut lookout, and the cost of materials was less than $100. When I returned to the office after this chore, I was informed that the Regional Office wanted me to come in on a detail to design a lookout house for the Region. Joe Halm, a draftsman in Engineering, did all the tracing for the ready-cuts.

"Then it was decided that I should become a part of the Regional Office staff in the Office of Operations. In May 1929, I moved my family from Sandpoint to Missoula. I became the person supervising the design and construction of all improvements (trails, telephone lines, buildings, campground layouts, and later radio communications).

"In order to take care of the volume of work generated by the new emergency appropriations and the CCC's, it was necessary to set up an architectural section for the design and planning of major improvements. William J. (Bill) Fox came to us via Butte and the University of Washington at Seattle as a professional architect. Bill eventually supervised a staff of six or seven architectural draftsmen under my general supervision. His first major job was developing the plans for development of the Remount Depot layout.

"Early in my assignment to the Regional Office, it became apparent to me, from my contact with the rangers in the field, that they needed some sort of manual or handbook to which they could refer for information of all sorts on improvement, construction, and maintenance work. I set to work gathering all kinds of illustrations showing how to frame a building wall, how to cut a rafter, what kind of nails to use, how to mix concrete, how to build a brick chimney, what kind of hardware to use and how to order from the dealer, how to build concrete forms, a chapter on log building construction, and the most practical way to string telephone wire and install telephones. This developed into a letter-sized mimeographed volume about 1½ inches thick, which we called the *Improvement Handbook*. This became the rangers' construction and maintenance bible. The manual also contained a section on log building construction, which I eventually developed into the *Log Construction Handbook*. It was printed by the Bureau of Government Printing and sold over 100,000 copies. Along about 1968, the University of Alaska issued a reprint of my *Log Construction Handbook* without giving me any credit. Of course, Government publications are not copyrighted.

"In 1936, we were bodily transferred to the Office of Engineering under Fred Theime. We also took over the direct supervision of ranger station construction.

"The winter of 1936–37, I attended, with several others from Region 1, a conference of Forest Service engineers and architects at the Forest Products Laboratory in Madison, Wisconsin. The first day we had lunch at the cafeteria; while standing in line, I was introduced to the man next to me. The man in front of him turned around and looked at me and said, 'Are you the Clyde Fickes who was at Ohio Northern University in 1903?' It was Jim Brownlee, Regional Engineer at Denver. He was a graduate of Ohio Northern's Engineering School; he and I had been together in a campus fracas in which engineers, pharmacists, and lawyers took on the rest of the campus in a graduation fracas.

"Ted Norcross, Chief of Engineering in the Washington Office, was there, and he had some concerns over the revision of the Trail Manual and the new Telephone Handbook that were about ready for printing. Since I had made some constructive, not to mention critical, comments and suggestions about the makeup of both of them, he arranged for me to go back to Washington with him and help get the job done, which I did."[1]

Fickes was named by Jim Byrne as the lead engineer for the construction of the facilities for the Guayule Rubber Project in 1942 (where he worked from February until November). Major Kelly, his supervisor, wrote: "Clyde Fickes has quit the project for good. He has done a great service here. All whom he has served may not realize the obstacles under which he worked; however, he made for the project a lot of progress that would not have been achieved had it not been for his practicality and drive."

Fickes returned to the Missoula Regional Office, where he completed his Forest Service career. In June 1944, he was offered a promotion to a job with the Treasury procurement organization with a substantial increase in salary that he could not turn down. He retired from Government service on June 30, 1947.

Notes

1. Excerpts from Clyde P. Fickes, Forest Ranger Emeritus, *Recollections*, 1972.

William Irving "Tim" Turner

Forest Service Architect (1933–1951)

William Irving Turner, called "Tim," was born in Oregon in 1890 and attended junior high school and high school in Portland. His training in architecture began in the architectural firm of David C. Lewis in Portland, where he worked from August 1912 to July 1916. Turner was also studying during that time in Portland in a "Beaux Arts Atelier" in design. This school was a design studio affiliated with the Society of Beaux Arts Architects that offered Oregon's first formal classes for would-be architects. From May 1917 until May 1919, Turner spent 2 years in the military, stationed in Belgium. After the war, Turner returned to Portland and worked for D.L. Williams, a firm specializing in industrial buildings, and DeYoung and Roald, a firm specializing in church and school design, from January 1922 until March 1925.

In 1925, Turner moved to Los Angeles to work for Schultze & Weaver and supervised the architectural work for the major structures (banks, clubs, hotels, and office buildings) that the firm was building. In 1928, Turner returned to the Northwest and worked for Victor W. Voorhies, an architectural firm in Seattle. One of the major structures designed by Voorhies that Turner worked on was the Vance Building in Seattle in 1929. Turner's next move was to Phoenix, Arizona, where he spent 2 years, from September 1931 until August 1933, as the field representative for E. Heitschmidt, a Los Angeles architectural firm, directing construction work on the Arizona Biltmore Hotel, a million-dollar project of William Wrigley's, designed by Albert Chase McArthur and built by the Arizona Biltmore Corporation.

Turner returned to Oregon in the fall of 1933 because of the Depression's devastating effect on the architectural and building trades. He spent a month working for the U.S. Bureau of Public Roads in Portland as an assistant engineer. He accepted his first temporary appointment as "foreman" (architect) with the Forest Service on December 24, 1933. His services were needed in the Regional Office, for a period not to exceed 3 months, to assist in the construction of a new Forest Service warehouse in Portland.[1]

In 1934, Regional Engineer Jim Frankland set up an architectural section headed by Tim Turner. This unit developed standard plans for offices, warehouses, guard stations, shops, residences, and other buildings in a distinctive "Cascadian" architectural style for construction by CCC workforces. Turner supervised 8 to 10 architects and draftsmen.[2]

Turner provided leadership to the Architectural Section during the full CCC period and through World War II. Turner died in 1950. One of his most notable designs is the Timberline Lodge (see the section on Timberline Lodge in Chapter 2).

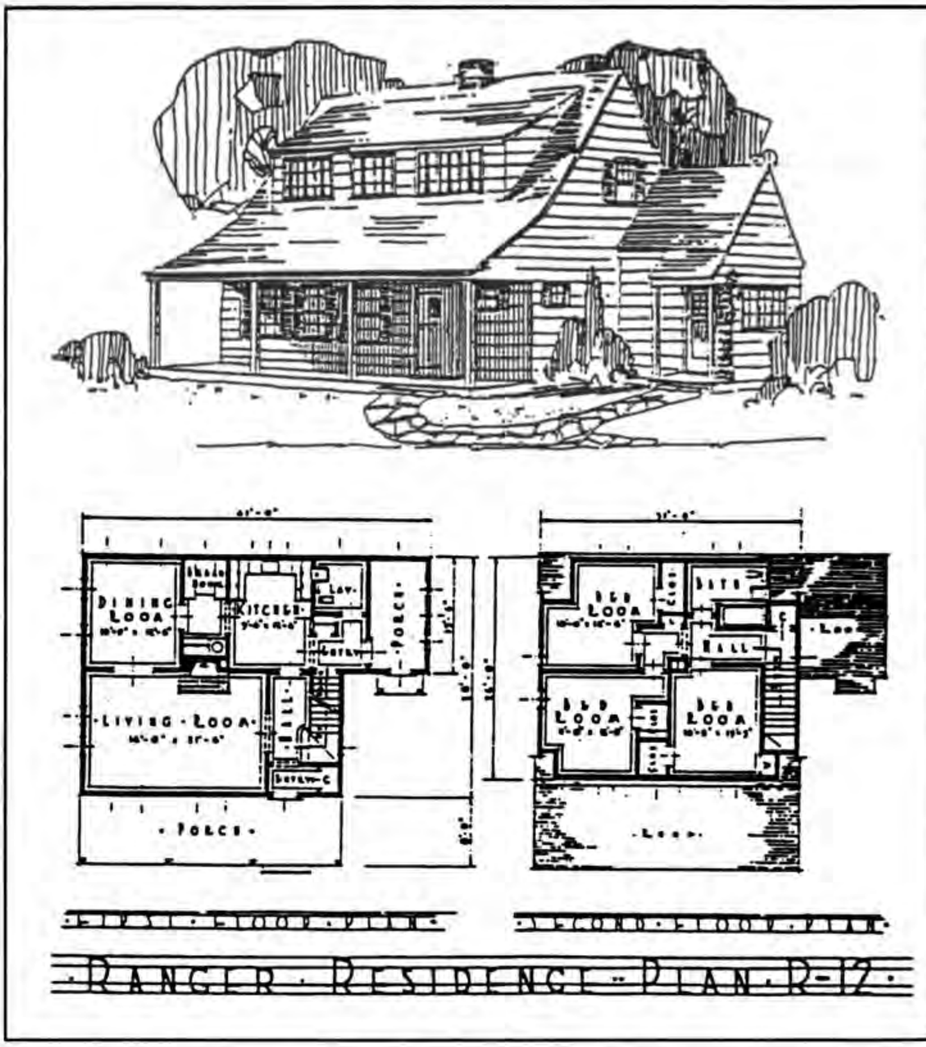


Figure 3–7. *Residence building designed by Tim Turner*

Notes

1. Wood, *Mount Hood's Timberline Lodge: An Introduction to Its Architects and Architecture*, pp. 16-19.
2. USDA Forest Service, *History of Engineering*, p. 500.

Linn Argile Forrest

Regional Architect, Region 10 (1934–1952)

Linn Forrest was born on August 8, 1905, in Bucyrus, Ohio. He attended Franklin High School in Portland and the University of Oregon. Although he did not complete his degree, his major subject was architecture. In addition to attending school, Forrest supervised construction of the First Baptist Church of Eugene and worked for F. Mason White, architect.

After leaving the University of Oregon in 1927, Forrest worked as chief draftsman for architect Hugh Thompson in Bend, Oregon, until 1928, when he enrolled at the Massachusetts Institute of Technology (MIT) to study architectural and structural design. His decision to attend MIT was perhaps influenced by the example of Ellis F. Lawrence, founder and dean of the School of Architecture at the University of Oregon, a desire for an analytical study of the past as the best guide to the future, and for training in the French academic tradition, including Beaux Arts design methods, a training received by Lawrence and by three of Portland's most influential architects: Ion Lewis, William M. Whidden, and Morris H. Whitehouse, all MIT graduates.

After his return to Portland, Forrest worked as architectural draftsman with architect Roi L. Morin until 1929. The types of work there included commercial buildings, residences, theaters, and schools; design of furniture suites, ornamental bronzes, and cast stone; and planning the proposed layout for Morningside Hospital.

Forrest entered the firm of Whitehouse, Stanton & Church in 1929 and was responsible for all phases of architectural work: preliminary sketches, perspective scale, and full-size drawings and supervision in the shops and on the job. The types of work included schools, hospitals, large residences, a U.S. Federal Courthouse building, and commercial buildings.

The quality of Forrest's work must have been thought exceptional among members of the architectural community, for on June 23, 1931, he was awarded the first Ion Lewis Traveling Fellowship. Ion Lewis, FAIA, retired architect of Portland, who with his partner, the late William H. Whidden, was responsible for much of the best work in Portland during the 40 years of their practice as a firm, established the grant in 1930. Forrest was one of three candidates for the award, which was open to Oregon architects between 20 and 30 years of age who were graduates of schools of architecture or had at least 6 years of architectural experience. It was to be an annual award by the University of Oregon, with the Dean of the School of Architecture and two members of the Oregon Chapter of the American Institute of Architects as trustees.

After spending a year traveling in Europe, Forrest returned to Portland in June 1932 at the depth of the Depression. He was eager to share his observations on the periods of architecture he had studied and planned an exhibition of his sketches.

In light of the reality of the economic situation, he noted, "We did anything in those days just to survive" and found work on a relief project for the city of Portland. It was there he met Tim Turner and worked with him in compiling data on underground services in downtown Portland. They also were in charge of a group collecting data and making measured drawings preparatory to redesigning several blocks of buildings facing on a proposed waterfront esplanade. It was during this period that Forrest obtained his Oregon State architect's license.

In June 1934, Forrest was working with the War Department's Bonneville Dam project as a draftsman. He left the Bonneville Dam project in February to take a position with the Forest Service.

In his first Forest Service position, he compiled a handbook of acceptable building designs for Region-wide use. He also designed recreation facilities such as ski resorts, bathing facilities, and related structures.[1]

When Tim Turner, Gif Gifford, and he were assigned to work on the Timberline Lodge project, Forrest was the youngest member. Although the three of them were given a very small space to work in, they discussed things pro and con without argument and worked very well together. Forrest developed floor plans and elevations, including the general layout of the headhouse. Working drawings of the plans and elevations of the lodge were signed "L.A.F." (see figure 2–103 on page 125).[2]

Turner left the office to be the field representative during the construction of the lodge. Gifford and Forrest were left in Portland to design other buildings for the CCC program (figure 3–8 shows one example). Until the CCC program was disbanded in 1942, many administration and recreation buildings were designed and constructed.

In 1946, Forrest was transferred to Alaska to become Regional Architect and to develop buildings similar to but smaller than those in Region 6. The Forest Service work was not challenging architecturally, so Forrest left the agency in the late 1940's.[3] In 1952, he opened a private office in Juneau, Alaska. In 1960, his firm, which then included his son, Linn, Jr., was selected to design the visitor center for the Mendenhall Glacier, just outside of Juneau (see figure 2–108 on page 132), and the restroom facility for the Portage Glacier, just outside of Anchorage on the Chugach National Forest.

A.P. DiBenedetto sponsored Forrest's election to the College of Fellows of the American Institute of Architects in 1979 for his design work on Timberline Lodge and the Mendenhall Glacier Visitor Center. Forrest died in June 1987 at the age of 81.

Notes

1. Ann Wood, pp. 19-24.
2. Ibid., pp. 47-48.
3. Dick Forrest, "A Tribute to my Father, Linn Argile Forrest," p. 3.

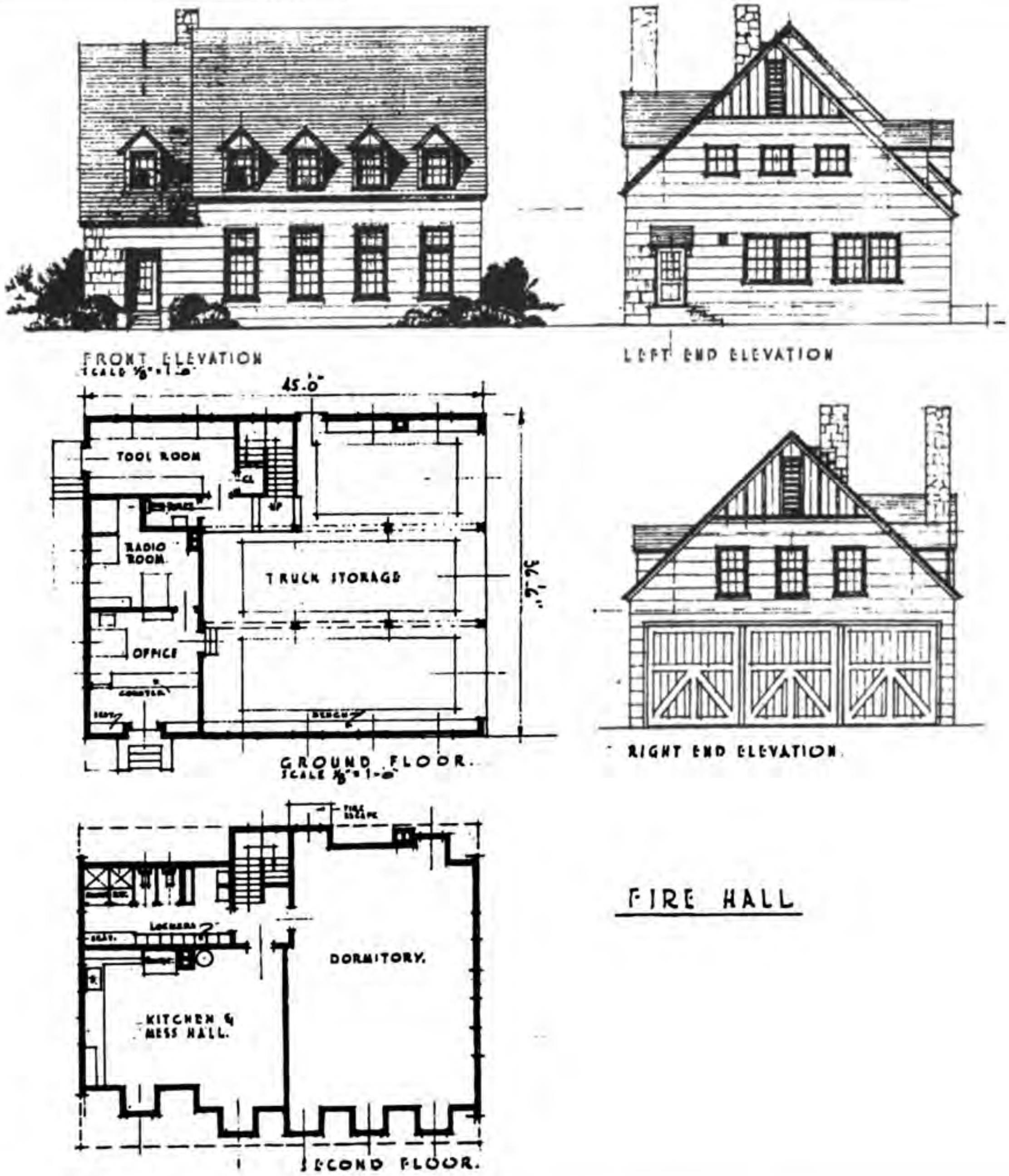


Figure 3-8. *Firehouse designed by Linn Forrest, Region 6 (1942)*

Keplar B. Johnson

Regional Architect Region 5 (1937–1962)

Keplar Johnson was born and raised in northern California. After high school, he attended the University of California at Berkeley, majoring in architecture. He was a classmate of William Wurster and Julia Morgan, and he admired and respected the work of both. After graduation, he worked in various small architectural offices in San Francisco. In 1937, times were extremely hard for private architects and Johnson applied for a newly established Forest Service position in San Francisco. He started working in the Engineering Department located in the Ferry Building at the foot of Market Street. He was a registered architect in the State of California.

Johnson took over the legacy left by the private architects Blanchard and Maher. They had produced many designs for all types of buildings to be constructed by the CCC program in California. The program was still in full swing when Johnson started, and his main tasks were to modify these designs for specific sites throughout California. As the workload increased, he hired two architectural draftsmen to assist in the production work. R.M. Williams and Arthur G. Longfellow both were young graduate architects who also did some design work as well as most of the drafting of the buildings Keplar designed. Art Longfellow moved on to Region 2 in Denver, Colorado, where he produced several designs.

Between 1937 and 1942, the San Francisco design office produced many modifications to the Blanchard and Maher designs as well as new designs for site-specific buildings. One unique design for a supervisor's office in Nevada City had an Art Deco feeling (figure 3–9). Other designs of the period included adobe buildings for a research station just north of Fresno and office and laboratory buildings with a New England character at the Institute of Forest Genetics in Placerville. The CCC program started to decline in 1940 as the war in Europe escalated, and by 1942 no more new construction projects were begun.

In early 1942, Jim Byrne, the Forest Service Regional Engineer in San Francisco, was called by Major Evan Kelley, then Regional Forester in Region 1, to be the head engineer for the guayule rubber project (see page 44). The project headquarters was set up in Salinas, California. Clyde Fickes, Regional Architect from Region 1, was the head of the construction team. Keplar was one of four Forest Service architects called to assist the project in providing the buildings needed for this important war effort. The war in the Pacific ended in August 1945, and the guayule project was abandoned later in that year.

When Johnson returned to San Francisco, he found he had a new supervisor. William Minaker, the Forest Service bridge engineer, had been promoted to Assistant Regional Engineer. Johnson returned to an empty office in the Ferry Building. There were very few construction dollars. His

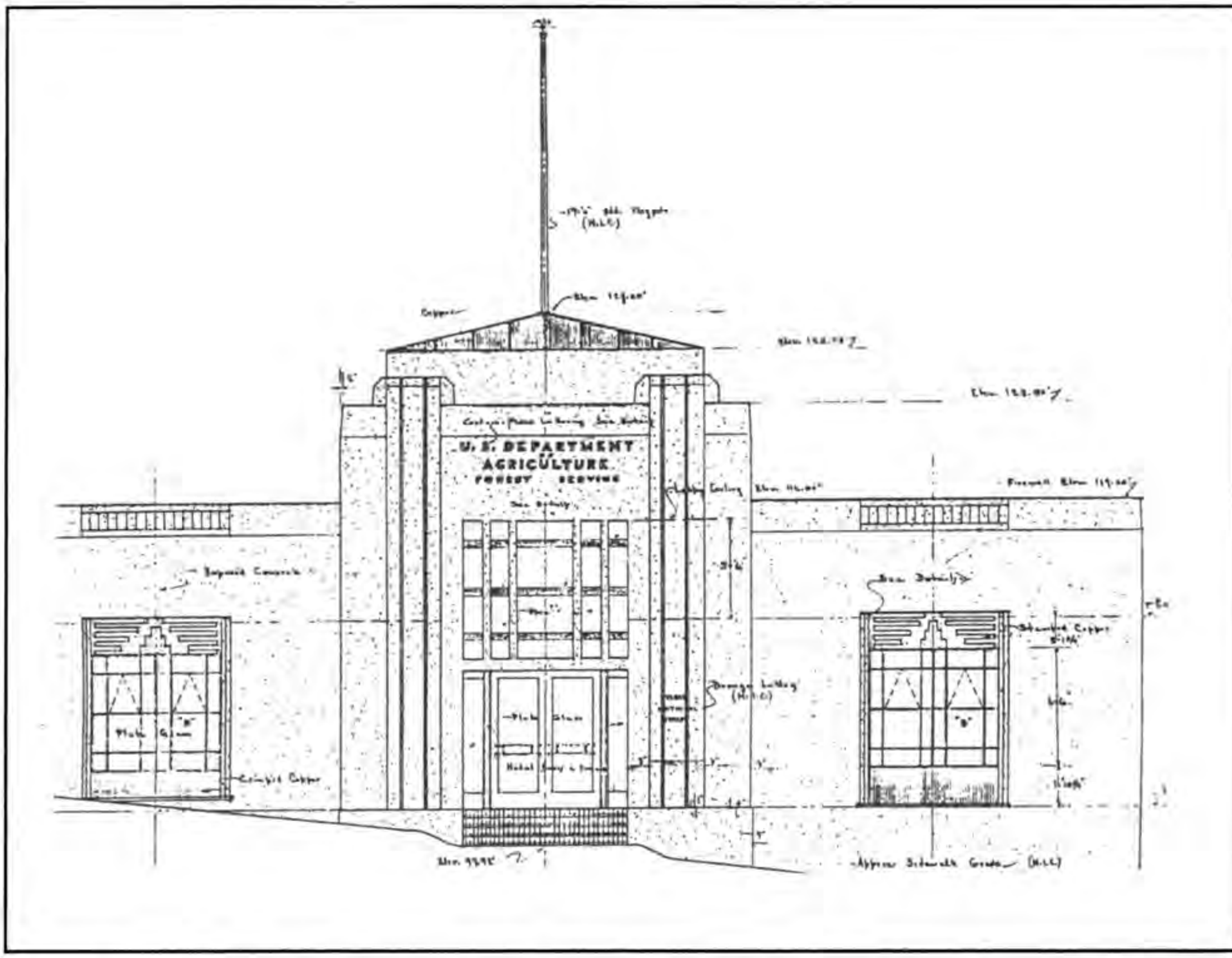


Figure 3-9. *Design for Tahoe National Forest Supervisor's Office, Region 5 (c. 1937–42)*

draftsmen had left before the war, and the major emphasis was on reopening buildings and stations that had been closed by the war and maintenance of the buildings that had not had much care during that period. It was not until the early 1950's that things started to change.

Just prior to the attack at Pearl Harbor, the Government had started construction of a new Federal Building near the financial district in San Francisco. Because of the war, all activity ceased and the steel skeleton had stood rusting in the weather. After the war ended, the building was completed and the Forest Service Regional Office was to move there in mid-1946. Johnson was given the task to lay out the space for the employees. He hired a draftsperson, Lydia Thurnburg, to assist. Between them, they interviewed the employees and worked with GSA to prepare for the five-block move.

In early 1950, two new programs came to the California Region. First, the Army Corps of Engineers began to build new reservoirs in central and southern California. Second, a watershed protection and restoration program in the Los Angeles Basin and the Santa Barbara area provided dollars to the Forest Service to build new fire stations. Special funding was also allocated for construction of employee dwellings, barracks, dormitories, and mess halls. The staff of two was no longer able to keep up with the workload. Johnson hired another draftsperson, Beatrice Hadsell, and eventually two young architectural students, Joe Lazaro and Douglas Rodgers. Johnson, being the only registered architect in the office, oversaw all of the design work.

Johnson's designs started taking on a new character because of the southern California semi-desert environment. He started using concrete blocks, flat roofs with large overhangs, and metal windows. These new designs contrasted greatly with the Blanchard and Meher California Ranch theme and his own early 1940 experiments. One reason for the change was economic: there was a dollar limit on buildings set by Congress in a reaction to some Department of Defense construction projects after the war.

Perhaps the most notable of Johnson's work was the design for the new supervisor's office for the Tahoe National Forest, which was completed in November 1945 but never constructed (figure 3–9). In any case, Johnson's designs for the Region's buildings in the period from 1940 to 1960 showed a much greater range in terms of style and material than those of the 1930's. This is in part a result of Johnson being charged primarily with designing site-specific structures as opposed to the mass-produced buildings of the 1930's. It may also be seen as a reflection of the dramatic change in postwar American architecture.

By the middle 1950's, Congress started appropriating funds for new construction over and above the two special programs mentioned above. New buildings were needed on the northern California forests for both management of the land—with a particular emphasis on timber production and harvest for the residential construction of the postwar period—and for recreation use. Johnson realized that he needed additional professional assistance in design and field construction engineering. He advertised for a graduate architect, interviewed several, and selected Harry Kevich as his second in command in 1958.

After Kevich's arrival, Johnson took on two tasks as his personal duties. He did all of the structural design for the buildings designed in the office. As the only registered architect in the office, he checked and signed each drawing. Webb Kennedy had followed Jim Byrne as Regional Engineer and was providing leadership to the Region as it entered a new era of engineering activities.

The Regional Office was growing, and there was not enough space in the new Federal Building on Sansome Street for all the employees. The architectural and bridge sections moved to an office on Market Street. This translated to more space planning for Johnson and constant travel to Sansome Street for meetings. Two more employees joined the architectural staff: Bill Peterson came as a student trainee and John Grosvenor replaced Lydia Thurnburg as a draftsperson. As the timber program increased, so did the need for new buildings, both offices and barracks, as well as many new recreation structures.

Another new project that came up was a new fire air attack base in Redding, California. Two of the major structures, an auto shop and fire cache, were given to a private architectural-engineering firm in Redding. All of the other buildings were to be designed in house. Johnson took charge of moving a large surplus airplane hangar from Hanford, California, to the Redding site. He and Joe Lazaro traveled south to look at and measure the building. The local forest engineering office in Redding worked on the master site plan. Other buildings that were designed for the project included barracks, a messhall, and family residences. This project took most of the office's time for 6 months to complete the architectural contract drawings.

With the conclusion of these new major designs, Johnson started thinking about retiring. He left the Forest Service in 1962.

Arthur F. Anderson
Harry W. Coughlan

Regional Architects, Region 1 (c.1931–1935 and 1956–1978)

by Arthur F. Anderson

I was born in western Montana. Growing up, I came to realize that this was exactly where I wanted to live—in the mountains with their lakes, rivers, forests, and all the creatures sharing that environment. To earn money for college, I found work on summer fire crews. One fire camp operated from a former CCC camp near the Northern Region (Region 1) Remount Depot. In 1941, I started architectural engineering studies at Montana State University in Bozeman. Then World War II erupted. I qualified for a Navy officer training program that took me to the University of Michigan. That program allowed students to continue their education along with Navy training. Following a brief tour with the Navy, I was able to return to Michigan, getting my bachelor's degree in 1949.

Degree in hand, I began working for an architectural firm in my hometown of Kalispell, Montana. With my wife, I began trekking around the State as onsite representative for the firm. The work was on schools, elementary through college. Structures included steel, reinforced concrete, brick, tile, wood frame, and laminated wood. Water systems, plumbing, waste disposal, heating systems, intercoms, and electrical work were all parts of each project. Here I learned about contract construction: drawings, specifications, getting bids, making awards of contracts, and dealing with primary and sub-contractors to get work done in accord with bidding documents.

Projects took me from one Montana town to another until we landed in Missoula. Here I ran a branch office for the Kalispell firm along with overseeing their work for the University of Montana. By this time we had two children with another on the way and were thinking of finding a way to stay put for a while. In the spring of 1956 I passed the exams to become a licensed architect in Montana. Missoula looked good. I became acquainted with other architects and engineers around town, including Harry Coughlan, architect for Region 1. Going into the winter of 1956, it appeared we might have to close the Missoula branch office. Harry had an opening for a GS-9 architect. I decided to apply for that position and see what might happen. Just before Christmas, I learned the Region 1 job was mine if I wanted it. So began my Forest Service career with a really fine gentleman, Harry Coughlan, as my boss.

Harry Coughlan was born in St. Joseph, Missouri, in 1905—the same year the Forest Service became an agency with the U.S. Department of Agriculture. Somehow he found his way to the Northwest, went to schools in Idaho, and got a degree in architecture from the University of Idaho in 1929. In the Depression year of 1931, Harry got a job with the Forest Service, got married, and moved to Missoula—though not necessarily in that order.

About the time I began working with Harry Coughlan, there were some 100 or more new recruits coming on board for various jobs on ranger districts, at supervisors' offices, and in the Regional Office. We even had a new lawyer for the Office of the General Counsel and a few Research people. We all attended an orientation session at the Missoula Aerial Fire Depot (the smokejumper center), which had been designed by Region 1 architects and engineers, completed in 1954, and dedicated by President Eisenhower before a crowd of some 30,000 people. Here we learned who was running what in the Forest Service generally and in Region 1 particularly. We learned what was expected of us and who would be our coworkers and clients. Opportunities, needs, money sources (and problems), and other restrictions were brought up. Longlasting friendships began. If I had to look for a negative aspect of this initial meeting, it would be learning that construction contracts were not administered by the designing architects and engineers but by contracting officers who seemed to have a wide variety of backgrounds and concepts of their authority.

Further orientation to the work of Forest Service architects and engineers came from Service-wide meetings. The Forest Products Laboratory in Madison hosted one of these sessions. We learned to use the Lab to get information on the characteristics and proper usage of wood and many other materials. Buckminster Fuller, seer of the future and creator of geodesic domes, talked to us at one Service-wide meeting. Another speaker asked a thought-provoking question: "Is there a substitute for imitation wood?"

Harry Coughlan did a great job of exposing me to the history and tradition of the Forest Service and the Northern Region. There is a log cabin at Alta on the Bitterroot National Forest that was built in 1899 by H.C. Tuttle and Than Wilkerson (see figure 1–1 on page 3). It is now on the National Register of Historic Places as the first U.S. forest ranger station. This station was built for the forest reserves; the Forest Service took over in 1905.

Region 1 has a rich legacy from the CCC days, 1933 to around 1942, when hundreds of unemployed young men learned how to build. They built recreation improvements, fences, roads, trails, telephone lines, lookouts, and other buildings—at their own camps and at some ranger stations. They were under Army supervision for pay and sustenance but under other agencies for many of their work assignments. One huge CCC job, instigated by Regional Forester Evan Kelly, a former U.S. Cavalry Officer, was the Remount Depot, where the Forest Service bred, fed, and trained horses and mules for riding and pack stock. The buildings were designed in Cape Cod style (see figures 1–12 and 1–13 on page 16). Fenn Ranger Station, on the Nezperce National Forest in Idaho (see figure 1–27 on page 35) and Phillipsburg Ranger Station, on the Deerlodge National Forest in Montana (see figure 2–44 on page 83) are other examples of CCC construction in Region 1. All of these facilities are on the National Register of Historic Places. Architect Bill Fox and engineer Clyde Fickes designed the buildings and grounds and guided construction. Fickes was the boss. Harry Coughlan worked with them.

During World War II, Fickes and Coughlan worked in California on the guayule rubber project along with many other Forest Service architects and engineers. When the rubber project ended, Fickes left Region 1. Bill Fox went into private architectural practice. Harry Coughlan stayed with Region 1. He joined the circle of Regional Architects that included Keplar Johnson of Region 5 and Nels Orne of Region 9. Their Washington Office direction came mainly from Tony Dean. Tony seemed to know everything that was going on in all of the Regions and Research Stations all of the time—a most competent, levelheaded, fatherly but no-nonsense engineer.

The "custodial" period for the Forest Service ended as people recovered from World War II and literally swarmed into their woods for recreation and jobs; making use of the resources. We quickly developed "standard" designs for every kind of building needed by district rangers to keep up with pressure from forest users. We had office-warehouses, garage-shops, barracks, cookhouses, lookouts, outhouses, and several kinds of dwellings. Seldom did a "standard" plan fit a given situation without modification. We tried to keep everybody happy and largely succeeded.

One thing that particularly tested our ingenuity was trying to meet limitations placed on dwelling size and cost by the Appropriations Committee of the U.S. House of Representatives. We couldn't exceed 1,200 square feet nor the year's assigned cost limit, guidelines probably reasonable for typical urban situations where there were skilled builders and it wasn't a 2- to 4-hour trip from a ready-mix concrete plant to the building site. Legislative limitations often forced us to do things like leave out basements and scrimp on residents' storage and dining space, which made life tough for housekeepers in the backwoods.

Harry and I needed help and we got some good people from colleges and the private sector. Some of our projects involved contracting with private architects and engineers. We helped Research with their nurseries, research centers, and a fire laboratory. We helped Information and Education with visitor and interpretive centers. We designed restrooms, pumphouses, and related items for recreation sites. We got into design and analysis of fallout shelters. We did Job Corps Centers. In one instance we got a standard plan for a Job Corps Center gym. It was a bit light in the roof snow load design for our Region and we told the Chief's Office our problem. We got back the terse advice: "Do not make modifications; have the enrollees shovel the snow if it gets too deep."

Speaking of shovels, the primary summer and fall job for nearly every able body in Region 1 was fire—on one or at a staging area where firefighters passed from one fire to another. Given the short building season in the Northern Region, this complicated getting building projects designed and built in many tough fire years.

Two of our Job Corps Centers were housed in buildings we remodeled at radar bases no longer in use. For another one, we contracted for design and installation of prefabricated structures, which were hauled to the site in the same manner as house trailers and then linked together. Sometime after this center closed, we learned that most of the structures had been moved to a summer work center way out in the boondocks, where they were eventually flattened by heavy snow during the off-season.

Prefabricated structures and house trailers often provided quick and easy solutions to building needs. They could be acquired with year-end money and without need for a design. They were obtained as personal property so they didn't appear on fire, administrative, and other building inventories. These kinds of improvements often showed up only when we were called on to help design shelters or storage structures to make up for their deficiencies.

The Bureau of Reclamation made some of their buildings and sites available to other agencies as dams were finished. We in Region 1 could hardly afford to turn them down and so began a parade of mostly dwellings over the highways and backwoods tracks of the Region. At Hungry Horse Dam on the Flathead National Forest, a district took over the whole spread from the Bureau. In another case, administrators of a forest decided to move an office building from a dam site to a remote work center. The building had to be cut into sections for moving. One of the pieces went into a Wild and Scenic River as the mover came around a tight corner in the road. Very quickly a lot of folks got together about the situation. It was some time before the whole office got to the work center. Here again, we often didn't have enough funds to afford basements. However, later on, possibly justified as fallout shelters or by other logic, a few basements were added. Someone remarked, "Well, that way we sure found out where the basement had to go."

With passage of the Wilderness Act in 1964, the Forest Service launched a determined effort to acquire private land and remove all structures from established wilderness areas. This required owners of such properties to come to the bargaining table. I had attended a 2-week session on real estate appraisal in 1963. That course led me to a most interesting and sort of poignant assignment: determining the value of improvements at a wilderness ranch on a national forest. The ranch was originally homesteaded from 1911 to 1947. In 1947 it began to be used mainly for recreation. A landing strip was built. A diversion dam on a nearby stream provided hydraulic power for a generator. A sawmill was installed. Soon there were guest facilities for quite a sizeable party. Up to 1961, improvements were still being added. An appraiser from Recreation and Lands and I headed for the ranch in December 1965. My job was to assign a value to the buildings and related improvements, his was to nail down what the land was worth. We were flown in to a remote Forest Service ranger station landing field. Here we loaded up with food and other gear for a few days' stay at the ranch. We hiked a few miles to the site. The owners were just leaving and showed us around. Hunting season was over, but fortunately the winter had not yet set in on that neck of the woods. As we went about our work and did necessary chores for our meals and night's comfort, we were deeply impressed with the tranquility of the place. We watched elk feed on the hillside off a hundred yards or so. It was a privilege to be there, but it was a place that only a few very wealthy people would be able to visit and enjoy as it existed. Eventually, the Forest Service did acquire that ranch and I suppose it has reverted to a wilderness character, albeit somewhat less than pristine. In other cases, the Forest Service has not succeeded in ousting landowners from wilderness sites, but the efforts go on.

While Harry and I managed to recruit graduate architects, we ran into a brick wall when these fellows tried to qualify for architectural registration. The National Council of Architectural Registration Boards (NCARB) refused to credit more than 2 years of work for any Government agency toward the required 3 years of work under licensed architects practicing as principal of a business. Both Harry and I were licensed and so were some others working with us. Our Regional Engineer, Max Peterson (later Chief of the Forest Service), challenged the NCARB head office about it—to no avail. Some of our college recruits left to work with private firms. Somehow, Bob LeCain was an exception and got his license while working for us. It is my opinion that the usage of contracting officers by Government agencies lends support to the hard-nosed NCARB position. Contracting officers take on much of the interaction with contractors normally recognized as a legal responsibility under private architects and engineers. Thus that part of architectural practice would be unfamiliar ground to one who left a Government agency to become a private practitioner.

Specifications for construction projects were another part of our work that we tried to standardize. I joined the Construction Specifications Institute. We found their format very helpful. We sent copies to the Washington Office, but there was no immediate response. At a Service-wide meeting of architects and contracting people, I brought copies of the format for each Region, and comments were mostly positive. Eventually, the Washington Office got into gear, and standardized formats were adopted in 1967. I think a Washington Office administrator got an award for getting this done.

Harry Coughlan retired in the fall of 1965. He did some outstanding watercolor painting after retiring. Most of these grace walls in homes of his immediate family, but there are also a few in the square dance halls where Harry and his wife Doris spent many hours. Harry died in 1982 at the age of 77.

I replaced Harry Coughlan in 1966. I retired in 1978. Before I retired, I took business management courses at the University of Montana. After several years of part-time classes, I earned a master's degree in business administration (MBA). That really didn't impress any of my coworkers too much, nor did it lead to higher pay. But it gave me a good perspective of management. It didn't take much insight to see how a lean and effective outfit could drift into a condition where it was top-heavy in executives and ineffective in operation. Corporations and agencies alike seemed to go that way from 1960 to 1990. Then along came downsizing, where both good and bad things have happened.

The Forest Service began the Roadless Area Review and Evaluation process, called RARE, in the 1970's. It is still going on, due to lack of final congressional action needed to put it to rest. In 1972 and 1973, I was detailed to the regional task force on RARE. At first we spent a lot of time getting map data from forests as they located, defined, and refined areas that fit the roadless criteria. During this period we helped whoever wanted it to have access to RARE information at whatever time was convenient to them. For many people, RARE involved a lot of overtime and stressful activity. It was a good experience for me, rubbing shoulders with foresters, ecologists, and wildlife specialists as well as politicians and environmentalists. I got a fresh appreciation for our national wilderness heritage.

From the Forest Service, my wife and I embarked on a 2-year tour with the Peace Corps. Our assignment was to an island in the Caribbean. Paradise, right? Well, if Paradise includes living through overthrow of the Government for a few months, OK. But hurricanes? One each year like the island had not had for 50 years? During the first one I watched in awe as 4- x 32-inch pieces of glass in a jalousie-type window bowed in nearly 3 inches from wind pressure before snapping. Then the roof blew off over our heads in one flying piece. Luckily, we weren't hurt, but we sure got drenched before we got to other shelter. Both years the banana crop was ruined, so there went the economy. Instead of working to maintain and improve the island's school facilities, my original task, I ended up assisting a very competent Caribbean engineering firm in the design of buildings to replace some that had been wiped out by the hurricanes. The Peace Corps was a fine experience. We learned more than we taught and got more than we gave.

Now here I am, exactly where I always wanted to live—in the mountains with their lakes, rivers, and forests and all the creatures sharing that environment. Lately, more of the creatures are human.

A.P. "Benny" DiBenedetto, FAIA

Regional Architect, Region 6 (1951–1961)
Station Architect, Pacific Northwest (1961–1979)
Washington Office Research Architect (1977–1979)

I was born in Portland, Oregon, in 1922. I attended school in Portland, at Benson Polytechnic High School, where I majored in architecture and building construction, graduating in 1940. In the fall of 1940, I accepted a scholarship to the University of Oregon's School of Architecture. [DiBenedetto's father, Jack, who emigrated from Italy in 1906, was a stone mason hired to work at Timberline Lodge. His father taught his son the craft before sending him off to college to learn architecture.] During the summers of 1941 and 1942, I worked as an architectural draftsman for the Corps of Engineers, working on Army and Air Force bases in the Northwest.

In early 1943, I joined the Navy and served in the South Pacific and Middle East. After the war, I returned to the University of Oregon to complete my degree in architecture in 1947. Upon completing my college degree, I returned to the Corps of Engineers, working on fish hatcheries and the powerhouse and observation building on the Detroit Dam.

In early December 1950, I was interviewed by Mr. Frankland, Regional Engineer, and Tim Turner, Regional Architect, to assist Mr. Turner in the design of new ranger stations at Detroit, Oregon, and Lowell, Oregon. I was to start work in February 1951. Two weeks after our interview, Mr. Turner had a heart attack and passed away. Jim Frankland called me on January 3, 1951, and asked if I could come to work in 2 weeks. I said I could because I was just finishing up the observation building at the Detroit Dam.

From February 1951 to 1961, I worked with the following architects: Bill Hummel, Dick Parker, Ken Grimes, Doug Parmenter, and Norm Krause. We designed and built new ranger stations at Detroit and Lowell, Oregon, and ski chalets at Mt. Baker and Mt. Bachelor, Oregon; and we did the first restoration of Timberline Lodge in 1955. Later, Joe Mastrandrea, Perry Carter, Ken Reynolds, Terry Young, and Tom Morland joined our staff. In 1958, we continued doing administration facilities; nursery buildings at Wind River, Bend, and Medford, Oregon; and the first Olympia Laboratory.

In the summer of 1951, Ellis Groben came to Region 6 for a week to visit and review his design philosophy for the Forest Service. He was impressed with the Northwest Cascadian style of architecture that was started by Tim Turner, Linn Forrest, Dean Wright, and Howard Gifford on Timberline Lodge and numerous CCC facilities in the Washington and Oregon area. I recall one day when Groben and I were walking in town, he would cross a street diagonally without looking and with no sense of auto traffic, causing automobiles to honk their horns frantically. I found him to be a little eccentric.

In 1961, I transferred to the Pacific Northwest Experiment Station as the Station Architect and architect of record for the design and construction of research laboratories at Corvallis, Oregon (1962); the second Olympia Lab (1964); Wenachee, Washington (1965); Roseburg, Oregon (1966); and La Grande, Oregon (1970).

Our architectural staff designed research facilities at Rhinelander, Wisconsin; Duluth, Minnesota; Fresno, California; St. Paul, Minnesota; Moscow, Idaho; and Botteneau, North Dakota. The Forestry Sciences Laboratory in Corvallis, Oregon, was designed in three phases: the first in 1962, the second in 1968, and the third in 1973. In order to design research facilities nationwide, I had to maintain architectural registration in Oregon, Washington, California, Idaho, Montana, Wisconsin, Minnesota, North Dakota, and Iowa.

Our design team received awards for laboratories at Corvallis and Bend, Oregon, and the laboratory of the year award for the Range and Wildlife Laboratory in La Grande, Oregon, in 1973 (below). In 1973, I was elected to be president for the Oregon Council of Architects; in 1974 I was elected as Director of the Pacific and Northwest Region of the American Institute of Architects (AIA) and served on the National Board of AIA. I served in this capacity until 1977. In 1978, I was elected to the College of Fellows for the design of the research laboratories and service to the Institute.

From 1977 to 1979, I served as dual Station Architect and Washington Office Architect for Research. After I retired in 1979, I was asked to be a consultant on the restoration of the Auditor's Building (originally built in 1869) for the Forest Service national headquarters and for a proposed new laboratory for Hawaii, which I did from 1987 to 1989 as a Forest Service volunteer.

The staff architects doing research facilities nationwide were Dick Lundy, Fred Wagoner, Tom Morland, Si Stanich, Dale Farr, Albert Biggerstaff, Bill Headley, Mari Ellingston, Dan Wrigle, Alton Hooten, Bill Hohnstein,

Figure 3-10. *Range and Wildlife Habitat Laboratory, LaGrande, Oregon—1973 Industrial Research Laboratory of the Year design award winner*

Mike Madias, and Joe Mastrandrea, who have since gone into private practice or retired.

Since retiring from the Forest Service in 1979, I have maintained an active practice in architecture, doing visitor centers and housing and historical restoration at Crater Lake National Park, Nezperce National Monument, and Fort Clatsop. With our firm of DiBenedetto/Thompson, we have designed a campus complex for Soloflex in Hillsboro, Oregon. In 1985, we did a large Bio-Tech Laboratory for Pioneer Hi-Bred in Johnston, Iowa, and Portland, Oregon. We have been deeply involved in restoration of Catholic churches at Mt. Angel, Oregon, the first Catholic church in the Northwest Territory, built in 1846, and a 14-unit housing complex for retired clergy.

My career as an architect for the Forest Service was very fruitful and rewarding. The group of architects working with me came from many schools of architecture and appreciated the opportunity to be designing structures in the natural environment. In two instances I was asked to move to Washington, DC, as Forest Service Architect. That is the reason I transferred to Research and subsequently it became a dual assignment in my later career with my office in Portland.

[In a 1989 article in the *Daily Journal of Commerce*, DiBenedetto was described as the "Italian Godfather," a mentor to many top Oregon architects. This nickname was bestowed on him by numerous young architects he had trained over the past 40 years. Benny always had a clever comment and positive criticism; "An architect could not be a better godfather," said Portland architect Dale Farr. DiBenedetto directed many of his students at the Forest Service office, designing ranger stations and research labs. More recent apprentices have been trained in his Portland private practice. "I still enjoy having young people around," explained DiBenedetto during a recent interview. "It gives me a lift as to what changes the design profession is going through. I still haven't been able to absorb post-modernism," he said.]

I am indebted to Tony Dean and Jim Bryne, Chiefs of Engineering; Dr. George Jamison, Chief of Research; Directors Robert Cowlin, Phil Briegleb, Robert Harris, Robert Callaham, Robert Buchman, and Robert Tarrant; and Administrators Charles Petersen, Jim Sowder, and Sam Kessler for the opportunity to design research facilities to fulfill the needs of the Forest Service's research nationwide.

—"Benny" DiBenedetto (1997)

William Turner

Regional Architect, Region 4 (1956–1981)

I was born in Provo, Utah, in 1918. I spent my summers in Heber City, Utah, with my grandparents, where I learned to work and take responsibility and also got acquainted with rural life.

During my senior year at Provo High School, I was busy for a few days deciding what vocation to pursue. I was torn between forestry and engineering. I loved the mountains and outdoors so much that I thought about forestry, but finally decided on civil engineering because of my great love for math and science and building work. I studied 2 years at Brigham Young University in Provo, but then had to transfer to Utah University because that was all they offered in engineering then. I finished my studies and graduated with a B.E. in civil engineering in 1941.

After graduation, I was hired by Columbia Steel and sent to work in Torrance, California, just south of Los Angeles and later transferred to Provo. When the new Geneva Steel Works opened, I went to work for them and stayed until they closed the plant at the end of the war in 1945. I then went to work for the Bureau of Reclamation in Grand Junction, Colorado. I had heard about Colorado's mountains and fishing and wanted a taste of them myself. After 11 months, I was transferred back to Spanish Forks, Utah.

I left the Bureau of Reclamation and went to work for the city of Provo, helping to build a large addition to the city powerplant. Next, I worked for a combined lumber yard, cabinet shop, ready-mix concrete, and home building company in Pleasant Grove, Utah. When the need for new housing lessened, I went to work at the Army Desert Chemical Depot southwest of Toole, Utah, and stayed for about 3 years. That was a good all-around engineering job.

When that job finished, I went to work at Hill Field, just outside Ogden. After 2 years, I learned that the Forest Service employed engineers. I inquired at the Regional Office Division of Engineering, but they didn't have anything to offer at that time. Nearly a year later, I went back again and took a set of house plans that I had prepared. I was told that the regional architectural engineer was retiring and was asked if I would like that job. I readily accepted it, even though it meant a reduction in grade and pay.

I just thoroughly enjoyed my work. The Forest Service is a good outfit; there is such a good feeling among the employees, almost like a family—as it was often called. This combined my two interests: forestry and engineering. I got outdoors in beautiful country. George Nichols, my predecessor, had left before I was hired, although I did consult with him quite often. He surely produced a lot of plans for many different kinds of buildings which were built during his tenure.

I started the job there in July 1956. The architectural staff at that time was Cal Spaun. He was a splendid and talented architectural draftsman. He had worked for a prominent local architect named McClenahan, who designed the Regional Office in Ogden as well as the City and County Building and the high school. I remember that Ogden High School had been built during the 1930's at a cost of approximately $1 million. It was unimaginable back then for anything to cost a million dollars.

When I started, the Division of Operations controlled the building program money and therefore the building program, so I was somewhat under the supervision of Tom Van Meter and his assistant Tom Matthews. Van, as he was called, was very talented. He liked to be in the middle of everything and often liked to stir up a fuss. There was never a dull moment when Van was around.

When I started, we were way behind and I had to work evenings and weekends to catch up. Tom Matthews was in charge and informed me that in addition to plans and specs for a new dwelling, they wanted a complete list of materials—the contract would be for labor only, the Forest Service would furnish the materials. That caused a lot of discussion, but he was insistent, so I went ahead with it—a big job to determine all the lumber, nails, plumbing, heating, electrical, and other supplies to construct the dwelling. However, just before I finished it, he informed me that they wouldn't need it; they would let the contract for labor and materials after all. Thank goodness!

We were constructing mostly dwellings when I started. We had some garages and some campground latrines. We did have a few office buildings. During the mid-1960's, we received quite a bit of money with fiscal year deadlines from Congress for the accelerated public works program, and we had so much work that we let some of our architectural work out to private firms, mainly to revise some of our plans to better fit the sites where they were to be built. I remember making an inspection on the Bear River Office, up in the mountains, while it was under construction. The building was almost completely framed; I got to looking at it and realized something was wrong. The roof structure was not strong enough for the local conditions. The designers had not taken that into account, and we had not caught it during our brief review of the plans. We had to get busy and make changes in order to strengthen the roof.

Another thing that comes to mind. We have a lot of summer homes in the Region. One time a couple of the permittees out of Logan, Utah, had purchased summer home plans from a private firm and the Forest Service had turned them down for construction because the designs were not strong enough for the area. The national sales manager for the company called me to find out what the problem was. I told them that the design for the snow load was too light. He said, "They are designed for 50 pounds!" I said that is about the minimum we use, design another for 100 pounds, and another for 150 pounds, and sell the one they need. He said, "Oh no, that would cost more money and be hard to sell."

We sent him a letter explaining the Forest Service policy: we review the plans to see that they are both aesthetically right and physically strong enough for the particular site; that we use snow and water content records compiled by the Soil Conservation Service to determine the snow load requirement for a particular site; that 100 and 150 pounds are common for our Region. We then listed the Soil Conservation Service records that covered our Region. That didn't phase him. He even came to visit me and brought another dealer from Logan. He wanted blanket approval to build their 50-pound buildings anywhere. He even went to the Washington Office to see if he could convince them. We sent the Washington Office a copy of the letter we had sent him and said, "He knows our requirements, but seems to be interested in nothing but the sale price." We never heard any more about it.

One special building I remember was the visitor center at Redfish Lake on the Sawtooth National Forest in Idaho (figure 3-11). A helper at that time was Darwin Hamilton, who was quite artistic; he came up with the basic looks of the building and I did the structural design. That is a beautiful site and we built this great building there. It was very enjoyable. Soil Conservation Service records showed that 70 pounds should suffice. However, because of the much heavier snow loads close by, I did not want to take a chance and designed it for 100 pounds. I was fond of heavy shake shingles and put them on the roof. The pitch of the roof is borderline, and we eventually put sheet metal on the overhang edges to control the ice dams.

One of the struggles I had earlier in my career was dealing with the Division of Operations. They were very strict with the building budget and did not want any "frills" on the buildings. For example, we could not put trim around porch posts, adjustable shelves in utility closets, wood shakes on

Figure 3-11. *Redfish Lake Visitor Center, Region 4, central Idaho (1964)*

roofs, or stone on the exterior of buildings. It took me a while to get them to understand that these items would improve the buildings and last longer. The Pleasant Grove District Office on the Uinta National Forest (figure 3–12) was one example of an office designed after convincing the building committee that adding a little to the offices was wise.

I also enjoyed designing some of the other offices. My favorite design is that of the Ketcham (Sun Valley) District Office on the Sawtooth National Forest. It was designed to appear as if coming up from a rock outcrop just in front of it.

I remember some interesting experiences, such as going up to Big Piney, Wyoming, to see about remodeling the heating system in the District Ranger Office. The ranger there told me that he had seen it 60 degrees below during his stay there. Another time there was a Boy Scouts of America lodge that was to be built under a special use permit on the Caribou National Forest near the Palisades Dam on the Snake River. I had reviewed the plans and approved them, including the roof trusses that were to be built using "split rings." While inspecting some buildings we were having constructed in the vicinity, the Forest Supervisor asked me to take a look at the Scout building. It was all framed and enclosed. When I inquired about the split rings, the builders seemed puzzled. Further inquiries disclosed that they didn't know what split rings were, and had inserted flat washers in the truss joints instead of the split rings. We had to get busy and strengthen the roof to prevent its collapse.

Figure 3–12. *Pleasant Grove District Office, Uinta National Forest, Region 4 (1963)*

We planned and built quite a few diversified buildings: warehouses, a nursery building complex near Utah State University in Logan, and a tree nursery complex at the Lucky Peak site near Boise, Idaho. Two special buildings were required there. One was a tree cold storage building where trees would be stored after being taken from the ground in early spring for sorting and packaging. The building was to be designed for a temperature of 34 degrees Fahrenheit and 100 percent humidity! We hit it pretty close. A second was a seed cold storage building, which was to be designed for zero degrees Fahrenheit year round. After it was built, I was there in August. The temperature outside was over 100, and inside it was minus 8 degrees—quite a difference. Another interesting building is the Stanley Ranger District Office on the Sawtooth National Forest, not far from the Redfish Lake Visitor Center. It is a rustic, early-day type of building with a covered front porch and a main entryway and reception room, with a wing to be built on each side of it. The south wing was designed and built originally; the north wing has not been built.

I had two very fine helpers during my tenure: Al Saunders, who had considerable experience drawing Forest Service maps, and Wilden Moffett, a graduate architect, who is my successor as the Regional Architect.

I would like to be remembered as a good friend and a helper of the Forest Service. I came to do a job and enjoyed the work and the people. It's good to see the results of my efforts. I think this is a great outfit—one of the best!

—Excerpts from interview done by John Grosvenor in May 1998.

Harry Kevich

Regional Architect, Region 5 (1958–1985)

I was born in San Francisco in 1926. I attended public school in the City; after graduation, I was drafted into the Army and served for 2 years (during the Second World War). After I was discharged and returned to San Francisco, I was accepted at Stanford University, which I attended for 4 years. After receiving my bachelor's degree in architecture, I went to Harvard Graduate School of Design.

I then worked for private industry for 3 years. I terminated with the firm to attend the World's Fair in Brussels, Belgium, in 1958. I came back to the Bay Area without a job. I had just purchased a lot at Squaw Valley, where I planned to construct a wood cabin to be used by me for the 1960 Winter Olympics and needed some timber design experience (my work experience in private industry had been mostly in steel and concrete). As I was driving back down old Highway 40, I saw the Big Bend Ranger Station of the Forest Service and wondered if they had a design department.

The next day I phoned the Regional Headquarters in San Francisco and spoke to the Personnel Department. I asked if they had an architectural staff to design their buildings and if they ever had job openings. Their answer was yes and that there was an opening at present. I was given the Regional Architect's name and phone number. The very next day I went into the office on Sansome Street to have an interview with Keplar Johnson. We spoke for about 2 hours, going over the scope of the work in the office and my qualifications. Kep offered me the job then and there; I accepted, and that started my Forest Service career. I never thought it would last 27 years.

In thinking about my career during the years I was Keplar Johnson's assistant, working with the forest personnel was a good experience. But, after Kep retired and I became Regional Architect, the best times started. I realized I was getting a lot of support from the forest supervisors and engineers. They were aware we were capable of doing the projects and they were anxious to receive this product. By the same token our work increased with the demands, which was very gratifying. This allowed us to increase our staff and gave us the opportunity to select what I think were very talented people. And it created a stimulating environment for all of us in which to produce exciting architecture in the Region. And in the same way this was also reflected in the field, with a lot of encouragement and support from the forest personnel with their interaction in the design of buildings—which was challenging and called upon our creative energies to do the best architecture possible.

The bad times were the years when Charlie Connaughton was Regional Forester; he posed a great many restrictions, as I remember. For instance, he insisted we provide asbestos siding on buildings, which we now know has a dangerous history, rather than forest products, which were our preference. It was at this level that we didn't get sufficient support.

After Charlie Connaughton's departure, new management gave us support and recognition (specifically Jack Deinema and Doug Leisz), and this was super for our efforts. It was at this time that we started to get some national recognition of our capabilities and began performing work beyond our Region because we had the talent and capabilities to do it. We started to train young architects from other Regions where there were no mentors.

There was the time when Jim Byrne, Director of Engineering in the Washington Office, offered me the position of Chief Architect in the Washington Office. I remember having a long conversation with Max Peterson, Region 5 Regional Engineer, regarding taking the position. I did give it considerable thought, but I wrote a negative response to Jim and thanked him very much. I did feel that as a professional, I did not know of a principal in any architectural organization, be it private or Government, where the head architect was separated from a functional office, which would have been the case had I gone back to Washington. Professionally, as an architect, I do not think it would have helped the organization to be so separated. It would have been a managerial position with serious restrictions. Maintaining direct interaction with other architects and keeping abreast of trends in the profession can only be done in a functioning office.

The California office did a lot of work nationally for the Forest Service, especially for those Regions that did not have an architectural staff. It was very flattering. I remember being on the commission doing the study of the Cradle of Forestry in North Carolina; that was a very interesting project and there was an excellent group of people to work with.

I also remember when we were working with the Bureau of Reclamation on the Job Corps replacement buildings. There were two phases: one, the design of the center buildings and the other, the panelized buildings to be built by the corpsmen. The interesting thing was that of the group who worked with the Bureau people on proposals for the center buildings; each of the groups developed a different system. Naturally we each felt our concepts were the best for the intended use. We had come to an impasse because each staff felt so strongly about their solution. The head of the Bureau called a meeting in Denver in his office; both sides presented their ideas and he selected the Forest Service proposal of the pole-type structures (figures 2–9 and 2–10 on pages 63 and 64), which we felt would be most adaptable to varying sites and topographies throughout the country. After the decision, the two groups worked well together to complete the plans. I don't know how the buildings have stood up over the years, but there was no problem adapting them in the Southeast, Midwest, and Northwest. The buildings went up with so few problems (figures 3–13 and 3–14) that [the architects were given Certificates of Merit by Chief Ed Cliff for their work (figure 3–15)].

The Environmental Management Conference, which was held in San Diego in 1971, was very gratifying. There was an opportunity to select the kind of people, other than Forest Service, from the private sector and general public to invite to a meeting of this sort. [Maynard Munger, Sierra Club

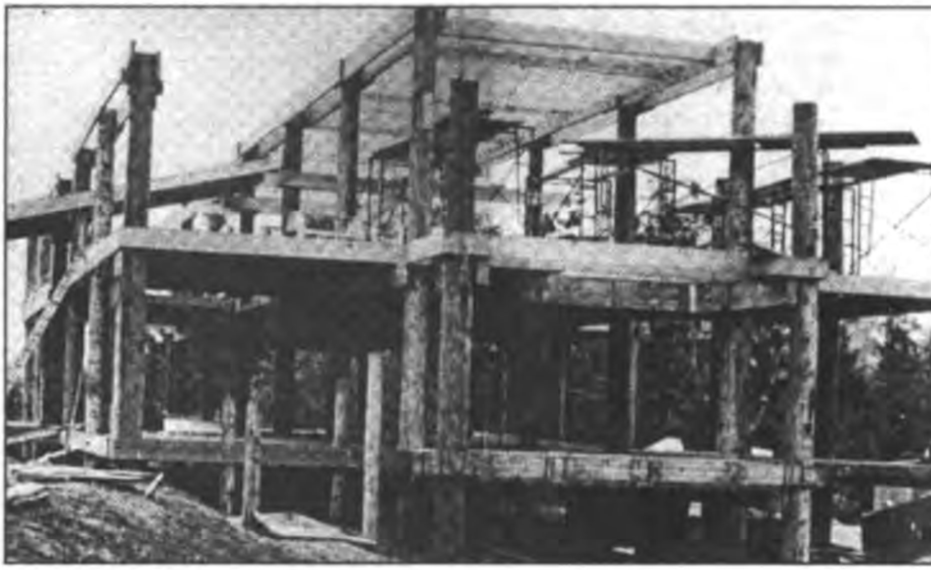


Figure 3–13. *Job Corps pole building (framing)*

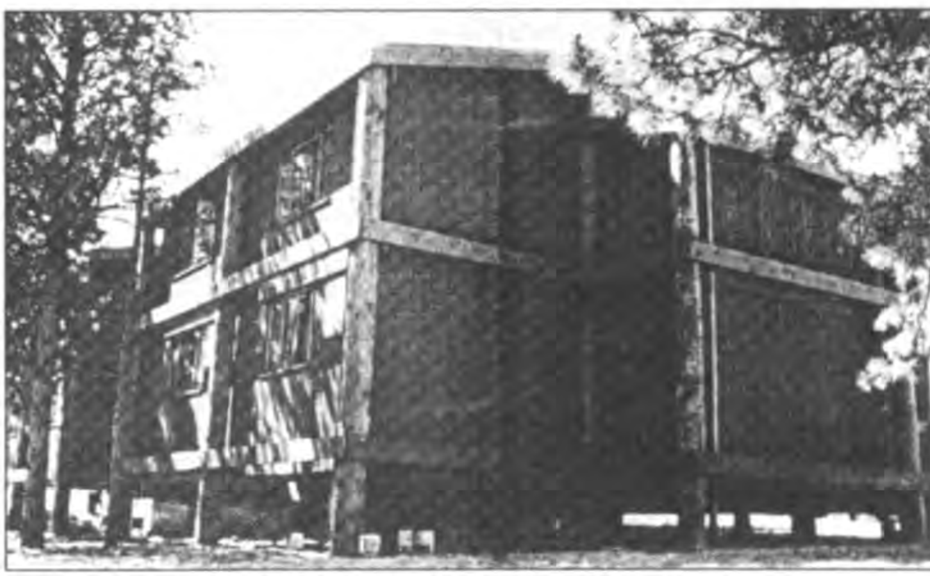


Figure 3–14. *Job Corps pole building (completed)*

Director; Clifford Humphrey, Ecology Action Director; John Callahan, California Forest Protective Association; Ted Osmundson, American Society of Landscape Architects; Professor William Linvill, Chairman of the Engineering Economics Systems Department, Stanford University; and Claude Brown, attorney and guest professor at University of California at Santa Barbara were speakers at the session.] These persons had different views on how to treat the environment and having them address each other was very stimulating. I guess this all stemmed from the Management Behavior confrontational session led by Paul Madden down in Asilomar, "telling it as

Figure 3-15. *Region 5 architectural staff receiving certificates of merit from the Chief of the Forest Service for their work in developing the design concepts for Job Corps programs at Civilian Conservation Centers throughout the United States, December 1969 (left to right: Bill Bruner, John Grosvenor, Bob Sandusky, Dick Modee, Roy Ettinger, Regional Architect Harry Kevich, and Deputy Regional Forester Charles Yates.*

it is" to the many Forest Service attendees, almost 90 from California. The mission of the Forest Service has changed radically since that time; cutting timber and building roads are no longer number one.

Newcomers to the agency who were exposed to this type of thinking in school were quite different from the forest managers we started working with. I really admired this "old guard;" I may have disagreed with some of their positions, but I admired their integrity. In their own way they were very adept in performing their mission in the organization as they saw it.

Their ability to carry out their mission was better because they had all the tools available with minimal opposition. In regard to architecture, I think we were able, in our own way, to gain their support, and then accomplish things with little or no resistance. We ended up getting along with them and I think they respected us. I think in general that with the different areas of professionalism within the organization, real professionals will respect other professionals if they are competent in what they are doing.

In 1982, I was asked by the Washington Office Engineering Staff to develop a guide for Forest Service office design, identification, and location (figure 3-16). This was quite a challenge. I started by talking to architects in other Regions and interviewing public affairs officers. The very first fact I discovered was that there were many, many poor examples of Forest Service image. The new keyword for the agency was "host." In the preface to the booklet published, I state:

> The guide discusses the basic design schemes for Forest Service offices, and illustrates how the scheme can serve as a valuable framework for a variety of office design solutions. General guidelines for the location of Forest Service leased facilities are also discussed. Finally, the guide is a useful tool to help you evaluate your present office, and provides a step-by-step process to formulate and implement an effective plan to improve your office.

The Guide was published in 1983 and was still in use the last time I spoke to the architectural staff in San Francisco. This was the second attempt to establish a design ethic for the agency. Ellis Groben's "Acceptable Building Plans" was long forgotten by this time.

I would like to be remembered for having the opportunity to bring into the organization the type of people I was able to hire (table 2). In recognizing their capabilities, giving them the freedom to use their talents and not stifling their creativity, I was able to assist and mentor them by promoting these projects within the organization. The capabilities enhanced during the time these people were with us were very significant. During their careers with the Forest Service, their services were recognized and requested by the different organizations. I promoted this type of activity and delegated these responsibilities. I am very proud of the accomplishments of these individuals. These young architects won a considerable number of

Figure 3–16. *Cover for a guide to basic design schemes for Forest Service offices*

Table 3–1. Architects Who Worked for Harry Kevich

Name	School	Present Status
Bill Bruner	Stanford University	Private firm in San Francisco area
Jim Calvery	University of California	Retired Regional Architect, Region 9
Don Crichlow	University of Florida	Retired Forest Service Architect, Region 8
Roy Ettinger	Syracuse University	Private firm in Portland, Oregon, area
John Grosvenor	University of California	Retired Regional Architect, Region 5
Dave Hall	California Polytechnic Institute, San Luis Obispo	Head Architect, U.S. Coast Guard, Juneau, Alaska
Keith Lee	University of California	Forest Service Architect, Region 5
Dick Modee	Rhode Island School of Design	Retired Land Management Planner, Angeles National Forest
Harold Nelson	PhD, University of California	Director of Whole Systems Design Graduate Program, Anitoch University, Seattle, Washington
Bill Peterson	University of California	Private firm in San Francisco area
Bob Sandusky	University of Colorado	Retired Regional Architect, Region 5
Bill Speer	University of Florida	Present Regional Architect, Region 8
Bill Wells	University of California	Architect, California Department of Transportation
Ron Wylie	California Polytechnic Institute, San Luis Obispo	Private practice in San Diego area

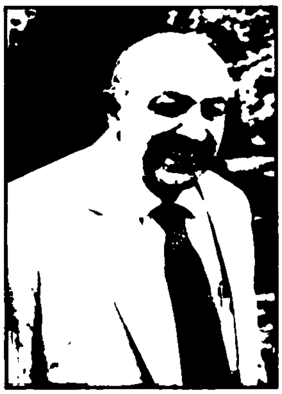
awards. The work was not undertaken merely for recognition, as I felt that this is what we were hired to do. I was called to speak for the Forest Service at the Forest Products Conference in New Orleans based on the work of my staff.

In looking back at my 27 plus years with the Forest Service, I think it was the correct decision. I was a little dubious of Government service because of the image of bureaucrats. Over and above the architecture, it was the wonderful people, particularly the field personnel, who were the reason I stayed with the agency. It was very gratifying to perform for them; they were so appreciative of the designs. They were totally devoted to their jobs; they weren't bureaucrats, they were really doing something. It was a great experience during the "golden age" of architecture in the Forest Service to work with talented and stimulating people.

—Excerpts from interview by John Grosvenor in October 1996.

Joseph J. Mastrandrea

Architect, Region 6 (1958–1983)
Regional Architect (1983–1995)



I was born in Portland, Oregon, in 1922 and lived there until I was 13. At that time I went to California, where I completed my secondary education and attended Los Angeles City College for a year.

The Second World War had begun and I started working at the Lockheed Aircraft plant. I worked on numerous models of aircraft, such as the Hudson, Ventura, B-17 "Flying Fortress," and P-38. Since I was in an essential industry, I received a deferment from the military. I was finally allowed to volunteer into the Army Air Force when Lockheed inadvertently allowed my deferment to expire. I was inducted before they could reinstate my deferment.

I passed the tests for flight officer training and entered the Army. During basic training in Amarillo, Texas, I took the Air Force psychomotor tests for air crew training and qualified for pilot training. My officer training began in Springfield, Missouri, during my college training detachment. Next I went to Williams Air Force Base, near Chandler, Arizona. Our flight group was sent there due to a backlog of flight officers. Two of the three preflight schools were closing down, and all of the cadets were required to go through one school in San Antonio, Texas. We were trained as mechanics until our time came to go through preflight school. After 15 months on the flight line, I flew training flights as flight engineer on the B-24 and B-17 "Flying Fortress" bombers. I was then transferred to Amarillo Air Force Base back in Texas. The war was winding down and we were given the choice of continued training as B-29 flight engineers or honorable discharges. I chose the latter and was discharged on October 31, 1945.

I returned to work at Lockheed Aircraft, where I worked on commercial airliners, and entered Los Angeles State College to pursue my architectural degree.

Early in 1948, I returned to Portland, where I worked as an architectural draftsman at the architectural firm of Annand and Kennedy and at the Portland School District. In the fall of 1948, I entered the University of Oregon's College of Architecture and Allied Arts and majored in architectural design. In the summer of 1950, I worked for the Wolf Phillips firm (which is now ZGF). I married Shirley Ritchey later that summer; we had met while working at the Portland School District. We had three sons, Jeff, Steven, and Mark, between 1953 and 1958.

After I graduated in 1953, I remained in Eugene, Oregon, long enough to complete the designs for a new housing project. I worked for an architect for a few months, but the projects played out and the economy was down, so I returned to Portland.

I worked for the architectural firm of Dougan, Heims and Thompson and an architect who owned the Universal Plan Service, where I designed custom homes, two-story apartments, high-rise apartments, and commercial buildings. I also drew perspective drawings and wrote a descriptive column on one of the standard plans each week for a major local newspaper. I also worked for Church, Nuberry and Rohr and Logan and Murtaugh, designing school buildings. While employed at Jim Bates, Architect, I worked on fire stations, an athletic club, historic building remodels, and custom residences. During this time, my friend Benny DiBenedetto called and asked me to work for the Forest Service. I began working for the Forest Service in August 1958.

Those in the architectural profession knew about downsizing long before the present use which has become popular with organizations. It was due to the economy, which ebbed and flowed. The practice with architectural firms was that when projects dwindled, the firms would downsize. Most of the time they would network and try to find a place for you. Of course, they weren't always successful and you would have to beat the streets and find your own job. Many times you might have a moonlighting project of your own to fill in between jobs.

[Joe passed away before he was able to finish this document. The following portion was added by Jo Ann Simpson, his friend and coworker.]

In the Forest Service, Joe found steady employment and challenging work as an architect. During the 1960's, the economy was good and the agency needed recreational facilities. It was at this time that he designed the Cape Perpetua Visitor Center on the central Oregon coast (see figure 3–18 and

Figure 3–17. *Region 6 Architects Gathering (1990) (Left to right: Alan Mitchell, Joe Mastrandrea, Judy Winfrey, Jim Wilson, Jo Ann Simpson, Steve Winfrey)*

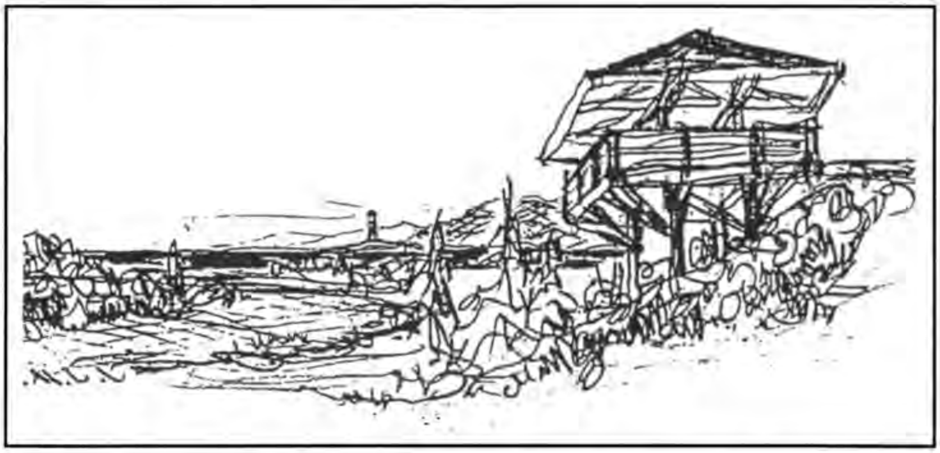


Figure 3–18. *Mastrandrea's quick sketch of an observation shelter at Cape Perpetua (1974)*

figures 2–123 and 2–124 on page 142). This was an award-winning design featuring a wall of glass and a 10-foot promenade. Joe also designed many new office buildings in the 1960's throughout Washington and Oregon. These offices were at Paisley, Quilcene, Gold Beach, Alsea, Lake Wenatchee, Naches, Rigdon, Powers, Sweet Home, Chemult, and many more.

In 1970, the Forest Service needed nurseries to manage the reforestation effort and Job Corps Centers for the youth programs. Joe designed the office, residence, and storage buildings at Wind River Nursery and worked on the design team for the Medford Nursery. He designed buildings at all four of the Job Corps Centers in Region 6: Angell, Wolf Creek, Curlew, and Timberlake. The most notable was the Timberlake messhall, where hundreds of students received culinary training.

Tree coolers (refrigerated buildings for storage of tree seedlings prior to spring planting) and office additions were the major design focus in the 1980's. Most of the tree coolers in the Region (Washington and Oregon) were designed by Joe. The agency was expanding and needed office space, so Joe provided additions to Sullivan Lake, Newport, Hebo, Waldport, Tiller, Unity, Barlow, Tonasket, Quilcene, Quinalt, Applegate, Detroit, and McKenzie.

Joe was detailed to PNW for 3 to 4 months to assist Benny DiBenedetto on the Olympia Laboratory. He became Regional Architect in 1983.

The 1990's were a time of downsizing for the Forest Service, of closing down facilities and agency consolidation. Joe retired on January 5, 1995. Joe was an international handball champion. In November 1997, he had a major heart attack while playing handball and died shortly thereafter. He enjoyed a rich life and a challenging career.

Bob LeCain

Regional Architect, Region 1 (1958–1985)

After 2 years of education in mechanical engineering, serving in the Army, and working as a carpenter, I went back to the University of Idaho and graduated with a Bachelor of Architecture degree in 1958. I was interviewed and offered a job with the Forest Service in Region 1 in Missoula, Montana. I had passed through Missoula several times, but was not familiar with the town. I thought it would probably be an acceptable place to live for a few years, but have now been here for almost 40 years.

The economy in 1958 was somewhat slow. I believe I was the only one of my graduating class of around 12 who had a firm job offer at graduation, so I was happy to accept. My goal at that time was to work for a few years, obtain my architectural license, and go into private practice. One reason I had taken up architecture originally was that it seemed like there were good opportunities to be your own boss, which was my goal. I got around to taking and passing my licensing exam in 1965. By then, my family had grown and I had found that there were advantages to working for the Forest Service: steady employment and fairly regular working hours as opposed to the feast or famine of many private architects, and work that was mostly interesting. I had my share of designing vault toilets, et cetera; however, there was also work on visitor centers and major buildings at Job Corps centers (such as gymnasiums), along with the developments at ranger stations and work centers.

Over the years, I found many people who assumed that an architect with the Forest Service either was a landscape architect or designed toilets and lookouts. I did both of those things, but they were minor. I also enjoyed visiting ranger stations and work centers in beautiful areas of Montana and Idaho and trips for meetings, training, and details from Alaska to South Carolina and California to Pennsylvania.

When I reported for work at the Federal Building in Missoula, Harry Coughlan was the Regional Architect, and had been the only architect from after World War II until the mid 1950's, when Art Anderson was hired. Art Anderson was Harry's righthand man, and George Tuxbury was an engineering draftsman working mostly in architecture but not exclusively.

My first job was to draw reverse-reading plans for a residence, which in these days of CADD systems seems like a waste of time; however, it was frequently done at that time.

Shortly after my employment, George Kirkham was hired, George Tuxbury became a fulltime architectural draftsman, and with direction from Art Anderson and with Harry Coughlan primarily taking care of administrative work, we started cranking out a lot of construction documents, drawings, and specifications. Our direction at that time was to use "standard plans" for FA&O construction, which did allow us to complete a lot of contract documents for new ranger stations and improvements at existing stations. However, the "standard plans" sometimes did not fit the real needs at a site, particularly for administrative buildings. In future years, more latitude was given for site-specific designs. George Kirkham and I developed the drawings for the first phase of construction at the Coeur d'Alene Nursery. Later on, Art Ulvestad was primarily responsible for additional development. Art was also primarily responsible for the Quake Lake and Aerial Fire Depot visitor centers.

Over the next few years, as our workload increased with projects like those above and the National Forest Fire Laboratory; laboratories at the University of Montana, University of Idaho, and Montana State University; and increased FA&O construction dollars, additional staff was hired. The laboratory designs were performed by consultants; however, that of course also required in-house work.

During the early 1960's, because of the work noted above, we grew and had 14 people assigned to our group, possibly not all at the same time but almost. Rod MacDonald and Harold Zornig were primarily field inspectors and not usually in our office. However, they were assigned to the architectural group. There were seven architects—Harry Coughlan, Art Anderson, George Kirkham, Art Ulvestad, Duane Houchins, Jerry Meyers, Neal Sands, and me; three engineers—Rod MacDonald, Harold Zornig, and Rich Walker; two draftsmen—George Tuxbury and Dave Anderson; and a secretary, three different women during the time we had our own secretary.

Figure 3–19. *Sula Ranger Station Barracks, Bitterroot National Forest, Region 1 (1974)*

Following this extremely busy period, our staff shrunk during the late 1960's and early 1970's through transfers, retirements, and resignations to Art Anderson as Regional Architect, Art Ulvestad, George Tuxbury, Dave Anderson, and me, and later Glenn Hacker, an architect-engineer who transferred to architecture after working in other areas of the Division of Engineering and after working for private architectural firms for many years. These people were the architectural group for several years. Later on, after the retirement of Art Anderson and Art Ulvestad, Lou Archambault, who had been in private practice, and Lee Deeds, part-time architect and smokejumper, joined us.

In the summer of 1967, I was detailed to Region 9 to work with Jim Calvery on development of revised preliminary drawings and then the construction drawings and specifications for the Watersmeet Visitor Center in upper Michigan. I did not have time during the summer to complete the project and had to return in the fall to get my kids back in school, so I completed it in Missoula. On returning to Missoula, I found no one in the office and none of the work I had left for others to do completed. Region 1 had experienced one of its biggest fire seasons in years, and everybody was involved in them.

As the FA&O construction dollars began to slow down, Job Corps came into being, which became a big workload. In Region 1, at a maximum we had five centers, and others were considered. Two were constructed with drawings developed by Region 6 (Trapper Creek and Anaconda), one was constructed with portable trailer units (Cedar Flat), and two were at remodeled former Air Force radar sites (Cottonwood and Curlew). All of these, except Trapper

Figure 3-20. *Powell Ranger Station Office, Clearwater National Forest, Region 1 (1975)*

Creek and Anaconda, were closed after a relatively short time. However, the two continued to be a big workload for the architects because of their internal and external construction programs. One of my interesting projects for Job Corps was designing some picnic pavilions at Sheepshead Campground, between Butte and Great Falls. The Anaconda Job Corps did an excellent job on both the heavy timber construction and the stonework, the type of construction we see from WPA and CCC projects of the 1930's but only infrequently now because of high labor costs. Another interesting project for Job Corps was a replacement gymnasium for the Anaconda center, as the original Region 6 gym burned down. It appeared to have been arson, but I don't believe it was ever proven. The new gym had, at that time, the largest roof trusses ever designed and manufactured by the Truss-Joist Corporation.

During the 1970's, Art Anderson was assigned to other administrative and planning jobs and I was acting Regional Architect and then assigned to the job.

During the 1970's and 1980's, the direction to use "standard plans" changed as it became obvious that they did not always meet the requirements on the ground—partially, I believe, because ranger station workloads and staffing became more diversified—and more unique and interesting buildings were designed and built.

During this time, along with the ongoing work of FA&O construction, Job Corps, special programs such as Youth Conservation Corps, and assisting forests with maintenance and force account construction, I had the opportunity for other special assignments. In 1980 and again in 1981, I was assigned to a team to assist the Alaska Region in preparing and implementing long-range building programs for ranger stations, et cetera. Later on, I went to Alaska to assist in planning for a new office building at a beautiful site on the waterfront in Ketchikan, which was to house a district office and headquarters for the Misty Fiords National Monument (see figure 2–39 on page 80). I sketched concepts in my motel room and was amazed to find out, after I had retired, that they had built the building quite similar to my sketches, although they did leave out the sawtooth west wall, which I had included to catch the scarce sun in the winter.

Another interesting assignment was being part of a team to visit the former Pinchot estate, Grey Towers, in Milford, Pennsylvania, which houses the Pinchot Institute for Conservation Studies. We were there to assist them in planning for long-term maintenance and further development on the site. I don't know how much our report assisted them; however, I still have pictures of the buildings and grounds on the wall of my home office, as we visited during the peak of the fall color display and the site and buildings were beautiful.

I also visited the Washington Office for various reasons, sometimes on assignments that allowed me to spend weekends seeing the sights in that area. One assignment was for a week's training on a CADD system that was being considered for architectural and engineering use in the Forest Service. This was in 1984, the infancy of CADD systems. The proposed system was sophisticated and could do almost any kind of drafting; however, it was very complex to use and our (the Region 1 engineer and myself) recommendation was to wait until systems that were easier to operate became available, which of course they did with Autocad, et cetera.

In 1984, the Region was encouraging reductions in staff through options for early retirement for those who were interested. As noted, I had originally gone into architecture assuming I would be self employed. This appeared to be that opportunity.

It took a while, but finally it was worked out between Region 1 and Region 9 that Jim Calvery and I would both retire early in 1985. Jim, of course, did go back to work, not, as I remember, as the Regional Architect, but doing what he enjoyed more, architecture. I have since been self employed, doing various kinds of architectural and related work. Some of this work was again working for the Forest Service. After 3 years of retirement, I had several contracts with the Lolo National Forest and also did work for the National Forest Fire Laboratory.

Recently, I have been working closely with the National Forest Service Museum Board to develop preliminary concepts and drawings for a major museum ($12 to $15 million) to be built in Missoula and also have prepared construction drawings for a small, temporary museum to build on the site, just west of the Aerial Fire Depot, as the first phase of that development.

Wes Wilkison

Regional Architect, Region 2 (1959–1981)

I was born in Kansas in 1932 and raised in western Kansas, near a little town called Tribune. This is the flattest place in Kansas. I received my education through high school there. I attended Fort Hays for one semester and then transferred to Garden City Junior College. I then went to Kansas State University for 1 year and into the military for 3 years. I graduated from Kansas State in 1958 with a B.S. in architectural engineering.

After graduation, I worked for an engineering firm in Kansas City, Missouri, doing detail design for road bridges in both concrete and steel. I got tired of doing these small details and decided to move on.

Just prior to graduation, I had talked to a couple of Forest Service recruiters. I was interested in the Forest Service. I got an offer from the Bureau of Reclamation in Denver and went there to talk to them. While I was in Denver, I decided to go talk to the Forest Service also. I was interviewed by Marian Lamb, and he offered me a job. Weighing the two, I selected the Forest Service and started work in July 1959.

I worked for Bill Nelson; he had me as a "do it all" engineer. I inspected dams and lookouts; I worked mostly on the structures side. This finally led me into the architectural work. There had not been an architect in Region 2 since 1942. There was not a lot going on, and what buildings had been built used standard designs from the 1930's.

There was a draftsman doing most of the work, Joe Ottensceinder; he worked for all of the engineering disciplines. We were just coming out of the tent age because when we did a proposal for a small crew house the building committee thought it was gold plated with a toilet inside. Most of the plans used in the Region came from Groben's "Acceptable Plans" book. Most of the larger buildings in the Region after World War II were designed by consultants.

I was also given the skilift inspection duties; I started this in about 1960. I did this personally until Richard Kasel came in from the Rio Grande National Forest when the Job Corps program started around 1966. He was a civil engineer and handled the structures and skilift program.

Dave Faulk had just graduated from Colorado University. His parents knew the Regional Engineer and Dave was hired part time. He became my only professional architectural assistant. When he went to Vietnam I was without professional help again. With the assistance of a landscape architect and a draftsman, we did all the Job Corps work.

I had a lot of good experiences with the Job Corps program, even though it was a big hassle. We had a lot of work in a short period of time, both in setting up the centers and then in fixing many of the cheap materials and workmanship. I enjoyed the Job Corps program; it was an ongoing issue until I retired.

I did enjoy the challenge of moving from the tent era to getting a few decent buildings for the Region. The regional leadership was satisfied with the 1930's standards. We always seemed to have a congressional mandated program like the water pollution abatement program, which gave $6 to $8 million a year to construct modern toilets. I retired when I did because the Forest Service lost its "do it" attitude and moved into a future planning mode. There was not any construction on the ground during this period.

When I started my career with the building program, most of the dollars went to work on the ground. Near the end of my career, that did not seem to be happening at all. I enjoyed my Forest Service career. I feel I made a difference, especially since there had not been a professional architect in the Region since 1942.

One of the first jobs I remember was working on the facilities to replace a small work center that was to be flooded by Dillon Dam. The old buildings were down in the bottom of the floodplain. We had to move the whole thing; the buildings were old and could not be relocated. We built on a new site up on the hillside. Considering the time, constraints, and lack of money, this job came out quite well.

Looking back at buildings I was involved with, I remember the Custer Office on the Black Hills National Forest (see figure 2–24 on page 72) as an especially good project, even though I did not do the final design. I spent many hours in the preplanning phase, working with the forest staff and GSA to get the best possible office. It was nice to see it completed; it turned out to be an extremely good structure.

I was given the task to inspect all of the lookouts in the Region. This was a "hairy" experience with all the wind and lightning. The skilift inspections were similar.

I think the construction of the Job Corps camps, with the time constraints imposed on us, was one of my biggest challenges. We could not even start until they said go; then we had 2 months to have the designs completed. I traveled all over the country looking for manufacturers of mobile facilities; we finally purchased the units for two centers from a company in Vicksburg, Mississippi. The units were very cheaply built; the corpsmen tore these up very soon. The direction from the Department of Labor was very constraining. I enjoyed working on the additions and replacements for these first buildings. I had the lead in the total planning for the Region 2 centers. We went out and found the locations for all the centers; then, working with the civil engineers and landscape architects, we developed the total design for each center (figure 3–21).

When I first started here, we had a building committee composed of the Directors of Recreation and Lands, Engineering, and Operations. Howard Lee, the Director of Operations, was the chairperson of the group. This group was still in the "dark ages" and wondered why we wanted to build

Figure 3–21. *Aspen Barracks, White River National Forest, Region 2 (1980)*

barracks instead of putting crews in tents. Much time was spent on discussing the needs of the employees; I had to explain the architect's point of view. I also had to work with this group on the yearly budget. When I first arrived in Denver, all buildings had to be cream and brown in color. It took me a while to start staining some of the buildings and finally I gained control of the appearance of the various sites.

I was involved in the development of the Mt. Sopras Nursery on the White River National Forest. I also worked on the building at the Bessie Nursery, which was like the State Park of Nebraska. We even had to repair a swimming pool that was constructed in the CCC era because it was such a popular place to go.

During the energy conservation era of the 1970's, we tried to do some of the passive energy-saving designs. We did several things with crew quarters; the crew house we designed in Aspen (above) was to be very energy efficient. That was an interesting design.

I would like to be remembered as the individual who reestablished the Regional Architect's position after 17 years without one. Management was happy to use the plans from Groben's "Acceptable Plans" book. At first the building committee just wanted me to develop a couple of standards for each type of need and the Region would be set forever. I told them that there were no standard sites or needs in the Region, that we should look at each job as a new need.

—Excerpts from interview by John Grosvenor in May 1998

John R. Grosvenor

Architect (1960–1971)
Staff Engineer (1971–1994)
Regional Architect, Region 5 (1994–1998)

I was born in the San Gabriel Valley of Los Angeles, California, in 1935. I attended elementary and high school in the city of Alhambra. When I graduated, I traveled north to Berkeley, California, to attend the University of California and major in architecture. I had decided in junior high school that being an architect was just the right profession for me.

In June 1959, I was about to graduate from the University with a bachelor of arts degree in architecture. Rather than going to my graduation ceremony, I chose to go to San Francisco to interview for a job (I had about $150 in the bank and bills coming in). I had found out about a position with the USDA Forest Service at the Career Center at the University; since there was a slowdown in the economy, very few architectural jobs were available in the private sector.

I rode the red Key train from Berkeley to downtown San Francisco, then walked about six blocks into the financial district to the Appraiser's Building and rode the elevator to the eighth floor. I was greeted by Keplar Johnson, Regional Architect, in an open drafting room where several people were working on drawings at drafting tables. Kep and I talked about my education and background, the Forest Service, and the type of buildings being worked on at that time. I was introduced to Harry Kevich (Johnson's assistant), Joe Lazaro and Doug Rodgers (two young architects), Bea Hadsell (the draftsperson), and Bill Peterson (a student trainee). The office was similar to the private office where I had worked during the previous summer in southern California.

A few days later I received a phone call from the personnel office of the Forest Service, offering me a job as a draftsman in the San Francisco office. I had also received offers from the U.S. Navy and United Airlines, but I liked the Forest Service position better than the other two. I needed a job, so I accepted with the intention of moving on to the private sector as soon as the economy picked up.

Let me tell you a little about my career in the Regional Office of the Pacific Southwest Region, where I have spent my whole professional career. As with most new architects in the San Francisco office, my first project was redesigning a vault toilet building. It became an in-house joke that the initiation of all newly hired architects was the infamous "outhouse" start. The toilet building I had the most enjoyment designing was a combination hot tub, bath, and attendant studio apartment. This building was constructed at Mono Hot Springs on the Sierra National Forest to replace condemned outdoor hot tubs (see figure 2-93 on page 119).

Within 6 months I was reclassified as an architect; even then, bureaucratic red tape took quite a while to correct simple issues. I was assigned to work on a large, complex building: the combination office and warehouse for the new Coffee Creek administrative site on the Shasta-Trinity National Forest.

Keplar's job during this time was checking plans, discussing designs, and brooding about what his career might have been had he not been called to the guayule rubber project (see page 44). He was a chain smoker; he smoked filter-tip cigarettes, and when he tasted the burning filter he lit the next smoke from the previous one. He usually used two matches a day—one in the morning and one after lunch. Many of my early drawings have holes burned in them from ashes dropping off of the ever-present cigarette in Kep's mouth.

I was involved with the design of buildings until the end of 1962, when Johnson retired and Harry Kevich was named as the new Regional Architect. I took over Harry's old job as assistant and started writing specifications and overseeing the construction of buildings. Harry started hiring new architects, as the program of work was expanding; during the next several years, two accelerated public works programs were passed by Congress, and the Job Corps was founded—with five large centers constructed in California. During this period, the number of architects in the San Francisco office expanded until there was a staff of 13. During my time in the design section, I personally designed 30 to 40 buildings and saw over 200 constructed, many of them the same building plan at many sites. The last building was an addition to the Plumas Supervisor's Office in 1964; it was pictured on the cover of the Quincy, California, phone book (see figure 2–25 on page 73).

In the summer of 1964, during inspections at Fallen Leaf Lake and Lake in the Sky Visitors Center, I attended a meeting with Doug Leisz, Eldorado National Forest Supervisor, and Bob Morris, District Interpretive Specialist. Morris had an idea for a fish-viewing chamber for Taylor Creek, the spawning stream for the Kokanee salmon from Lake Tahoe. Morris had read about a scientific research structure in Sweden and a University of California research structure near Lake Tahoe. These provided an area to study fish habits at eye level by looking into a natural stream or pool of water. His vision was for a 6-foot by 10-foot underground room reached by stairs with a 4-foot by 2-foot window looking into the water at eye level. He thought we could build such a structure for about $15,000 to $20,000. We were standing in the shade at the visitor center parking lot. Leisz thought it was a great idea and felt it would enhance the public visitor experience at Lake Tahoe. But he felt the size was too small for the many people that came to Lake Tahoe and visited the center and amphitheater.

As we talked through the idea, I started sketching in the dirt area next to the pavement. Two issues were bothering us: First, the disturbance of the stream and second, the size of the room and the moving of people into the chamber. Doug thought the stairs would be a barrier to moving people smoothly into the viewing room and the small window would slow the process down even further (this was years before accessibility for persons with disabilities). The dirt sketch increased the viewing glass and the size of the chamber as well as added ramps in and out of the structure.

All three of us were excited by the ideas discussed. Doug gave Bob and me the task of writing up a proposal to submit through the Regional Office recreation staff to Washington for funding. Bob was to write the interpretive plan and I was to develop the architectural prospectus. There were also the environmental issues of the stream. Doug said he would work on that with the Supervisor's Office staff. The goal was to have a finished document by the end of the summer (see pages 132 through 135 for more of the story.)

On October 3, 1997, I attended a rededication of the Stream Profile Chamber. The Forest Service and private donors put over $600,000 into the remodeling of this unique building. The windows into the pool were changed from a flat plane to an articulated version, both into the stream and into the room. All new exhibits were designed and installed in the viewing room. The structure was made accessible to persons with disabilities. Finally, the diverted stream and pool were modified to make the viewing of the fish more pleasing.

I became a registered architect in the State of California in 1967; the first since Johnson's departure. This was very important, since every architect we interviewed for a job asked whether the office had one. The apprenticeship program leading to licensing in the State required work under a registered architect for 3 years. Many young architects used me as their mentor for registration.

In 1971, I was selected as the new Staff Engineer for Building Construction, Operation, and Maintenance, a position parallel to Harry Kevich's. Basically I was out of the design loop and only occasionally did I do any building design, usually privately or for other Government agencies, not the Forest Service.

In 1980, I was included in a team along with Bob LeCain, Regional Architect from Region 1, to develop a 30-Year Facility Needs Report for the Alaska Region. Together with a Civil Engineer (Team Leader), Landscape Architect, Social Scientist, and District Ranger, the team was to produce a report to the Regional Forester. Two issues created the need for this action. First was the Alaska Native Claims Settlement Act, which gave almost 900,000 acres of land to native corporations. Second, on August 25, 1978, seven Forest Service employees were killed in a float plane crash (which brought the total lives claimed in a 4-year period to 15). This intensified the need for a new approach to doing the on-the-ground work.

The report was signed by John Sandor, Regional Forester, shortly after it was competed by the team. In 1981, Bob and I were called back to Juneau to develop an implementation plan; this team included the Landscape Architect and Civil Engineer from the original team plus a Forest Engineer off an Alaska forest. We developed several prototype buildings, a prefabrication process, and a proposal for a floating barracks for use with short-term timber sales. This was a very fulfilling part of my career, reaching out to aid another Region.

In 1986, I became a part of a new group in the Region—the History Team (better known as the "H-Team"). The H-Team saw the need to better manage the historic buildings in Region 5. This group included archaeologists, historians, landscape architects, and architects. The group was to be advisory, diverse, and flexible. I knew I was becoming a senior when some of the buildings I had designed were coming up in our visits to the forests.

In 1991, I signed up for a training session on the Sierra National Forest titled "Log Cabin Stabilization." I was one of 10 students paying $400 to assist in the repair and stabilization of the Jesse Ross cabin, constructed as a homestead in 1864. This 127-year-old structure had been moved one-quarter mile from private land to National Forest System land. Harrison Goodall, an architect specializing in restoration of historic buildings, was the instructor. The 10 students, together with almost 100 volunteers from the local forest, worked 10 hours a day for 6½ days to restore the cabin to be used as an information station for a scenic byway just south of Yosemite National Park. By the end of the week I was totally exhausted, but had a great sense of accomplishment. I will always remember that week.

In May of 1994, Bob Sandusky, the Regional Architect, took a congressionally approved $25,000 buyout, leaving me as the only GS-13 architect in the Region. I became the leader of the three remaining working architects, though I couldn't really call myself the Regional Architect because I had not practiced architecture for almost 20 years. I inherited the position just when dollars for new construction were at a 20-year low.

After 37 years of working for the Forest Service in San Francisco, I decided to write a history of architecture in the agency, encouraged by the active architects and the Regional Historian. The document is based on my acquaintance with some of the earlier architects; reading letters and reports; reviewing plans; asking questions of fellow current Forest Service architects, historians, and engineers; and interviewing retired employees. I wish I had started this research many years ago, but remember—I only planned to work for a very few years in the Government sector.

—John R. Grosvenor

Bob Sandusky

Regional Architect, Region 5 (1985–1994)

Having been born and raised in the New Mexico mesalands, in the small town of Tucumcari, it was easy for me to adjust to the rural environments of the Forest Service. I was familiar with the way architecture so close to the land differed in many ways from buildings in an urban setting. But when I came to San Francisco in August 1965 after my discharge from Fort Hood (where I had been an ordinance officer with the First Armored Division), rural architecture was really not on my mind. I graduated from the University of Colorado with a 5-year Bachelor of Architecture degree and when I had finally completed my military obligation, all I really wanted to do was serve my internship, become licensed, and start my own firm. But first, I had to take care of my wife and young son, which meant getting a job quickly—not a good prospect in San Francisco, where unemployed architects lined the streets! So when I responded to the Forest Service advertisement, I was skeptical that the job hadn't already been taken.

When interviewed by Harry Kevich and John Grosvenor, I was pleasantly surprised by the quality of work I saw being done, and I liked the attitude and atmosphere. It was an easy but unexpected decision for me to accept the job offered. That job was to be the Station Architect for the Pacific Southwest Forest and Range Experiment Station in Berkeley. Although their employee, I worked in the office with the other architects in San Francisco. After being with PSW for 7 years, I transferred over to the Regional Office in 1972, leaving PSW to my assistant, Keith Lee. I stayed with the Region until 1994. When Harry Kevich retired as Regional Architect in 1985, I took over his position, where I remained until my retirement at age 55. I can best describe my career as roughly divided into three periods of about a decade each.

The early period, from 1965 to 1975, was my professional development period. My work, like many Forest Service architects, began by doing the obligatory working drawings for pit toilets! But soon it progressed to designing the Mammoth Visitor Center on the Inyo National Forest on the east side of the Sierra Nevada range, completed in 1969 (figure 3–22). Jim Calvery had done a nice design previously for the center, but it had suffered the wrath of the Regional Forester, Charles Connaughton, who demanded a redesign. During this time I gained experience toward becoming licensed in California, which I achieved in 1973. Throughout the Region and the Station, the diversity of projects and designed responses was challenging, interesting, and stimulating to the staff. The quality of the work was high, the attitude was enthusiastic and professional. The quantity of projects was such that the architects and staff grew to 14 persons at one point in time.

In addition to the Station and Region projects in California, we were doing projects throughout the United States for other Regions and other agencies as well. The national standards for Job Corps facilities were jointly devel-

Figure 3-22. *Mammoth Visitor Center, Inyo National Forest, Region 5 (1966)*

oped between our office and the Bureau of Reclamation in Denver. I spent a month on detail in Region 9, working on Job Corps messhall designs, then returned to design a ranger station for the Gila National Forest in New Mexico. Meanwhile, Bill Bruner designed the visitor center for the Sawtooth National Recreation Area in Sun Valley, Idaho. In 1974, Harry Kevich and I were requested by the Civil Service Commission to go to Washington DC, to do the program, planning, and conceptual design work for the proposed campus of the Federal Executive Institute in Charlottesville, Virginia.

During this period, construction began on the Redwood Sciences Laboratory (see figure 2–161 on page 167), which I had begun designing as Station Architect and for which we hired two temporary assistants, Phil Nichols and Bill Jaros. The lab, constructed at the edge of the Humboldt State University campus in Arcata, California, won an award in the Laboratory of the Year competition. It was the first building in our office to cost over a million dollars and was one of the first to have an Environmental Impact Report filed in the State of California. In October 1975, both the Sawtooth Visitor Center and the Redwood Science Lab were selected by the Federal Design Council in Washington, DC, from nearly 1,000 entries to be part of a traveling exhibit that was shown throughout the United States and overseas. For us this was the golden age of Forest Service architecture.

As the first decade of my Forest Service career was dominated by the work of the Job Corps facilities, the second decade had a focus on development of the nurseries for replacement stock of trees for the forests. As a result, I did a lot of work at the Placerville Nursery. It was also a time of interest in alternative energy sources as a result of the oil crisis of the mid-1970's. The architects used passive and active systems of energy utilization in a variety of buildings. Active solar heating was employed at the Albuquerque nursery and the Chilao Visitor Center (see figure 2–129 on page 146), both designed by Harold Nelson. Passive techniques were incorporated in nearly all design work. Many innovations were successfully achieved because the remoteness of the building sites and the size of the buildings made the projects well suited for alternative energy designs.

I worked with NASA/Lewis Research Center to design a lookout at Antelope Peak on the Lassen National Forest (see figure 2–68 on page 100), which was the first use of photovoltaic cells as the sole power source for a permanent residential unit. No photovoltaic cells of the necessary capacity and type were available commercially, so NASA designed and built the system to specifically meet the power requirements of the lookout.

We also designed housing that departed from the more traditional barracks or single-family residence. Duplexes and attached units that could be used as individual quarters or combined into multiple living facilities to accommodate both sexes were built at the Sawyer's Bar and Petersberg Work Centers on the Klamath National Forest (figure 3–23). These buildings reflected the modernization of the agency, with increased emphasis on the roles of families and women. Housing was being turned over to private-sector rentals except for remote areas such as these.

Another innovation we saw develop in the 1980's was what became known as multiagency facilities. The first facility of its kind to be formally acknowledged as such was the Northern California Service Center (NCSC) at the Redding, California, airport. NCSC grew out of a traditional sharing of firefighting resources with the California Department of Forestry, but the facility really took shape after a tragic air accident and resulting fire destroyed the fire cache building at the facility. Both agencies combined funds to completely renew the facility and build several new buildings and remodel others. This center again became a focus of activities in the 1990's when we began working with the Shasta-Trinity National Forest to design their supervisor's office for that site. Like so many other projects, however, the office effort was doomed to failure—something we had unhappily seen

Figure 3–23. *Sawyers Bar Barracks, Klamath National Forest, Region 5 (1990)*

happen too often. But partnerships with other agencies, Federal and State, were to become a major vehicle for providing facilities on increasingly shrinking budgets in all the land management agencies. The gold was disappearing from the golden age of Forest Service architecture.

The third decade for me began when Kevich retired in November of 1985. Being the senior architect, I took over his responsibilities and officially became the Regional Architect in April 1986. By this time the architecture staff had been reduced to four, Keith Lee, Joe Lazaro, Doug Rodgers, and myself. Doug and Joe retired not long thereafter, and we began recruiting replacements, eventually hiring Dana Henderson and Pam Chang, two very competent licensed architects. In the meantime, planning was underway on the Big Sur Multiagency Facility (see figure 2–22 on page 71), for which we combined resources with the California Department of Beaches and Parks and the California Transportation Department. This project was significant from the fact that with such a small staff we were able to provide the design leadership and coordinate the project through all the preliminary work and several phases of construction. We relied on outside architectural offices such as Gordon Chong and Associates to help us with the larger projects like Big Sur while continuing to design other building projects with our own staff.

With the help of personnel borrowed from other staffs on an as-needed basis, we developed a highly efficient and talented design team: Nelson Hernandez and Gordon Linebaugh helped with structural design; Gary Shelton supported the electrical design with Greg Gebhart, who also wore the plumbing hat (you don't want to know what that was!); Warren Deboer was our mechanical engineer; Bob King was often available to help with the landscape design and site planning; and Larry Jarmillo was borrowed from

Figure 3–24. *Quincy Ranger District Office, Plumas National Forest, Region 5 (1988)*

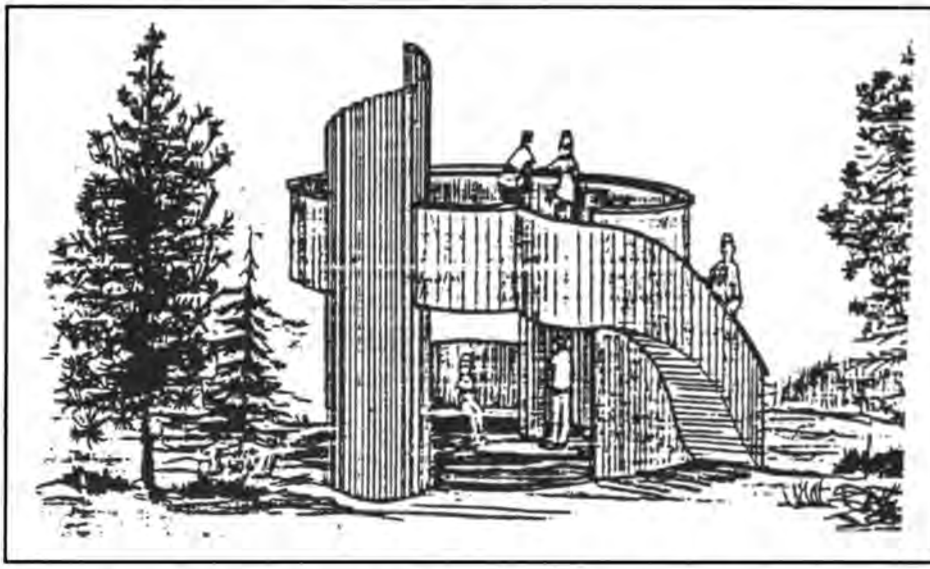


Figure 3–25. *Overlook, Oh! Ridge Campground, Inyo National Forest (1972)*

the Sierra National Forest as our traveling draftsperson. This group, with some variation, joined with Chang, Henderson, and Lee to produce projects like the Quincy District Office, the Big Sur Multiagency Facility, the Groveland District Office, the Mount Baldy Visitor Center, the Mono Basin Visitor Center, the Eagle Lake District Office, and the Fresno Air Attack Base. There were other significant works done by this group as well, some of which were never built. I cannot pay high enough tribute to this group of dedicated and talented people, whose tireless efforts, boundless energy, and priceless humor made my job worthwhile. We gave the agency and the taxpayers greater than full value in the quality and quantity of work produced. But in the era of indiscriminate Government downsizing, even this high degree of efficiency could not continue for long.

Increasingly restrictive budgets, fewer projects, and personnel cuts were reducing the resources and our ability to perform. This time of increasing regulation and program complexity resulted in more and more demands on the designers' skill and knowledge. From the time I began in the Forest Service, the Uniform Building Code had increased in size from a single volume in 1964 of 464 pages to the 1994 version which held the main code in three large binders of several thousand pages. Also there were related volumes of codes and standards plus additional regulations at the State and local levels with which we were required to comply. Combining agency facilities had certain economies, but for architectural projects the degree of complexity was significantly increased because of the political and bureaucratic entourage each agency brought to the effort.

Decentralization, too, sought efficiency by empowering each unit to "do its own thing." The result was further dilution of the effectiveness of the regional-level architects by duplicating resources in each of the 18 forests. Oftentimes this meant they extended themselves beyond their talent and ability. The results did not always meet policy requirements or even legal codes and standards. Unwanted inspections and policing (called "monitoring," which one of our electricians looked up in the dictionary, defined as a flesh-eating lizard) of compliance. Litigation also became a dominant factor in some of our projects, and dealing with the minutia of claims and lawsuits took up an increasing amount of our already scarce time and resources. The agency was moving towards more and more bureaucracy.

By the early 1990's, despite the supportive leadership (people such as Bob Harris, Dick Deleissegues, and Mike Alaux), Forest Service architecture as I had envisioned it was no longer possible. Economics of scale and the advantages of proven knowledge and talent were cast aside for the dogmatic policy of downsizing. It became obvious to me that I no longer fit with the agency to which I had devoted 29 years of my professional career. In order to facilitate personnel reductions, early retirement became available, so I bid farewell to the Forest Service and Smokey Bear in May 1994.

James A. Calvery

Regional Architect, Region 9 (1965–1992)

After 4 years in the Navy during the Korean conflict, I put my training as a weatherman to use at United Airlines. Shortly after that I attended the University of California at Berkeley, and I graduated in 1962 with a Bachelor of Architecture degree.

As I had grown up in southern California, I returned there for employment and worked for a private firm in Santa Ana. They hired me as their head designer, which I found out later was a practice of many businesses to keep up to date on what's happening in the profession. I gained a great deal of experience in a short period of time. My memorable projects were two office buildings in Santa Ana, several medical facilities, a car dealership, a manufacturing plant, and—my favorite—a residence for one of our major clients in Palm Springs, California. One of my projects received an American Institute of Architects award in Orange County, which was the climax of my private career.

In 1965, I had already become disenchanted with office work and yearned for employment that would allow me time to spend outdoors and remain in the design arena. The Forest Service in San Francisco had an opening and seemed to be exactly what I was looking for; and what better city could one wish to work in. After an interview with Harry Kevich and John Grosvenor, I was hired.

I didn't realize it at the time, but we had a very good, although informal, architectural team going. Harry provided me the freedom to travel and plan projects with various forest supervisors, engineers, and landscape architects. We all worked together well and shared the same goals. During this time, I often slept in the forest campgrounds and talked with the campers around a campfire and discussed their needs and desires. I enjoyed my work so much that it was hard to believe anyone would pay me to do it.

During the first 30 years of my life, our family spent most of their vacations in the Mammoth Lakes region of the Inyo National Forest. My father and I backpacked to many lakes in the area. In 1966, the Region decided to build a combination ranger station and visitor center at Mammoth Lakes, and I was assigned the project. How much better could life get. I loved the area, and knew it like the back of my hand. Everything I had went into the design of that facility, and I still think of it as one of the highlights of my career.

Reality soon came to light when Harry presented my Mammoth Lakes project to the Regional Forester, Charlie Connaughton. With one glance at my model, the design went down the tubes, as did my career in San Francisco. Although I loved the mountains and the beaches of California, I pursued greener pastures. Openings presented themselves in Atlanta (Region 8) and Milwaukee (Region 9). Atlanta seemed the better place to

Figure 3–26. *Amphitheater Building, Shasta Lake Campground, Shasta Trinity National Forest, Region 5 (1966)*

live, but that office had problems keeping architects, which I discovered was due to management. On the other hand, Don Turner was Regional Engineer in Milwaukee, and I received only good reports about him. So I packed my pickup and headed toward Lake Michigan. I arrived for New Year's 1967 in a snowstorm and questioned my judgment.

My first night, Don Turner, Nels Orne, and their wives took me to a German restaurant and introduced me to raw beef, bratwurst, and a yard of beer. I had found a new home. My first project was an observation tower on Spruce Knob, the highest point in West Virginia (figure 3–27). It was constructed primarily of rock gathered at the site and still remains a tourist attraction. I soon became a registered architect in both California and Wisconsin. Although not required for Government architects, it did help gain respect from private architectural firms, with which we did business from time to time. Nels Orne was a branch chief in Engineering at the time, so I became the Regional Architect. George Raasch and Dave Frese were outstanding architects who worked with me but later moved on to the private sector.

My first major project in Region 9 was a visitor center in northern Michigan. I designed a glass box to fit into the north woods. It was then that I knew I was in trouble. The Forest Service in the Midwest was not ready for this concept (a word they never understood, and still don't). So, Bob LeCain (another Forest Service architect) was brought in from Montana on detail and provided a more conservative design, which was accepted.

Many outhouses later, I regained my confidence and took on a visitor center design in West Virginia. Although my design was a little radical, Don Turner backed me all the way. We presented the design to Jay Cravens, the

Regional Forester, and he put his complete trust in us as professionals; an act never again experienced after he left the Region. The project was very successful and attracted more people than anticipated.

After Don Turner was transferred to the Washington Office, the reins began to tighten on architectural design. The new philosophy consisted of "engineers can do the planning and the architect's job was to apply the facade." Communication also shut down, all memos being rewritten until they never indicated what was intended. Teamwork broke down and the Regional Office and forest relationship became them versus us. Nothing left our office that didn't have a gable roof, because anything else wasn't considered architecture acceptable to the Forest Service. As design became stagnant because of restrictions, I tackled the architectural planning process, which the Region never had.

An order was finally given to the building program. We had a 10-step process which ran from determining the need through site location into the budgeting process so that money was budgeted at the right time to accomplish site work, construction, and landscaping.

Two things happened simultaneously which rendered my job useless. We embarked upon the computer age, not a problem in itself; and we acquired a new Regional Forester. "Empowerment" became the word of the day. Region 9's interpretation of empowerment was to reduce the decisionmaking process to the lowest possible level. The forests acquired computer-aided drafting (CAD) systems. With firefighters, secretaries, and temporary student help, et cetera, making architectural decisions and assorted people playing in the CAD machines, I experienced extreme frustration! Building codes were completely ignored on the forests. Safety violations began to

Figure 3-27. *Spruce Knob Observation Tower, the highest point in West Virginia, Monongahela National Forest, Region 9 (1968)*

creep up throughout the Region and no one seemed to care. I experienced a heart attack, and my frustrations grew to the point that I took an early retirement.

Several years passed. Dave Dercks, the person who became Regional Architect after my retirement, asked me if I would consider coming back to do design work. I think the Region finally figured out that machines don't have ideas. As I was becoming bored with retirement, I jumped at the chance to get back to work. For this opportunity I will always be grateful to Dave.

The timing was excellent, as the Seneca Rocks Visitor Center (figure 3–28) was 20 years old and needed expansion. My original design provided for expansion, and I was lucky enough to be there to carry out the project. We were also lucky enough to acquire the original contractor, and the final project fulfilled my expectations. The town changed its name from Mouth of Seneca to Seneca Rocks to match the visitor center. I was once again on a high. The visitor center was later destroyed by an arsonist. Another sad end to at least 5 years of my career.

We did more Job Corps projects, and the corpsmen gained skills. The Region was able to construct more complicated structures. That was a plus; however, the forest CAD operators felt free to alter our designs at will.

Figure 3–28. *Seneca Rocks Visitor Center, Monongahela National Forest, Region 9 (1972)*

My final project for the Forest Service was a log office building in LaCroix, Minnesota. There seemed to be a conflict in philosophies when it came to outfitting a log cabin with computer systems, but I gave it my best effort. As the non-architects gained more control of design, and I turned 60, it became time once again to fade into retirement.

What I tried to do during my career was to give the taxpayers the most for their dollars, something functional and aesthetically pleasing, but short of a monument.

Wilden Moffett

Regional Architect, Region 4 (1966–Present)

I was born and raised in southern Idaho, so I have never been very far from my home. I was born in Burley, Idaho, and lived on a farm about 9 miles out of town. When I graduated from high school, I spent 1 year of college at Ricks College in Rexburg, Idaho, doing pre-engineering studies. From there, I transferred to Idaho State College in Pocatello, which is now Idaho State University. They had a 4-year architecture program, which I started in 1956 and graduated with my B.S. in architecture in 1960. How did I choose to study architecture? I remember telling my dad that I wanted to be a carpenter, but as I got into my later high-school years I decided that my choice was not to drive the nails but to give direction to those who would. That is the basis for my chosen profession.

While I was going to architecture school, I got married and we started having our family. By the time I graduated we had one child and the second was a month away. While going to school, I worked for a small home-planning firm that did all residential design. The owner of the company, Al Gabrielsen, did not have an architectural license. He did all of the contact work with the clients and prepared a preliminary plan and elevation, then turned it over to the drafting staff to prepare the working drawings and description of materials. We would then get half the fee for the project. I earned about $0.25 per hour for my first project and eventually made up to $1.50 per hour, which was a reasonable part-time salary for the late 1950's. I worked my way through school with that job.

When I graduated, the company moved me to Ogden, Utah, to open a branch office for the home-planning firm. After approximately a year, I was enticed to go to work in a design office for a packaging plant that prefabricated all of the components of a house. That lasted another year. It was enjoyable work, but I was beginning to realize that if I was ever going to get my license I was going to have to work for a licensed architect. So at that point in time I went to work for architect Lawrence Olpin in Ogden. I worked in that office for 3 years and became his chief draftsman (only because I was the only draftsman at that time). I got some very good experience in that office doing schools, churches, and fire stations.

Work in that office began to diminish, so I went back to work for Gabrielsen for 3 or 4 months. Before going to work for him I had identified a job with the Forest Service that would soon become vacant.

I came into the Regional Office to interview with Bill Turner and his boss, who was Vern Despain, for the architect position with the Forest Service. Vern had one question for me. I was a punk kid just 5 years out of college. He turned to me and said, "Now can you design a building from beginning to end with a complete construction package?" I reassured him that I could handle that well.

While I was in the office for the interview, I met the present architect, Cal Spaun, who was completing a career with the Forest Service. Prior to that he had worked for the local firm that designed the Art Deco style Regional Office at 25th and Adams, built in the early 1930's. Cal was retiring and I would take his place if hired. Also in the architecture section was a technician, Al Saunders, who was extremely capable and was a better draftsman than I.

I was then offered a job in the Ogden Regional Office working for William Turner as a GS-9 architect. I started work in February 1966.

Bill Turner was not a graduate architect, but was granted the rating by OPM even though he was a civil engineer by training. In 1974, a meeting was called to announce the reorganization of Engineering. When we got into the meeting they uncovered an organization chart; I was listed as the Regional Architect. I thought it was so interesting that they listed me in this position without even asking me whether I had any interest in the job or wanted the responsibility. Bill had gotten involved in skilift reviews and was listed on the new organization as the tramway engineer.

Projects that I worked on were all relatively simple. The Intermountain Region budget was always quite small (as building construction money goes). I remember shortly after I started that one project was to be built by a local Job Corps (not associated with the Forest Service). It was to be a biological evaluation center to be constructed in the outskirts of Ogden. Both Bill and Al were struggling with its outside appearance; the floor plan had already been approved. I came into the office one day and asked them if I could play with the problem. Bill said "Sure." I sat down with some overlays and did some sketches. I came up with a scheme that was acceptable to both Bill and Al. It was constructed as I had sketched it—this was good strengthening experience for my self esteem.

I was given another little project; a toilet building with an attached visitor information station. As I drive over to southern Idaho, now going to Sun Valley, there sits the Galena overlook, still functioning 30 years later (figure 3–29). Even though it was a small project, it had been a very rewarding experience.

Probably one of the biggest challenges and the most rewarding projects I have worked on during my career was the Smoke Jumper Training Base in McCall, Idaho, on the Payette National Forest (see figure 2–61 on page 92). This was in the mid-1980's and was to replace the old facilities with a new, state-of-the-art facility. We proposed, designed, and built a facility that included offices, drying and repairing facilities for parachutes, meeting and training rooms, and a dispatch area. We had gone through eras in our Region using a lot of flat and low-sloped roofs with many water leakage problems. In this design we tried very hard to eliminate these problems and we were successful in using sloped wood shake-covered roofs. The exterior walls were cedar shingles and native river rock treatment. This experience was fun. Bruce Crockett (an architect on the forest) and I teamed up to do the original design. A value analysis done on the preliminary design recommended a reduction of 4,000 square feet (from 21,000 to 17,000). We found

Figure 3–29. *Galena Overlook, Sawtooth National Forest, Region 4*

that the reduction could be accomplished with a good design, saving many thousands of dollars. This was a $1 million building with a total $2.75 million for the total base, which was very large for Region 4.

Another time that was very satisfying was when the Bureau of Reclamation was planning to do a major dam renovation at Jackson Lake on the Bridger-Teton National Forest. They needed facilities from which to operate their 3- to 5-year project. They then would turn them over to the Forest Service when they no longer needed them. They asked the Forest Service to design the buildings to meet both agencies' needs. So we went to work on the designs. The Bureau was on a very tight schedule, giving us only 7 weeks to complete the working drawings (office, vehicle storage building, trailer park, and site work). We used fax technology to coordinate the process, which was very new at the time. We met this very tight schedule and they contracted the construction. This was a very rewarding project. It is now the Jackson District Office and related facilities.

Leading up to 1977, most of our projects were recreation funded. Most of the recreation designs were toilet buildings. I could not see myself only practicing architecture with this limited scope. I had an opportunity to take a job in late 1977 with the Farmers Home Administration in Salt Lake City. I became the State Architect for them, covering the States of Nevada and Utah. There was almost no design work, but I had the opportunity to work with private architects by reviewing their designs, which were to be constructed in rural areas with loans from FHA. I found this to be a very satisfying job. Bill Turner was then reassigned the Regional Architect's position. In 1981, Bill decided it was time to retire. The Assistant Regional Engineer came down to Salt Lake City and asked me to consider coming back to the Forest Service in my old job. I decided I would like to be back in Ogden, so I applied for the job and was accepted. I was again the Regional Architect for Region 4.

Since returning to the Forest Service, I have had very little work on toilet buildings and have had a better sense of myself as an architect, so the experience has been good for my career. Shortly after returning, we were asked to design an office for Escalante, Utah, on the Dixie National Forest. The budget had been programmed, but when we started the preliminary design we discovered that the dollars were based on 6,000 square feet and now they needed an 8,000-square-foot building. (This is a big problem with the agency; budgets do not always reflect the real needs for the buildings.) We went to work to meet the real space needs despite a shortage of money. We worked hard to stay within budget (we used economical materials and simplified the heating and ventilating system and the plumbing systems). The bids came within budget, but the constructed building's heating, ventilation, and air conditioning system did not function properly. This was a very distasteful experience for me. We eventually spent more money than it would have cost to do the design right the first time.

Another thing I have done in the course of my career was to work with our leasing contracting staff. We decided that there was indeed a place for an architect in the process. Together we generated a program to go out to the field and meet with the users to determine the space and special needs so that the leased building would best serve them. I felt that this was a very valid use of my architectural training. This process has had a high impact on providing better space for office buildings throughout our Region. Almost half of the office buildings the agency uses are leased. I was even detailed into the leasing team leader position for 90 days at one time.

I hope that in my career with the Forest Service I will be remembered as a person who put forth every effort to help my fellow employees with my professional services and who provided a helping hand. I am a quiet and reserved person, but I do care.

—Excerpts from interview done by John Grosvenor in May 1998

Dave Faulk

Regional Architect, Region 2 (1967–Present)

I was born in Gorden, Nebraska, although my parents were living on a ranch just across the border in South Dakota at the time. I attended a one-room country school for grades 1 to 8 until we moved to Lamar, Colorado, when I was in the 6th grade. I graduated third out of a class of 319 from Pueblo South High School.

I received a tuition scholarship to attend the University of Colorado in Boulder in 1961. I intended to enroll in aeronautical engineering, but was late getting registered and wound up enrolling in architecture and engineering. Architecture was in the School of Engineering at the time and became a separate accredited school after my freshman year. I planned to get a degree in architecture, engineering, and business, but after 6 years of struggling to survive, I decided I wanted to get out of college. My counselor said I had enough units to graduate with an architectural engineering degree.

While going to college, I worked as a seasonal employee for the Forest Service in the land-line remonumentation program. I worked with Harry Mahoney, searching for section corners along the forest boundary in Colorado the first two summers. The last three summers, I guided the cadastral surveyor from the Bureau of Land Management (BLM), the only agency authorized to reestablish section corners at that time, to the locations of section corners. The BLM surveyor needed to authenticate the corner before we could set a brass cap. The money I earned during the summer paid for my first semester of the next year for college, and I would usually have to work part time the second semester.

I did a variety of jobs all through school. The most gratifying was as a foreman on the construction project of a two-story motel addition. I started the job as a laborer and had worked for about a week when the project manager and contractor were looking at the plans trying to figure out what was needed for reinforcing in the concrete footing. I glanced at the details and told them what was intended. The project manager looked at me and asked if I could understand the drawings and I told him I was an architectural student. He made me the foreman in charge of the crew.

When I was within one course of graduation from the University of Colorado, I was offered a job with the Forest Service, in January 1967. I completed the course at night at the Denver Extension Center while working full time, and I officially graduated in June 1967.

In September 1967, I was drafted into the Army and did my basic training and first year in El Paso, Texas, at Ft. Bliss. I married my wife, Joyce, on July 13, 1968. In September 1968, I received orders to report to Vietnam and was assigned to the 173rd Airborne Brigade along the Demilitarized

Zone (DMZ). When I got out in September 1969, I was reinstated as an architect with the Forest Service, working for Wes Wilkison, the architectural group leader.

Shortly after I started with the Forest Service, I was sent to Saquache, Colorado, to investigate a complaint at an office building. This was an old Southwest-style structure designed in the 1930's. The old heating system had been replaced with a new boiler in the last couple of years and at first there apparently were no problems with its operation. But the employees began complaining that the boiler wasn't working properly and that they were always cold. The facility engineer and I drove out to the district to see if we could find the problem. The small office was overcrowded, and many employees worked in the basement. You entered the back door of the office on a landing with steps up to the main level and steps down to the basement. Every time the back door was opened, cold air would rush into the basement. As I was taking measurements to do a heat-loss analysis, I noticed that the coffeepot had been recently moved to a shelf directly below the thermostat, and the steam kept the thermostat from calling for heat. I suggested that they relocate the coffeepot; once they did, the boiler worked fine.

When Wes retired in 1982, I applied for his job. Don Loff was the Regional Engineer at that time. One day he called me into his office and said, "I have some good news and some bad news. What do you want to hear first?" I asked him to give me the good news first. He looked over at me and said I had the job. I was grateful for this and asked what the bad news was. He said, "Nobody else applied." I thought this was ironic, but Don told me that he had several inquiries about the job and that he told them he already had a good candidate. I've been very fortunate to have been promoted in place and to have had the confidence of all my supervisors.

I have enjoyed my career in the Forest Service; it has been very interesting, with a variety of projects. Early in my career, I worked in the water pollution abatement program, designing toilets to replace all of the leaking vault toilets that were polluting the groundwater. During this period, when Joyce and I would go somewhere, she would tell people that I was the "head" architect for the Forest Service. I began to wonder if we would ever do anything else. That time finally ended, and I began to work on other types of buildings.

I was involved in the Job Corps program, designing replacement buildings as well as additions and remodels. We not only did the architectural work, but also the structural, mechanical, and electrical design work for each building. I returned to school many times to become more proficient in these other areas. I was also involved in the energy conservation and photovoltaic programs. You never knew from month to month what you might get involved in. It was a very challenging and interesting time.

During the energy conservation program, we got involved in doing many inspections, analyses, and retrofits to save fossil fuels. I was asked to assist the Rocky Mountain Research Station in analyzing their facility in Bottineau, North Dakota. This one stands out in my memory, as the site is about 10 miles south of the Canadian border, and we did the site visit in January; the highest recorded temperature that week was -35° F. The facility was a very nice office and laboratory with attached greenhouses. During the inspection, we discovered the entire complex was heated by one large boiler, and they did not have individual shutoff valves for the greenhouses. They were heating the greenhouses (which were not used in the winter). We recommended the installation of a $100 shutoff valve to isolate the greenhouses during the winter months that would save approximately $15,000 per year in fuel costs. Needless to say, this paid for our trip and was a great fuel saver from that point on.

One humorous situation I recall occurred several years ago when we were doing safety inspections of all the facilities at Shadow Mountain Village. The site had been given to the Forest Service by the Park Service and had been the construction camp for the building of the dam for Grandby Reservoir. Most of the 50-plus two-bedroom cabins were of panelized construction and temporary in nature when the dam was built in the late 1940's and early 1950's. Anyway, I crawled under a cabin to inspect the foundation and the floor joist system. The rest of the team went inside to look at the interior. As I moved toward the center of the unit with a flashlight in hand, admiring the beautiful, thick, orange mold that completely covered the underside of the floor system. I heard a large splash of water to my right. As I pointed the flashlight in the general area of the noise, I could see a small lake within inches of where I was crouched, with ripples still splashing at the edge. Someone had just flushed the toilet above. Would you believe the outlet had never been connected to a sewer? Needless to say, we condemned that cabin and several others, and they were removed a couple of weeks later.

Thinking back to the first facilities workshop that I attended, involving most of the Forest Service architects, in Madison, Wisconsin, in late 1969 or early 1970, I took part in the workshop tour of some of the more significant buildings in the Madison area. The first stop was a church designed by Frank Lloyd Wright, and I remember being so excited to finally see one of his buildings in person. We were left pretty much on our own to look at the building. I was busy looking in the various rooms and got separated from the group. When I finally came out, nobody was around and the bus was gone; here I was, stranded in a strange town, not knowing where I was. Somehow, I managed to get back to the Forest Products Lab, but for the rest of the day I had nothing to do. That evening, when we went out to dinner, Benny, Joe, Wes, and some of the others had several laughs over my enticement by a Wright-designed building. The Forest Service architects have been a good group to work with, and we pass designs back and forth to critique each others work as well as to share information. This group has had a good camaraderie which I don't think exists in most other agencies or in the private sector.

When I became Regional Architect, I started to do designs on my own. This included meeting with the rangers and staff to determine the needs for the various buildings to be designed and developing the prospectus for the project. One project stands out in my mind: the Holy Cross-Minturn Office in West Vail (figure 3–30). This was a very gratifying project, working with the local staff to develop the minimum requirements. Once the project was

Figure 3–30. *Holy Cross Ranger District Office, White River National Forest, Region 2 (1992)*

designed and built, I received a certificate of appreciation directly from the ranger and staff at an open house for the new office. That was real special to get recognition and appreciation from the people who will occupy the facility. Since that time, the design has been used at a couple of other locations, with the same appreciation by the local units.

Figure 3–31. *Pactola Ranger District Office, Black Hills National Forest, Region 2 (1994)*

I never had a low point in my career; growing up on a ranch, going through the military, working my way through school, all have given me a great appreciation for the opportunity to work for the Forest Service. It's been fun working for this organization as an architect. My wife often said that I was the only person she knew who enjoyed going to work—and I have. Even during the days when we were designing toilet structures, it was fun, and it still is fun.

I would like to be remembered as a designer who fulfilled the needs of the users—not necessarily through spectacular buildings, but ones that the occupants enjoyed working and/or living in. To me, customer satisfaction has always been the final judgement.

—Excerpts from interview done by John Grosvenor in May 1998

William A. Speer, Jr.

Regional Architect, Region 8 (1968–Present)

I was born in 1944 in Washington, DC. I grew up in Georgia, Texas, and South Carolina. My father is an architect and was in private practice from the end of World War II until 1954, when he accepted a professorship to teach architecture at Clemson College. In 1962, he became Dean of Architecture, Fine Arts, and Music at Auburn University. Growing up in this academic atmosphere, I was greatly influenced by lectures of visiting architects, and in 1962 I enrolled in architecture at the University of Florida. At school I became very design oriented and minored in city planning. My junior year, I spent the summer in San Juan, Puerto Rico, on a university exchange program, where I got my first introduction to historic preservation. My senior year I started putting out job feelers. I had the idea of working for a couple of years and then going back to school to get a master's degree in city planning at the University of Pennsylvania.

It was during this time that I filled out an application for Federal employment with the Department of Housing and Urban Development (HUD). In those days, when you filled out an application and got a rating, they sent it to all Federal agencies. As it turned out, HUD was not hiring. The economy was in a slump, so private architectural firms were hiring only a few people. The going rate of pay for young graduate architects was about $110 per week, and things looked a bit grim. About 2 weeks before I graduated in the spring of 1968, I received a letter from the Forest Service in Atlanta, saying they were looking for an architect and that I had 2 weeks to reply. I was in the middle of final exams. It was the only concrete job offer I had received. I waited until the last day and sent the Forest Service a telegram telling them I would accept the job. Thus began my career in the Forest Service.

In June 1968, I reported for work in the Division of Engineering in Atlanta, at that time about 40 people. Kelly Heffner was Regional Engineer and Grady Burnett was head of the facilities group. On my first day at work, they gave me the grand tour, introducing me to everyone and explaining what my job would entail. At the end of our discussion, they asked if I had any questions. I asked when they were going to introduce me to the other architects. Mr. Heffner said, "You are it. You are the new Regional Architect. There aren't any other architects." And so it began. My first project was the design of a four-unit flush toilet for the Davidson River campground on the Pisgah Ranger District in North Carolina.

I received a lot of help and encouragement from the engineering staff in my early years. Kelly Heffner, Grady Burnett, Jim Armfield, and many others went out of their way to teach me how things worked and shared with me their breadth of experience that extended back to the 1930's, when architecture in Region 8 began. This experience and the kindness shown me formed my attitudes and established for me what the Forest Service and its people are all about.

The work began to pour in, and in 1969 we hired Don Crichlow as our second architect and began picking up summer students from Georgia Tech's architectural school to help out with the increasing workload.

In 1970, I was transferred to the Region 5 office in San Francisco to gain experience and get additional time working under a registered architect that would count toward the internship requirement for professional registration. This was an invaluable experience for me. Harry Kevich, the Regional Architect, and John Grosvenor set up an excellent professional training plan for me that vastly improved my architectural skills and also provided me with management training.

I brought projects from the Southern Region with me and was able to interact with the others in this office in developing these designs. This opportunity to work with an established and experienced group of architects was exciting and rewarding. My association with Bob Sandusky, Bill Bruner, and Roy Ettinger helped me formulate and crystallize my own design philosophy. Harry Kevich's counsel, philosophy, and pursuit of design excellence made a lasting impression on me during my stay in Region 5.

On returning to Region 8, the Forest Service was going through some dramatic changes. The Job Corps program that began in the mid-1960's was expanding. It had outgrown its temporary facilities and began building permanent centers. We designed most of the permanent buildings on Region 8's eight centers. The Accelerated Public Works Programs were allowing us to rebuild our recreation areas, ranger stations, and work centers across the Region. The water pollution abatement program in the 1970's provided even more projects.

Figure 3-32. *Anna Ruby Falls Visitor Center, Chattahooche National Forest, Region 8 (1988)*

Figure 3–33. *Womble Office Building, Ouachita National Forest, Region 8*

In my tenure as Regional Architect, I have always remained a designer. Our office operates like a small architect-engineer practice. We treat the Forest Service and the public as our clients. Over the past 29 years, our office has designed and produced over 600 projects. There have been literally hundreds of people that have worked together to make this all possible. It truly has been a team effort. Roger Mizell and Ron Stanley, our environmental engineers; Arch Kennedy and Randy Warbington, our mechanical and electrical engineers; all the landscape architects; our field engineers; the rangers; and all the other people that have shaped the built environment on the national forests are the team.

What is the Forest Service all about? It is the really terrific people, a little architecture, and the chance to provide an atmosphere where the creative process can take place.

Jo Ann Simpson

Engineering Technician (1969–1982)
Architect (1982–1994)
Regional Architect, Region 6 (1994–Present)

I have always marched to the beat of a different drummer. At least it has always felt that way.

I'll start with the basics. I was born in Yakima, Washington, in 1950. My father was a carpenter and my mother was a nurse. My parents were divorced when I was 5, and my mother raised our family in Portland, Oregon. Luckily, she had a career to fall back on (something that was not very common for a woman during those years). She was a wonderful role model, and through her example I learned self-reliance and determination.

After high school, I went to Oregon State University (OSU) to study textile design. I thought I wanted to be an interior designer. OSU only offered interior design through their Home Economics Department. I took basic design and an architectural drawing course. From that time forward, I knew I wanted to be an architect. There weren't many, if any, women in the technical programs like engineering, architecture, and medicine.

It was while I was attending OSU that I started to work part time at the Siuslaw National Forest Supervisor's Office in Corvallis as a forestry aide. I was able to do this through a work-study program. Working for the forest

Figure 3–34. *Toketee Office, Umpqua National Forest, Region 6 (1994)*

facilities engineer, Tom Bakondi, I got my first taste of drafting, engineering, and some architecture. This enabled me to stay in school, and was the beginning of what I never intended to be a very long career with the Forest Service.

After 2 years at OSU, I ran out of money and decided to return to Portland. The Forest Service offered me a full-time job as a "draftsman" in the architecture group at the Regional Office. It was 1969, I was 19 years old, and I thought I had the world by the tail. The Regional Office was where I met some fantastic people and had the opportunity to work with some of the best architects, engineers, and technicians in the Northwest. Ken Reynolds headed the architects, and I learned about structural design and how things went together. Joe Mastrandrea was my idol. Not at first, because we had a tendency to butt heads, but as time went on, I learned more from that man than anyone I've ever met. He was a wonderful mentor and friend. Marcus Becktell worked as a technician in the group and was a remarkable draftsman and detailer.

During the early 1970's, the primary workload was visitor centers (Cape Perpetua and Lava Lands), standard plans for administrative buildings, and nursery facilities. I was fortunate to work on the design teams for both Wind River and Medford Nurseries. It was also during this time that I married; had my son, Levi; and divorced about 5 years later.

Figure 3-35. *Entrance detail, Toketee Office*

Figure 3–36. *Sullivan Lake Office, Colville National Forest, Region 6 (1991)*

In 1980, I decided to go back to school and finish my degree in architecture. I quit my full-time job and moved Levi (who was 4 years old) and myself to Seattle, Washington, to attend the University of Washington. I started working part time at the Mt. Baker-Snoqualmie National Forest. While there, I worked on the Huckleberry Creek Nursery Office and Gold Basin Campground facilities and prepared site plats for each district.

By October 1984, I was back in Portland at the Regional Office with my B.A. and master's in architecture (structural design focus). I became one of three architects in the Region. The largest workload was tree-cooler designs and all the support facilities for the reforestation program. I designed the McKenzie, Barlow, and North Bend tree coolers; additions to the Sisters and Kettle Falls offices; and the Lowell warehouse.

After getting my architectural licenses in the States of Washington and Oregon and to keep current in the private sector, I started my own architectural firm. I worked nights and weekends designing residential and commercial projects. I also decided to become active in the professional architectural organizations. I worked with other women architects as chair for the Women in Architecture Committee of the American Institute of Architects, Portland Chapter. As a delegate and treasurer of the Architects Council of Oregon, I worked with other architects across the State to develop legislation that benefits the profession.

In the early 1990's, I designed the Sullivan Lake and Toketee Offices (figures 3–34 through 3–37). I was fortunate to work with two very talented engineers, Lou Janke (Colville National Forest) and Rick Shockey (Umpqua National Forest). I received design awards for both projects, and I'm convinced that it would not have happened without their efforts.

The Middle Fork and Silver Lake Offices were my main projects in 1998. Middle Fork was a 25,000-square-foot design that consolidated three districts and resulted from an arson fire that destroyed the Oakridge Ranger Station. It was my first design that incorporated a large visitor information center within the reception area. The Silver Lake Office provided a long overdue solution to poor working conditions.

As I look back on my life and career, I have to say that I've been a very lucky person. I've had a challenging and gratifying career as an architect and I've known the incredible rewards of being a parent. Life doesn't get much better than that.

Figure 3–37. *Interior view of Sullivan Lake Office*

Appendixes

Plan 1D From DuBois Improvement Circular of 1917

PLAN NO. 1-D

O N E R O O M O F F I C E

16' x 20'

Items preceded by the mark (*) are standard and are not subject to change or choice. Conditions of the local lumber markets, and the isolation of certain building sites from markets carrying a varied stock of lumber are factors which will govern selection of the type of outside and inside wall cover, trim and sizes and kinds of nails. Elevation of the particular building site will determine the slope of roof to use and the dimensions of the roof frame material to order. All items subject to change or choice are indicated by the mark (#). To prepare a complete order list, select the items marked (#) which, under the particular circumstances, will be best adapted for use at a given building site. Add such items to those marked (*). To all items of lumber add the specifications shown under "Grade and Species", and "Finish". For example, two pieces 4"x6"-16' No. 1 Common, redwood, cedar, Douglas fir or pine, rough. To all items of hardware add only such descriptive matter as is necessary to adequately describe each item. For example, 2 pounds 30d. common wire nails - 3 pounds 30d. fine galvanized wire nails. Do not show on the order list the purpose for which the hardware items are to be used.

Estimated cost of construction - labor at $4.00 per day - $ 112.00.

Builder's List of Materials.

No. Pcs.	Size	Purpose & Location	Grade and Species	Finish	Bd.Ft.
		Sills and Floor Joists.			
* 2	4 x 6 - 12	Sills	Redwood, cedar or Douglas fir	Rough	48
* 5	4 x 6 - 16	"	" " " " "	"	160
* 9	2 x 6 - 16	Floor joist	No.2 Clear, D.F., 1st. Choice	"	144
* 2	2 x 6 - 16	End bridging		sized	32
* 4	2 x 4 - 16	Porch floor joists	No.1Clear, W.F.R.F.2nd. "	if	43
* 1	4 x 6 - 12	Overhead porch supports		practic-	24
* 1	4 x 6 - 16	" " "	No.2 Clear, Y.P. 3rd. "	able	32
* 2	6 x 6 - 12	Underpinning	Heart cedar or redwood	Rough	72

Note:- The item underpinning includes sufficient material shown in plan. The actual amount needed will depend upon the slope of the ground of each particular building site. Make due allowance for this item in the lumber order. If split or round material is used this item may be eliminated from the lumber list.

Studding, Plates, Girts, Etc.

No. Pcs.	Size	Purpose & Location	Grade and Species	Finish	Bd.Ft.
* 1	6 x 6 - 16	Porch posts and corner studs	No.1 Common, D.F., W.F., R.F., Y.P.	(Rough	48
*22	2 x 4 - 16	Studding	No.1 Common, any species	or	213
* 6	2 x 4 - 12	Plates & floor plate	" " " "	sized	48
*11	2 x 4 - 16	" " " "	" " " "	if	117
* 4	2 x 4 - 16	Girts	" " " "		43
* 4	2 x 4 - 16	Window & door trimmers	" " " "	practic-	43
* 5	2 x 4 - 16	False foundation frame	" " " "	able	53
* 6	2 x 4 - 12	Miscellaneous	" " " "	able	48
# 8	1 x 6 - 12	Diagonal braces for building subject to heavy snow load			48

Wall Cover (Outside) Below Water Table
(Standard regardless of cover above water table)

No. Pcs.	Size	Purpose & Location	Grade and Species	Finish	Bd.Ft.
* 18	1 x12 - 16	Sheeting for base	No.1 Common, any species	Rough or S1S	400
* 280	Lin. Ft.	5/8 x 3 battens for base	" " " "	" " S4S	70
* 5	1 x 4 - 16	Belt course	" " " "	" " S4S	27
* 5	1 x 3 - 16	Water Table	No.2 Clear " "	" " S2S1E	20

Note:- The first two items include sufficient siding for buildings having underpinning of the height shown on plan. The actual amount needed will depend upon the slope of the building site. Make due allowance for this item in the lumber order.

Choice of -

No. Pcs.	Size	Purpose & Location	Grade and Species	Finish	Bd.Ft.
# 450 B.F.	1x8	Sheeting, 6" to weather (above water table)	No. 1 Common, any species	Rough	450
		OR			
# 450 B.F.	6" or 8"	Rustic or dropsiding (above water table)	"C" Grade, California, any species or No. 3 Clear, Oregon, D. F.		450
		OR			
# 200 B.F.	1x4	Sheeting for shingles 8" O.C. (above water table)	No.2 Common, any species	"	200
#2500	- -	Shingles, 5" to weather (above water table)	Star A Star, Red Cedar		

No. Pos.	Size	Purpose & Location	Grade and Species	Finish	Bd.Ft.
		Roof Frame and Cover, 1/4 Pitch, 2' Eaves and Gable Projections -(Elevations up to 2000 feet)			
# 11	2 x 4 - 16	Ceiling joists	Same as floor joists	Rough	117
# 22	2 x 4 - 12	Rafters 2' O.C.	" " " "	"	176
# 2	1 x 4 - 12	Ridge pole	No.1 Common, any species	"	8
# 6	1 x 6 - 16	Collar beams	Same as joists	"	48
# 4	1 x 4 - 12	Rafter ties to joist near plate	" " "	"	16
#252	B.F. 1x4	Sheeting 8" o.c. except 2' rafter projection	No.2 Common, any species	"	252
#4500	- -	Shingles, 4½" to weather	Star A Star, Red Cedar		
# 3	1 x 6 - 16	Saddle boards	No. 1 Common, any species	"	24
# 6	1 x12 - 16	Sheeting, 2' rafter projection	" " " "	Rough or S1S	96
# 4	2 x 6 - 12	Barge boards	" " " "	" " S4S	48
# 4	1 x 2 - 12	Barge board trim	No. 2 Clear " "	" " S4S	8
# 4	1 x 6 - 12	Frieze boards	No. 1 Common, " "	" " S4S	24
# 3	1 x 6 - 12	Rafter end frieze between rafters	" " " "	" " S1S	12
# 1	2 x 8 - 16	Sills for louvre	" " " "	" " S2S	21
# 2	1 x 8 - 16	Louvre jambs and slats	" " " "	" " S1S	21
# 8	1 x10 - 12	Soffit for gable projection	" " " "	" " S1S	80

Note:- The preceding 8 items are listed rough or surfaced, etc., if rough wall cover is used these will be rough; if rustic or drop siding wall cover is used, order surfaced lumber as indicated. If shingle wall cover is used, ordinarily these items will be rough but occasions may arise where preferable to surface as indicated. Substitute milled bed mould for barge trim when rustic wall cover is used and add 4 pieces 12' long of 1" 1/4 round moulding for frieze trim.

Roof Frame and Cover, 1/4 Pitch, 2' Eaves and Gable Projection - Continued (Elevations up to 2000 feet)

No. Pos.	Size	Purpose & Location / Grade and Species	Finish	Bd.Ft.
# 100 B.F.	1 x 8	Sheeting, gable ends, No. 1 Common, any species 6" to weather	Rough	100
		OR - If rustic or drop siding wall cover is used		
# 100 B.F.		Rustic or drop siding No. 3 Clear, any species		100
		OR - If shingle wall cover is used		
# 52 B.F.	1 x 4	Sheeting, 8" O.C. for shingles No. 2 Common, any species	"	52
# 750	- -	Shingles, 5" to weather Star A Star, Red Cedar		

No. Pcs.	Size	Purpose & Location	Grade and Species	Finish	Bd. Ft

Roof Frame and Cover, 1/3 Pitch, 18" Eaves and Gable Projections
(Elevations between 2000 - 3500 feet)

No. Pcs.	Size	Purpose & Location	Grade and Species	Finish	Bd. Ft
11	2 x 6 - 16	Ceiling joists	Same as floor joists	Rough	176
22	2 x 6 - 12	Rafters 2' O.C.	" " " "	"	264
2	1 x 8 - 12	Ridge pole	No.1 Common, any species	"	16
6	1 x 6 - 16	Collar beams (°)	Same as floor joists	"	48
4	1 x 6 - 14	Angle struts (°)	" " " "	"	28
4	1 x 6 - 12	King struts (°)	" " " "	"	24
4	1 x 6 - 12	Rafter ties to joist near plate	No.1 Common, any species	"	24
270 B.F.	1 x 4	Sheeting (roof) 8" O.C. except 18" projection	No.2 " " "	"	270
4750	- -	Shingles (roof) 4½" to weather	Star A Star, Red Cedar		
6	1 x 6 - 16	Saddle boards	No.1 Common, any species	"	24
6	1 x12 - 16	Sheeting 18" rafter projection	" " " "	Rough or S1S	96
4	2 x 6 - 12	Barge boards	" " " "	" " S4S	48
4	1 x 8 - 12	Barge board trim	No.2 Clear " "	" " S4S	6
4	1 x 6 - 12	Frieze boards	No.1 Common, " "	" " S4S	24
3	1 x 4 - 12	Rafter frieze between rafters	" " " "	" " S1S	12
1	2 x 8 - 16	Sills for louvre	" " " "	" " S4S	21
2	1 x 8 - 16	Louvre jambs and slats	" " " "	" " S1S	21
4	1 x 6 - 12	Soffit for gable projection	" " " "	" " S1S	24
4	1 x 8 - 12	Soffit for gable projection	" " " "	" " S1S	32

Note:- The preceding 9 items are listed rough or surfaced, etc., if rough lumber wall cover is used these will be rough; if rustic or drop siding wall cover is used order surfaced lumber as indicated. If shingle wall cover is used ordinarily these items will be rough, but occasions may arise where preferable to surface as indicated. Substitute milled bed mould for barge trim when rustic wall cover is used and add 4 pieces 12' long of 1" 1/4 round

Roof Frame and Cover, 1/3 Pitch, 18" Eaves and Gable Projections - Continued
(Elevations between 2000 - 3500 feet)

moulding for frieze trim.

No. Pcs.	Size	Purpose & Location	Grade and Species	Finish	Bd. Ft
120 B.F.	1 x 8	Sheeting gable ends 6" to weather	No.1 Common, any species	Rough	120
		OR - If rustic or drop siding wall cover is used -			
115 B. F.		Rustic or drop siding (gable ends)	(No.3 Clear, Oregon D.F. or ("C" Grade, California, any species		115
		OR - If shingle wall cover is used -			
60 B. F.	1 x 4	Sheeting, 8" O. C. for shingles	No.2 Common, any species	Rough	60
1000	- -	Shingles, 5" to weather	Star A Star, Red Cedar		

(°) At elevations where snowfall is less than 2 feet the items after which the mark (°) appears should not be ordered or used.

No. Pcs.	Size	Purpose & Location	Grade and Species	Finish	Bd.Ft.
		Roof Frame and Cover, 1/2 Pitch, 18" Eaves and Gable Projections (Elevations over 3500 Feet)			--
# 11	2 x 6 - 16	Ceiling joists	Same as floor joists	Rough	176
# 22	2 x 8 - 14	Rafters 2' O. C.	" " " "	"	411
# 2	1 x10 - 12	Ridge pole	No.1 Common, any species	"	20
# 5	1 x 8 - 16	Collar beams	Same as floor joists	"	54
# 4	1 x 6 - 12	Rafter ties to joist near plate	No.1 Common, any species.	"	24
#290	B. F. 1 x 4	Sheeting (Roof) 8" O.C. except 18" eaves	No.2 Common, any species	"	290
#5500	- -	Shingles, 4½" to weather (Roof)	Star A Star, Red Cedar		
# 5	1 x 6 - 16	Saddle boards	No. 1 Common, any species	"	24
# 6	1 x12 - 16	Sheeting, 18" rafter projection	" " " "	Rough or S1S	96
# 4	2 x 8 - 14	Barge boards	" " " "	" " S4S	75
# 4	1 x 2 - 14	Barge board trim	No.2 Clear, " "	" " S4S	3
# 4	1 x 8 - 12	Frieze boards (gable)	No.1 Common, " "	" " S4S	32
# 3	1 x 8 - 12	Rafter Frieze (between rafters)	" " " "	" " S1S	24
# 4	1 x 6 - 12	Soffit for gable projection	" " " "	" " S1S	24
# 4	1 x 8 - 12	Soffit for gable projection	" " " "	" " S1S	32

Note:- The preceding 7 items are listed rough or surfaced, etc., if rough lumber wall cover is used these will be rough; if rustic or drop siding wall cover is used order surfaced lumber as indicated. If shingle wall cover is used ordinarily these items will be rough, but occasions may arise where preferable to surface as indicated. Substitute milled bed mould for barge trim when rustic wall cover is used and add 4 pieces 12' long of 1" 1/4 round moulding for frieze trim.

<u>Roof Frame and Cover, 1/2 Pitch, 18" Eaves and Gable Projections</u> - Continued (Elevations over 3500 feet)

No. Pcs.	Size	Purpose & Location	Grade and Species	Finish	Bd.Ft.
#200	B. F. 1 x 8	Sheeting, 6" to weather, gable ends	No. 1 Common, any species	Rough	200
		OR - If rustic or drop siding wall cover is used -			
#180	B. F.	Rustic or drop siding, gable end cover	"C" Grade, California, any species or No.3 Clear, Oregon D.F.		180
# 90	B. F. 1 x 4	Sheeting, for shingles gable ends	No.2 Common, any species	Rough	90
#250	- -	Shingles, 5" to weather	Star A Star, Red Cedar		

No louvre for building with 1/2 pitch roof - brackets in place of louvre.

No. Pcs.	Size	Purpose and Location	Grade and Species	Finish	Bd. Ft.
	Outside Trim.				
* 2	4 x 4 - 16	Brackets for gables	No. 1 Common, any species	Rough or S4S	43
* 1	2 x 4 - 12	" " "	" " " "	" " "	8
* 2	1 x 6 - 14	Corner boards	" " " "	" " "	14
* 2	1 x 6 - 20	" "	" " " "	" " "	20

Note:- For rough lumber and shingle wall finish, order above 4 items rough and surfaced for rustic or drop siding wall cover. Four brackets on 1/4 and 1/3 pitch roof with louvres both ends; six brackets on 1/2 pitch roof, no louvres.

No. Pcs.	Size	Purpose and Location	Grade and Species	Finish	Bd. Ft.
	Porch Material.				
* 22	1 x 4 - 16	Flooring, vertical grain	No. 2 Clear, T & G, any species		118
# 32	1 x 4 - 14	Ceiling & short walls	No. 3 Clear, T & G, any species		149
		OR - If rough lumber is used -			
# 9	1 x12 - 14	Ceiling and short walls	No. 1 Common, any species	Rough or S1S	126
# 9	5/8x3 - 14	Battens (ceiling & short walls)	" " " "	" " S4S	32
* 4	1 x 6 - 14	Porch Post finish	No. 1 Common, R.W. Y.P.	" " S4S	28
* 4	1 x 8 - 14	Porch Post finish	" " " "	" " S4S	39
* 1	1 x 8 - 12	Porch frieze	" " " "	" " S4S	8
* 1	1 x 8 - 18	" "	" " " "	" " S4S	12
* 2	1 x 8 - 16	" soffit	" " " "2	" " S4S	21
* 2	1 x 4 - 16	" trim or skirt	" " " "	" " S4S	11
# 90	Lin. Ft. 1"	Quarter Round moulding for T & G finish (corner fills)			
		OR			
# 90	" " 1x1	Corner fillers if rough lumber finish	No. 2 Clear, any species	Rough or S4S	8
* 1	2 x 6 - 18	Top hand rail - porch	No. 1 Common, D.F., R.W., Y.P.	" " S4S	18
* 1	2 x 4 - 18	Bottom rail "	" " " " " "	" " S4S	12
* 6	1 x 4 - 14	Balusters "	" " any species	" " S4S	28
	(Steps)				
* 1	1½x10 - 8	Treads	No. 2 Clear, D. F. or Y. P.	" " S4S	14
* 1	1 x 8 - 8	Risers	" " " " "	" " S4S	6
* 1	[illegible] - 6	Stringers	No. 1 Common, " " "	" " S1S	[illegible]
	Flooring				
*320	B. F. 1 x 4	Flooring, vertical grain	No. 3 Clear, Oregon D. F. or "C" Grade, California, any species		320
	Inside Walls and Ceiling Cover - Choice of				
#920	B.F. 1 x 4	For ceiling and walls	"C" Grade, California, any species or No. 3 Clear, Oregon D. F.		920
		OR			
# 16	1 x12 - 16	Ceiling	No. 1 Common, any species	Rough or S1S	256
# 26	1 x12 - 16	Sidings (inside)	" " " "	" " S1S	436
# 15	5/8x3 - 16	Battens (ceiling)	" " R.W., C.-Y.P.	" " S4S	60
# 24	5/8x3 - 16	" (siding)	" " " " "	" " S4S	96
		OR			
#900	B. F.	8" Shiplap	"C" Grade, California; any species or No. 3 Clear, Oregon, D. F.		900

Note:- Add to the lumber order your choice of above wall and ceiling cover and specify rough or surfaced as indicated.

No. Pcs.	Size	Purpose and Location	Grade and Species	Finish	Bd. Ft.
	Inside Trim.				
#156	Lin. Ft. 1"	Quarter round moulding - corner fillers -(when surfaced wall and ceiling cover is used)			
#156	" " 1x1	Strips -Corner fillers - No. 2 Clear (when rough ceiling and wall cover is used)		Rough	
* 3	1 x 6 - 16	Base boards	No. 2 Clear, Y. P.	S4S	24
* 1	1 x 6 - 12	" "	" " "	S4S	6

	No. Pcs.	Size	Purpose & Location	Grade and Species	Finish	Bd.Ft
			Window and Door Frames, Complete; including inside and outside casings, stops blind stops, parting strips, stool and aprons - if made on the job			
#	1	2 x10 - 16	Sills for 1x8 lapped siding	No. 2 Clear, D. F., Y. P.,	°S1S	27
#	1	2 x 8 - 16	Sills for rustic, shingles or drop siding	No. 2 Clear; " "	°S1S	21
#	4	1 x 8 - 16	Jambs for 1x8 lapped siding	No. 2 Clear,Y.P.,R.W.,or Cedar	°S1S	43
#	4	1 x 6 - 16	Jambs for rustic,shingle or drop siding	No. 2 Clear,Y.P.,R.W.,or Cedar	°S1S	32
#	2	1 x 4 - 12	Stools and apron (inside)	" " " " " "	°S4S	8
#	3	1 x 6 - 16	Casings (outside)	" " " " " "	°S4S	24
#	3	1 x 2 - 12	Blind stop	" " " " " "	°S4S	36
#	6	½ x 1 - 12	Parting strip	" " " " " "	°S4S	36
#	3	1 x 4 - 16	Casing (inside)	" " " " " "	°S4S	16
#	1	½ x1¼ - 16	Door and window stops	" " " " " "	°S4S	1

°Note:- If surfaced material is not available, buy rough and surface by hand when desirable.

If mill or factory made frames can be purchased, buy them in lieu of the above material.(See Mill Order List - Doors and Windows.)

Mill Order List - Doors and Windows

* 1 2'8" x 6'8" - 1⅜" Colonial, one light 24"x26", 21 oz. glass, 5 cross panel door - (See Cut Sch.BMM.-3)
* 1 28 x 6'8" - 1⅜" Colonial; 5 crpss panel door
* 1 3'-x 3' - 1⅜" Lip rail, 2 light, 21 oz. glass windows
* 2 2'6" x 4'6" - 1⅜" " " " " " " " "

If mill or factory-made frames can be purchased, order -

\# 1 Frame for 2'8" x 6'8" - 1⅜" outside door (with sill) Complete with inside and outside trim
\# 1 " " 2' x 6'8" - 1⅜" inside door (no sill) Complete with inside and outside trim
\# 1 " " 3' x 3' - 1⅜"-window; lip rail (no weights) " " " " " "
\# 1 Double Frame for 2 - 2'6" x 4'6" - 1⅜" lip rail window (no weights) Complete with inside and outside trim

Note:- Specify thickness of walls for each door and window frame and submit with each order a blue print of Detail 6-D.

Specify 1"x6" for outside casing and 1"x4" for all inside casing.

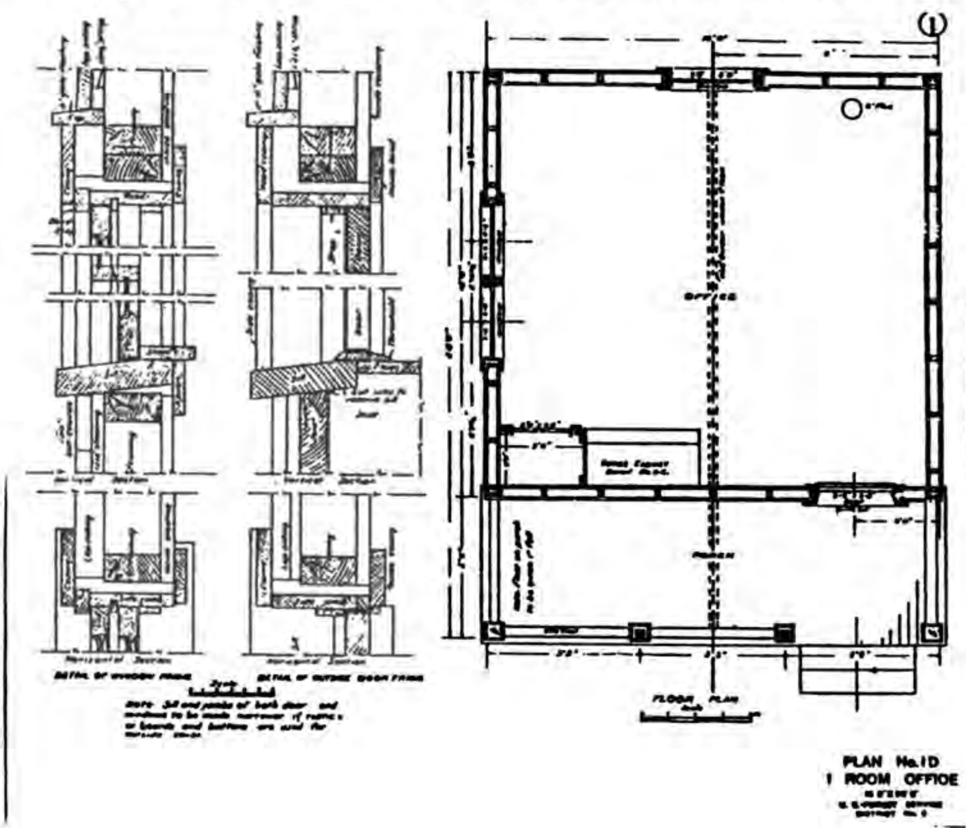
Office Cabinet.(See Detail 6-C, Sheet 1)

	No. Pcs.	Size	Purpose & Location	Grade and Species	Finish	Bd.Ft
*	5	1 x 12 - 16	Cabinet material	No. 2 Clear,Y.P.,D.F.,R.W.,or Cedar	S4S	80
*	1	1¼x 12 - 8	" "	" " " " " " " "	S4S	12
*	1	½ x 14 - 12	" "	" " " " " " " "	S4S	14

Hardware List.

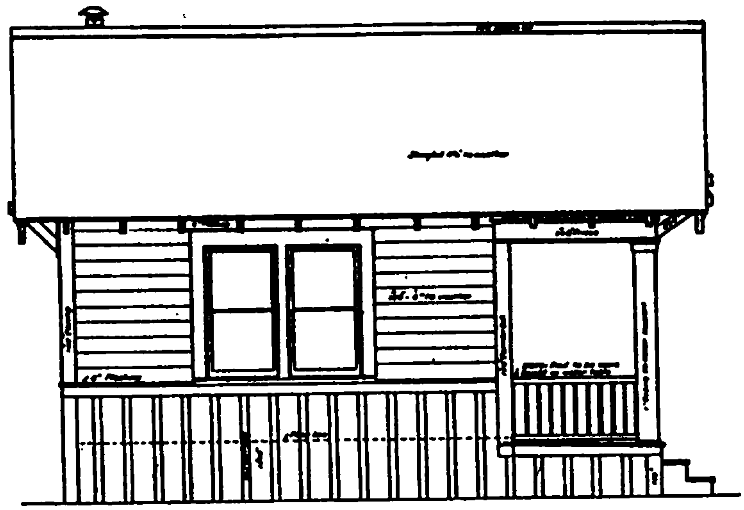
* 4# 30d. common wire, frame nails
* 15# 20d. " " " "
* 40# 10d. " " " "
* 5# 8d. " " " "
* 20# 3d. fine galvanized nails, for roof
* 2# 2d. " " " " " over eave projections
* 5# 10d. casing nails, frames and finish
* 9# 8d. " " flooring and miscellaneous use
* 1# 4d. finish nails, miscellaneous use
\# 15# 10d. common nails, if 1x8 lapped wall cover is used
\# 12# 8d. " " , if rustic " " " "
\# 10# 3d. fine galvanized nails, if shingle wall cover is used
\# 5# 8d. common nails, for sheeting if shingle wall cover is used
\# 6# 8d. " " if interior walls and ceiling are of rough lumber
\# 4# 6d. " " if battens for interior walls and ceiling are of rough lumber
\# 10# 6d. casing nails if T & G 1x4 wall and ceiling cover is used
\# 6# 6d. " " if shiplap " " " " " "
* 3 Cupboard door catches # 4800 A.C.
* 3pr. " " hinges # 1474 D-2, 2"
* 2 Drawer pulls # 5074 A.C.
* 1pr.Half surface hinges 3½" # 160 D-2, A.C.
* 1 Rim knob latch # 8052, knob # 9241
* 6pr.Window spring bolts
* 11' 4" Galvanized flashing (30 gauge)

Numbers following items of hardware are Pacific Hardware and Steel Company's Catalogue numbers. See hardware list in Builder's Material Section.



PLAN No.1D
1 ROOM OFFICE

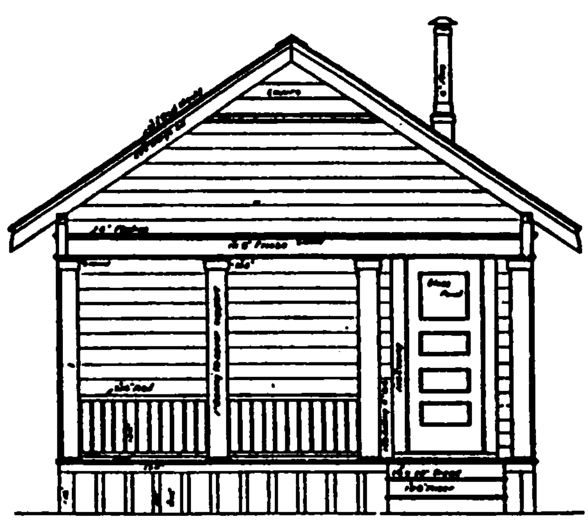
③



SIDE ELEVATION

PLAN No. 1D
1 ROOM OFFICE

④



FRONT ELEVATION

Control of Vandalism—An Architectural Design Approach

Talk given by John Grosvenor to a symposium in 1976.

In discussing the Forest Service architectural design approach to vandalism in recreation structures, I will touch on three types of abuse. The most obvious is overt human actions, such as defacing buildings and breaking items. But there are also two additional types to consider. One is covert human actions—unthinking destruction and mistreatment of the facilities, such as flushing down toilets or drains objects that disrupt sewage septic action or plug the waste lines, pouring gasoline or other volatile liquids into vault toilets, or leaving doors or windows open to the elements, allowing the facilities to be damaged by wind, rain, snow, or ice. The third type of vandalism is nonhuman damage created by natural agents, including water in its various forms, earthquakes, or various animals and birds.

The earliest Forest Service toilet structures were very primitive and simple, with rough sawn wood, concrete block, or stone masonry exteriors. The interiors were of similar character. Public use was low; therefore, vandalism was slight. After the Second World War and into the 1960's, many more people were using the national forest campgrounds, and with this increase came more vandalism. The architectural designs became larger and more sophisticated and the materials more finished, so the repair costs of vandalism increased greatly. Attempts were made to use materials and finishes that might deter or limit abuse. These included plywood interior walls with sealed flush joints and painted with a two-part epoxy paint. Extra blocking and backing was added to toilet fixtures, toilet enclosures, doors, and windows, and details were simplified to keep repair costs down. Floors were treated with epoxy and exterior finishes were natural.

In the late 1960's, public usage was increasing even more, so even larger and more complicated buildings were designed and constructed. We were still looking toward preventing overt vandalism through the designs and materials, but at this time we also began to face the other two types of vandalism. Oversized wastelines were put in to accommodate rocks, sanitary napkins, and plastic bags. The height and location of water closets and urinals for use by children and the handicapped were considered. Larger door closers were used to resist wind damage. Windows were eliminated and skylights or clearstories were added to bring in natural light. To provide heat to keep pipes from freezing in spring and fall, tamperproof electric heaters were found. The type of glue used in the plywood, the wood species of trim, and the type of roofing materials were considered in areas where animal vandalism was prevalent (porcupines have eaten exterior plywood and woodpeckers have ruined trim and roofs).

As we entered the 1970's, the cost of maintenance and the amount of vandalism had again increased, together with the number of public users, to a point where new design approaches were needed. With the increased construction costs, we found it necessary to reduce the size of the buildings to stay within budget. About this time, we discovered that esthetics were a factor in deterring vandalism; more pleasing buildings, lighter interiors, and good quality materials seemed to keep the public from vandalizing our structures. On the other hand, heavy, dark, dank spaces seemed to increase public misuses. With the decrease in size of the building and to keep the scale of the structure appropriate for the location, we tried turning the axis of our roofs 45 degrees, giving us what we called the "handkerchief roof."

In 1972, the Forest Service began an extensive water-pollution abatement program, during which hundreds of old toilet buildings were replaced with modern sanitary structures. Again, construction and maintenance costs were soaring much faster than money was becoming available. In order to better utilize the funds available, the concept of men's and women's toilets was dropped and the water closets assigned to a campground were placed in separate cubicles, each with an exterior lockable door. Once more, materials were carefully studied to give functional, attractive, easily maintained buildings. Split-faced concrete blocks with integral coloring selected for the specific campground were used for the exteriors. Easily cleanable interiors (factory applied epoxy finish or ceramic tile) were chosen. The need for fragile toilet partitions was eliminated by the either-sex concept, and an easily accessible pipe chase also held the electrical equipment and allowed space for storage of supplies. Interior lights were also placed in the pipe chase to keep public access down and reduce damage and theft. Exterior lights were specially designed for our buildings to be vandal resistant. Floors were drained into the pipe chase, with only one floor drain per building. Natural light was brought in through the roof to keep the interior of the building well illuminated. Ventilation was introduced at the top of the block walls, with closure panels to be installed in the winter. The designs were again moving toward the simple but rustic approach, with heavy flat wood beam roofs and rough concrete block walls.

Up to this point, I have been talking about toilet buildings, but the Forest Service has many other types of public-use recreational structures. Our children's play structures are simple, rugged, and very natural. Native materials are used with natural finishes. The scale of these is designed for the users. We have had very little vandalism. Footbridges in our campgrounds have been designed using low-maintenance, damage-resistant materials; cor-ten steel open web joists, heavy natural redwood handrails and decking, and exposed aggregate concrete abutments. Our designs for drinking fountains, again, are simple and natural, using heavy timber or stone pedestals and stainless steel bowls and bubblers.

A fairly recent addition to our campgrounds has been entrance stations. With these buildings we have tried to establish an architectural style for each campground or group of campgrounds. They have been in character; therefore, we have used lexon-type plastic windows to deter vandalism, with shutters for the winter season. The materials have been rugged (heavy timber or concrete bock) with natural finishes. Another new addition has been overlook structures along road systems and along reservoirs. These have been designed to invite people to use them, and have been open and clean to reduce vandalism. Again, natural finishes and vandal-resistant materials have been employed.

In our visitor centers, we have been aware of the possible effects of natural elements as well as human vandalism. Native stone, concrete, and heavy timber are used to create a building which is resistant to all three types of vandalism. Materials and design concepts have been used to create structures which express a rustic bold character and invite the public to use them. Hopefully, the new deigns will not only invite use, but vandalism-free use.

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