Chapter 4

Architectural Character Guidelines for the Nation and the Provinces

"To build responsibly in the landscape should be the architect's first consideration."

—Javier Barba

INTRODUCTION

Chapter 4 is made up of two parts. Part 1 describes design principles common across the Nation for our built environment. Part 2 describes architectural character based on ecological and cultural influences in eight separate geographic provinces. The term province is used here to distinguish it from a Forest Service region. A province combines common elements from both ecological and cultural influences. The resulting geographic areas may cross, combine, or split the Forest Service regional boundaries.

THE CHARETTE PROCESS

In 1999, the Forest Service held a series of design charettes (workshops) across the Nation. These discussions and drawing sessions included the participation of members of the Forest Service, other Federal agencies, academics, and a team of consultants. By profession, participants included architects, engineers, landscape architects, historians, writers, archeologists, recreation and facility managers, field technicians, and line officers.

The charettes identified the following influences and responses for each province:

- Ecological influences.
- Cultural influences.
- Economic influences.
- Architectural response to the influences of ecology, culture, and economics.
- Suitable architectural character types for the province.

These influences and detailed recommendations for architectural responses are discussed in part 2.

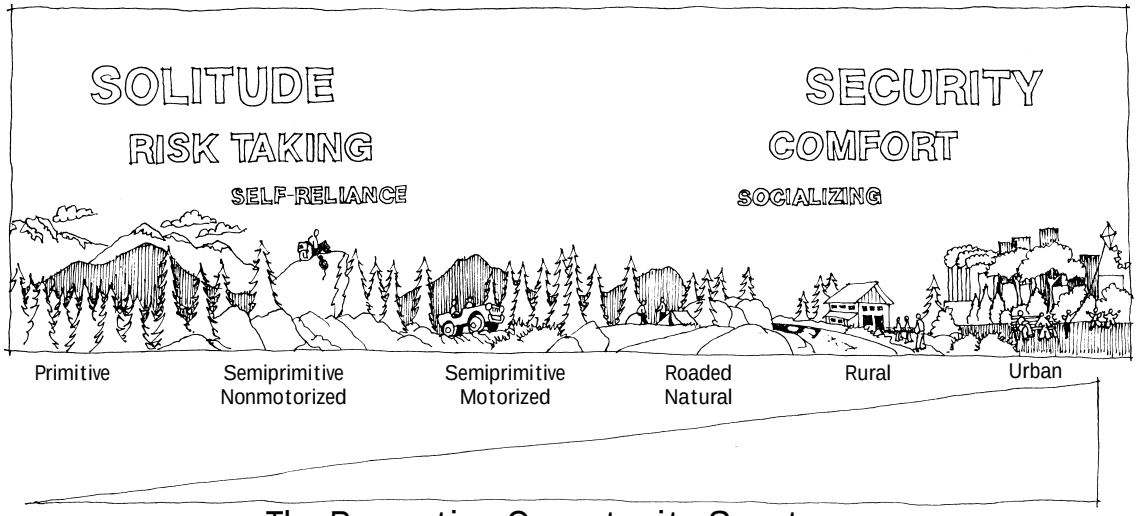
Part 1: Principles Common to All Provinces

The charettes revealed characteristics shared by all eight provinces. This section includes a series of universal principles that apply in the following areas of design:

- Recreation Opportunity Spectrum (ROS)—an inventory and management tool for recreation settings.
- Site planning—the arrangement of buildings and parking within the landscape.
- Forest Service image and identity—signs, kiosks, and information boards.
- Sustainability—the creation of healthy built environments by minimizing the use of resources and conserving ecosystems.
- Structures—common principles, such as massing and scale, materials, and colors, for structures from offices to picnic shelters.
- Urban settings and townscapes—design, siting, and reuse of existing buildings.

RECREATION OPPORTUNITY SPECTRUM

The ROS system is an inventory and management tool used by the Forest Service to assist in providing lands for recreation use. A premise of ROS is that people expect and seek variety in forest settings. For example, backcountry campers are not looking for highly developed facilities such as roads, lighted areas, picnic tables, or flush toilets; they seek solitude and hope to find few reminders of civilization. Recreation vehicle campers and car campers, on the other hand, often expect easy access and developed facilities offering comfort, security, and social opportunities.



The Recreation Opportunity Spectrum

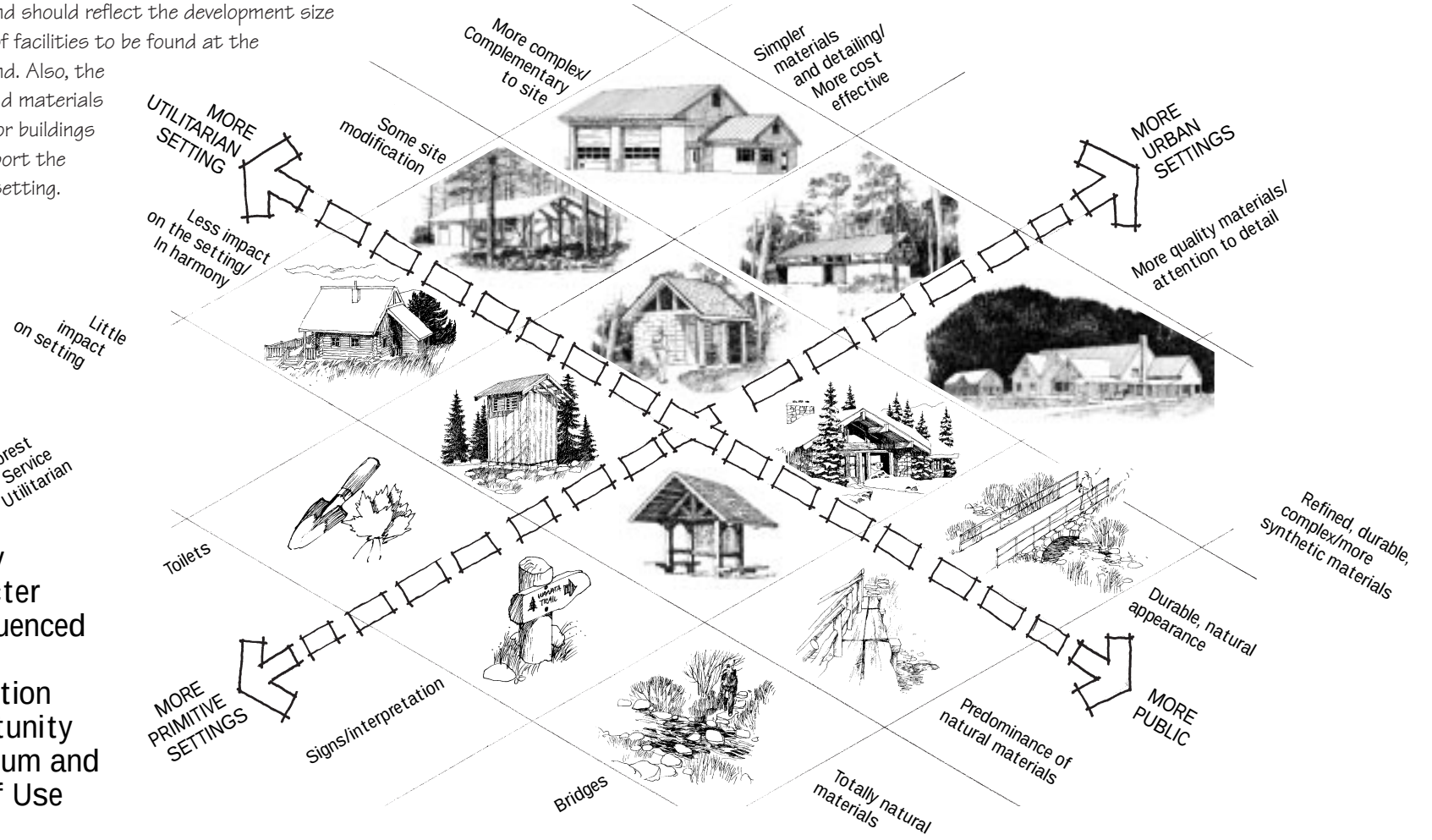
The figure above illustrates the six ROS classes reflecting the range of possible recreation settings. The Forest Service strives to provide and maintain the range of settings from roaded natural through primitive to meet the expectations and desires of visitors.

ROS classifications help determine acceptable development for each specific site. A combination of the following factors determines the ROS class for an area:

- Remoteness, including distance from roads and settlements.
- Degree of naturalness, based upon the level of human modification to the landscape.
- Social setting, based upon the number of encounters with other people experienced in a typical day.
- Managerial setting or degree of visitor controls evident.

To maintain a setting's integrity while creating a satisfying visitor experience, these factors must be consistent within a setting. For example, the width and surface of an access road that leads to a campground should reflect the development size and type of facilities to be found at the campground. Also, the utilities and materials selected for buildings must support the assigned setting.

The ROS does not apply to recreation facilities alone, but to all types of Forest Service facilities from public to nonpublic to utilitarian. The following graphic illustrates the system of appropriate structures and uses and how they fit into the ROS settings.

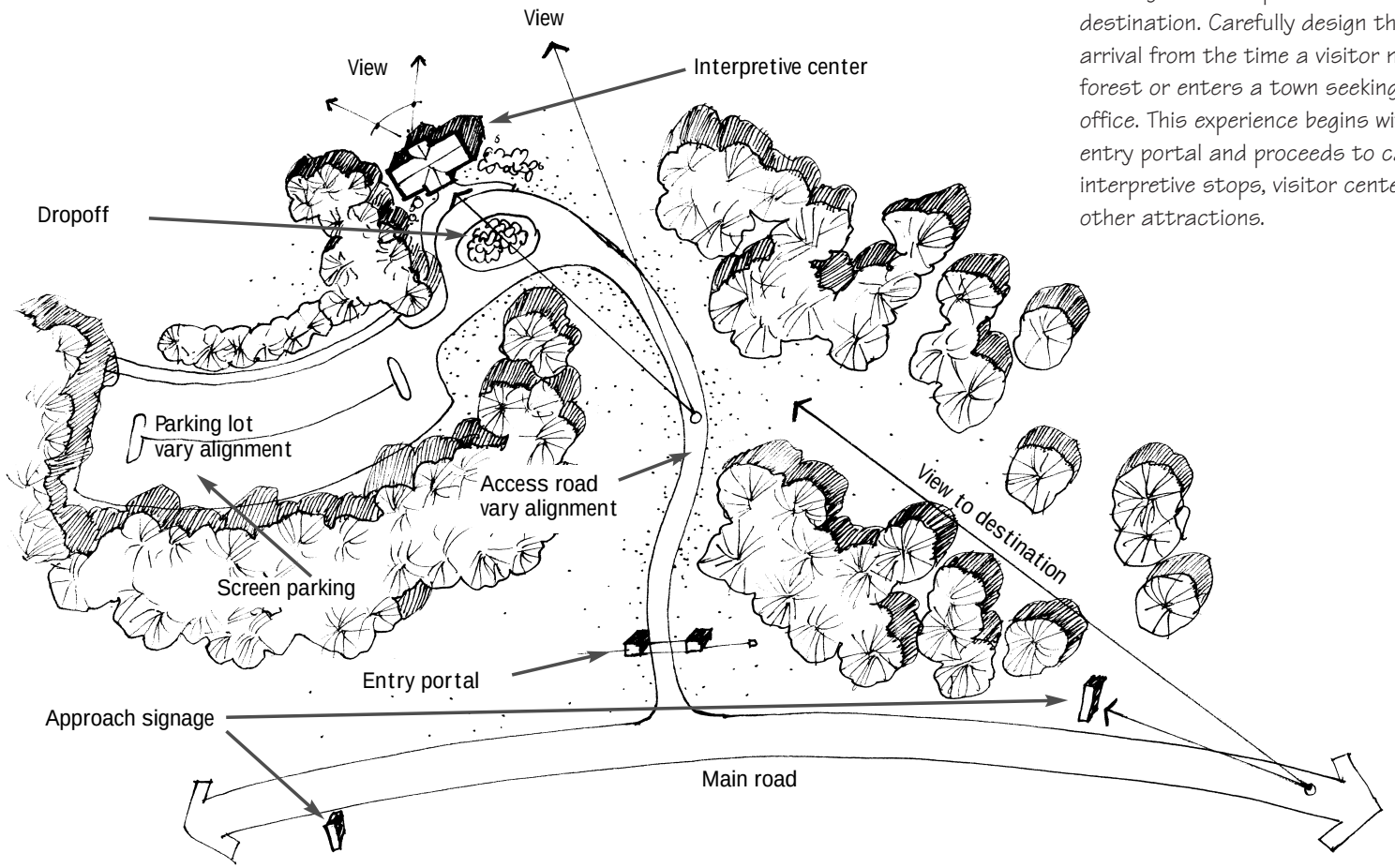


Facility Character as Influenced by the Recreation Opportunity Spectrum and Type of Use

SITE PLANNING

Visitors to national forests and related facilities need a clear idea of where they are heading, where to park, and where to enter their destination. Carefully design this sequence of arrival from the time a visitor nears a national forest or enters a town seeking a Forest Service office. This experience begins with a well-designed entry portal and proceeds to campgrounds, interpretive stops, visitor centers, offices, and other attractions.

The Sequential Entry Experience

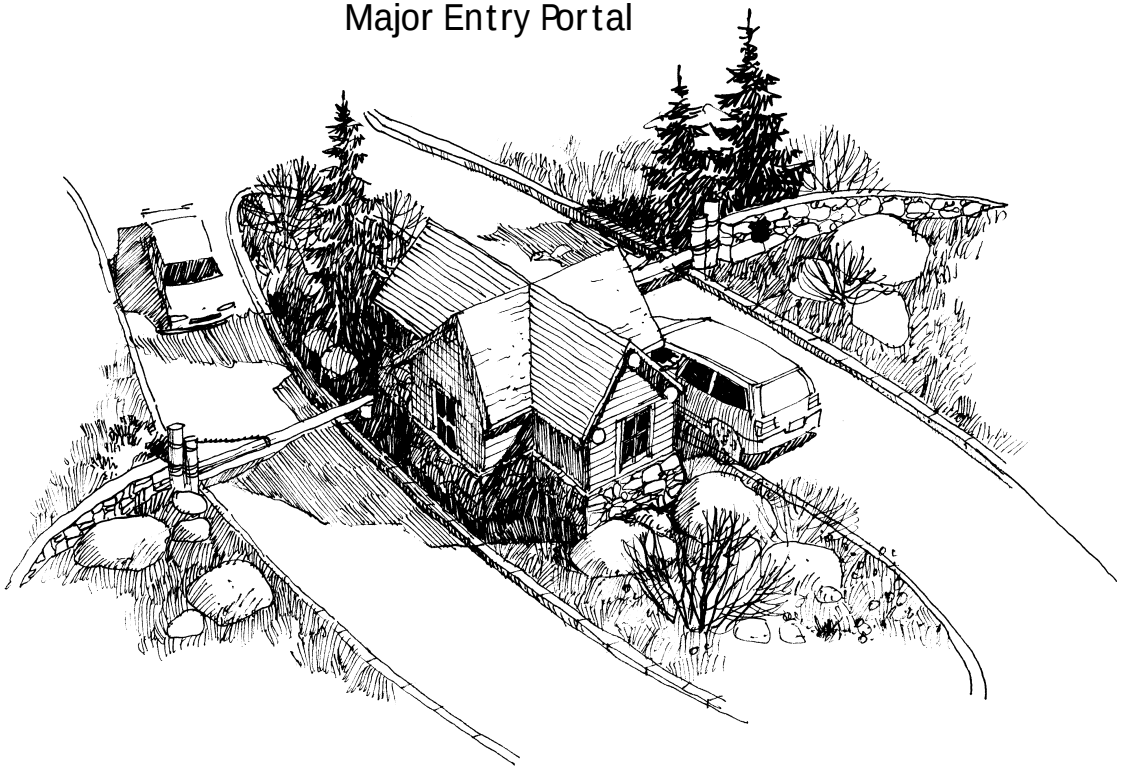


Portals and Entrance Stations

Entry portals are the "front door" to national forest sites. Before visitors reach this forest gateway, they should receive clear direction from well-placed signs on the main highway. The entry road should include appropriate traffic controls (such as a light or turn lane) so visitors can enter and exit with safety and convenience.

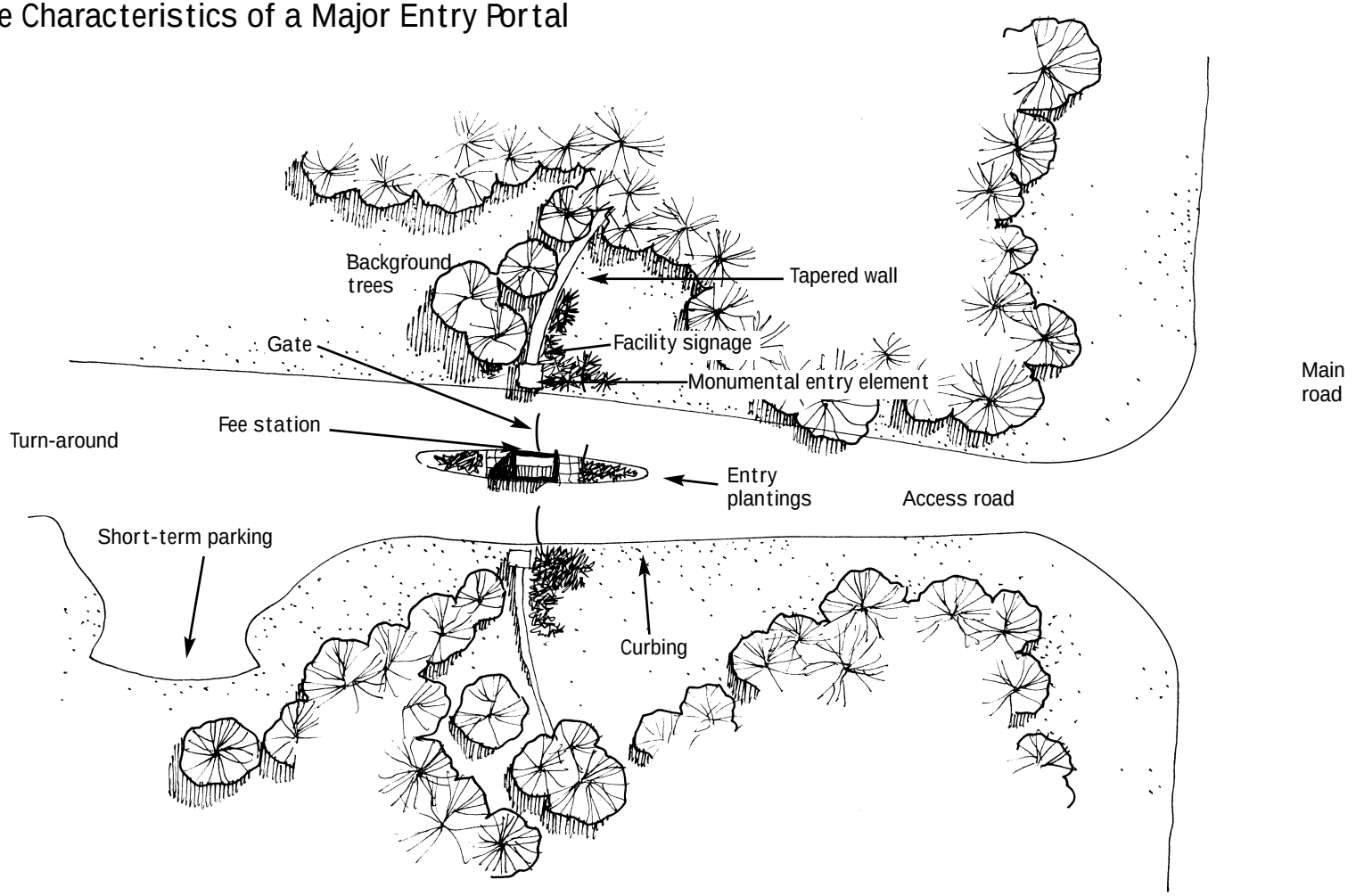
- When possible, place the portal near a natural landmark, such as a rock outcrop, specimen tree, or the mouth of a canyon.
- If there is no natural feature available, bracket the station with "embracing elements," such as a curving wall, fence, or planting.
- Place the portal entry station, when provided, in an attractively landscaped island in the middle of a road section outfitted with curb cuts.
- When a portal entry station is provided, place a turnaround and short-term parking area adequate for all kinds of vehicles just beyond the entry station.
- When access control is needed, provide an operable gate.
- Orchestrate the "entry experience" so that visitors can find their way and will be enticed to explore the facilities and landscape.
- Locate the approach road or the destination, if it is a building or other constructed feature, so that visitors may catch glimpses of their destination as they approach.

Major Entry Portal



- Place good directional signs to help visitors find the access road or approach road.
- When possible, create landscape openings to frame the view of the facility or attraction for approaching visitors.
- To preserve vegetation and create vistas, align the access road and parking with natural topography.
- Identify each segment in this entry sequence through tasteful use of the Forest Service shield and the family of signs.

Positive Characteristics of a Major Entry Portal



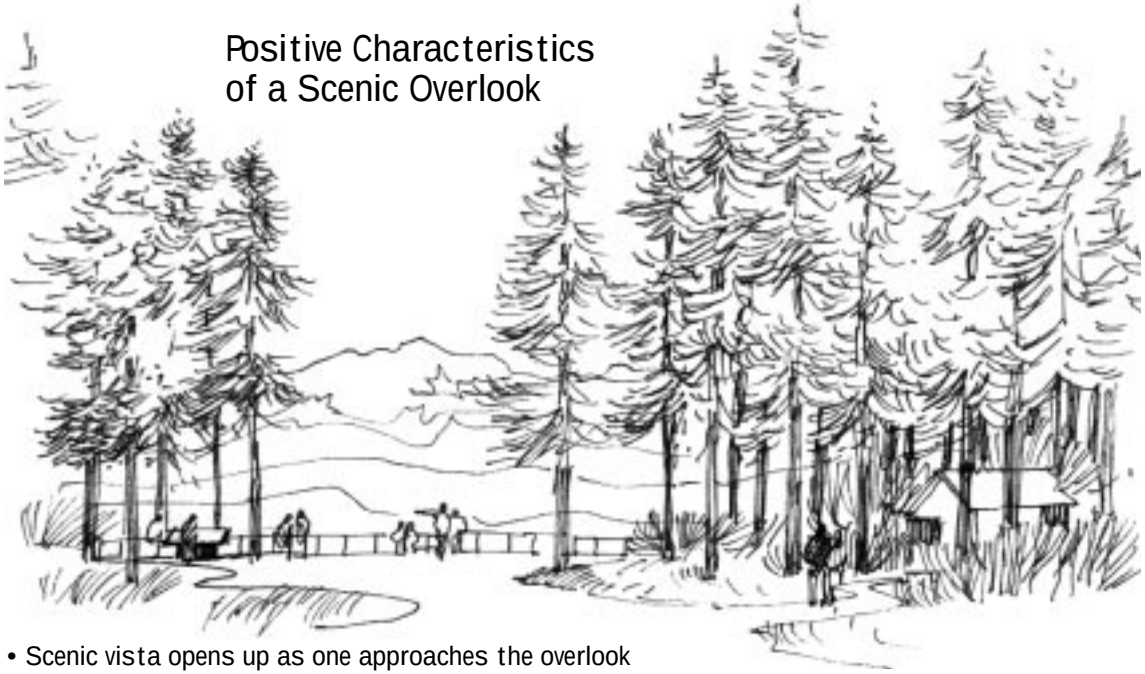
Parking

- Locate parking away from the direct line of sight for the attraction, whether it is a facility or natural feature.
- Provide adequate parking for normal demand.
- Place parking conveniently close to facilities.
- Separate staff parking from visitor parking.
- Provide adequate lighting when needed.
- Provide parking for all potential visitors, including persons with disabilities.
- Provide parking for all potential vehicle types, from bicycles to large recreation vehicles (RV's).
- Provide parking at all locations, from offices to interpretive rest stops, for all potential visitors and vehicles.
- Provide one-way traffic flow and a single entry/exit when possible.
- Provide short-term parking for deliveries, trash removal, and so forth.
- When possible, place a convenient vehicle dropoff point from which visitors can see the main parking lot.
- Use vegetation to screen parking, as well as dumpsters and other utilitarian features, from the main road.

Universal Design

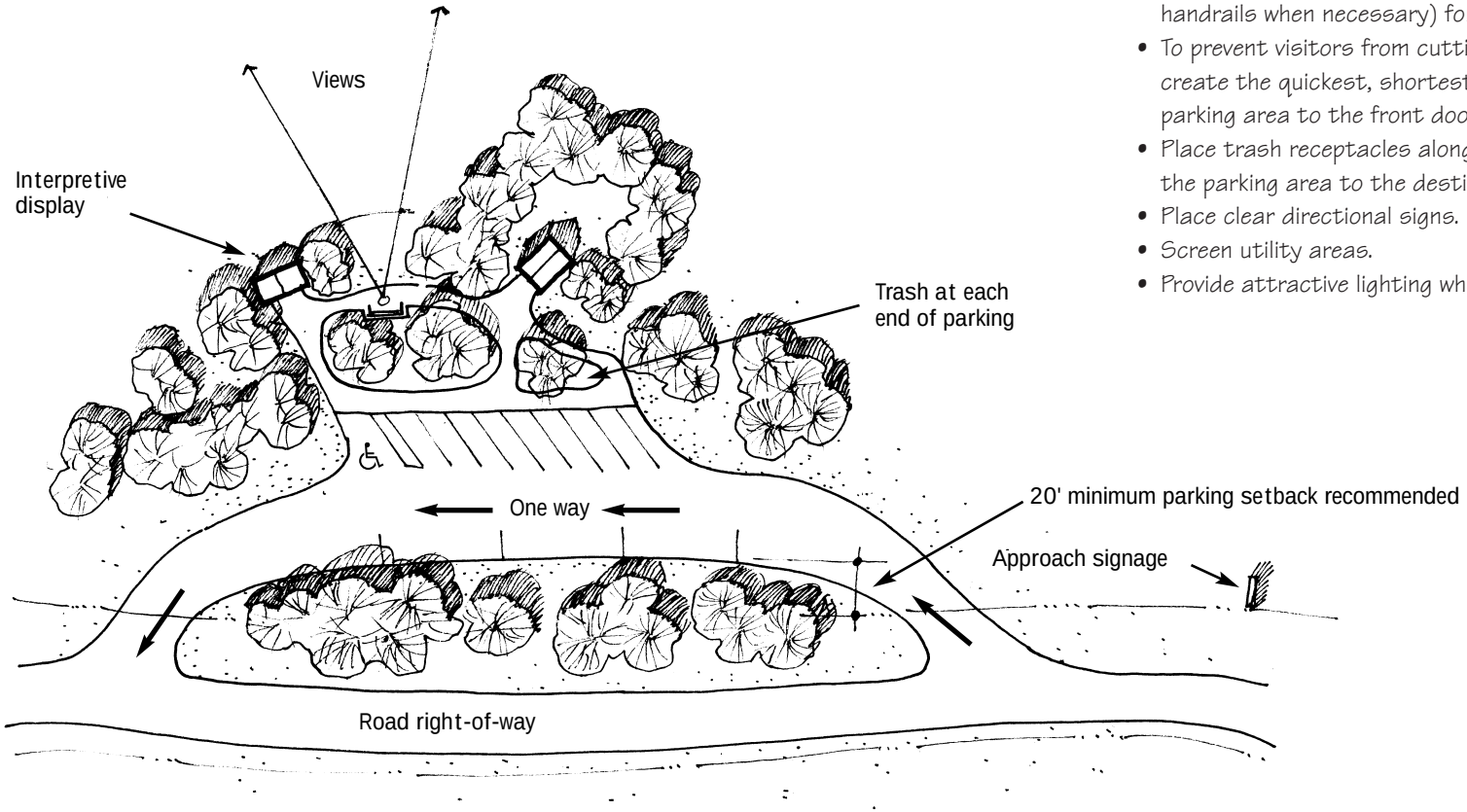
Implementation of universal design principles ensures access for all people, including persons with disabilities, to workplaces and administrative programs and offers access to diverse recreation opportunities. Universal design allows for integration, choice, and dignity for all users.

- Incorporate universal design principles to accommodate the broadest possible spectrum of people, regardless of ability, at recreation and administration facilities.
- Apply the most up-to-date standards, currently the Uniform Federal Accessibility Standards (UFAS) and the Americans with Disabilities Act Accessibility Guidelines (ADAAG).



- Scenic vista opens up as one approaches the overlook
- Facilities & improvements are subordinate to landscape features
- Buildings have been placed away from views

Positive Characteristics of a Small Interpretive Site



Pedestrian Circulation

Once they leave their vehicles, visitors should be welcomed with convenient, safe, and attractive walkways and circulation areas:

- *Ensure that visitors can safely walk from vehicles to pathways to destinations.*
- *If there are curbs, provide curb cuts (and handrails when necessary) for universal access.*
- *To prevent visitors from cutting new paths, create the quickest, shortest walk from the parking area to the front door or destination.*
- *Place trash receptacles along the path from the parking area to the destination.*
- *Place clear directional signs.*
- *Screen utility areas.*
- *Provide attractive lighting when needed.*

FOREST SERVICE IMAGE AND IDENTITY

See the section on site planning for additional design principles related to Forest Service image and identity in all provinces.

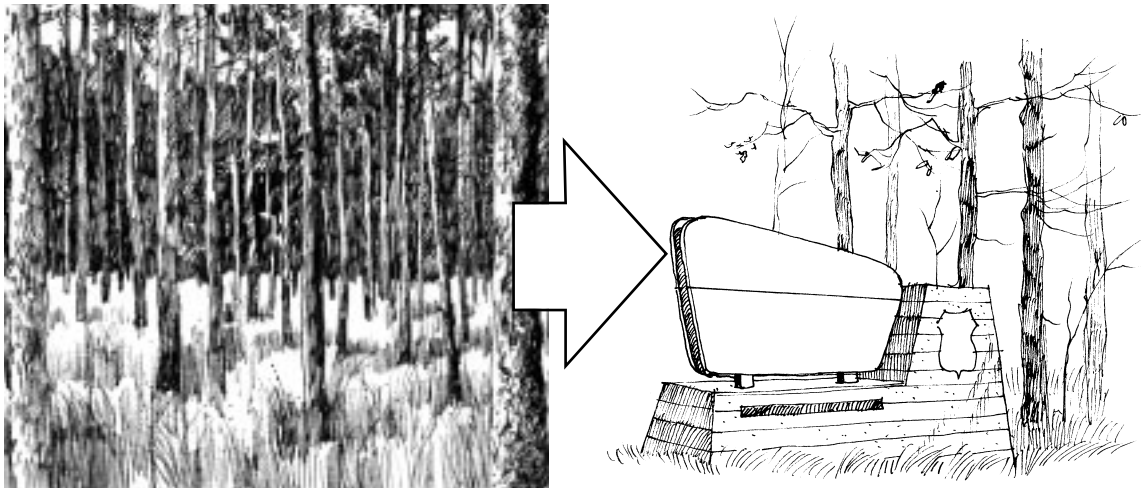
SIGNS

Like any other built element, a sign should complement the natural and cultural context. The signs themselves must follow the Forest Service Sign and Poster Guidelines for the Forest Service, Engineering Management (EM) Series publication (EM-7100-15). Within the standards of the publication, the sign and its supporting base should adhere to its province's guidelines for massing, scale, material, color, and sustainability.

For example, a base of large natural timbers and massive boulders might be used to support an entry sign situated within the massive trees of the North Pacific province.

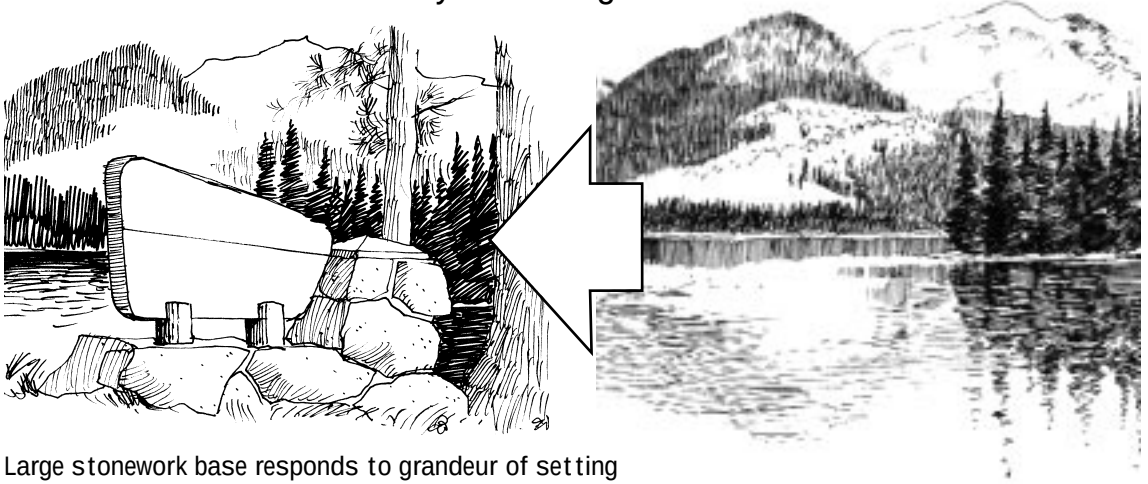
Conversely, more delicate, dimensional (machined) materials, such as four-by-four wood posts and board-formed concrete might be used as the base for an entry sign within the more slender vegetation of the Southeast Coastal province.

The Forest Service shield is a powerful and widely recognized symbol of the agency and its values. To help establish identity, place the shield as an emblem and icon in key locations. Guidance for use of the shield can be found in FSM 7160.34 and in EM-7100-15.2.6.



Narrow, slatted wood base responds to small scale of tree boles

Positive Characteristics of Entry Portal Sign Bases



Large stonework base responds to grandeur of setting

In addition:

- Highlight the Forest Service image through signs and inviting building entries.
- Incorporate the main entry sign or monument marker so that it makes a statement about the character of the place.
- In locations with distinctive natural features, integrate sign elements into the setting by using complementary materials, such as local stone or timbers.
- Locate signs to support, and not obstruct, the interpretation of the natural resource.
- In unique areas, consider using site-specific, handcrafted details to create a high-quality identity.
- Place highway signs to direct visitors to Forest Service facilities.

Kiosks and Information Boards

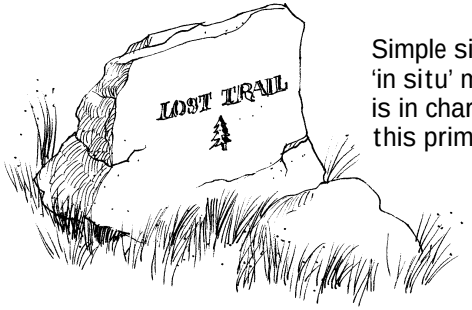
Kiosks and information boards should be carefully designed to meet the Forest Service's graphic standards. Kiosks should provide shelter from the weather. A useful kiosk or information board may include:

- Map with proper visitor orientation.
- Location of recreation areas.
- Facilities available within the area.
- Emergency phone numbers.
- Permit requirements.
- Address and phone number of the nearest Forest Service office.

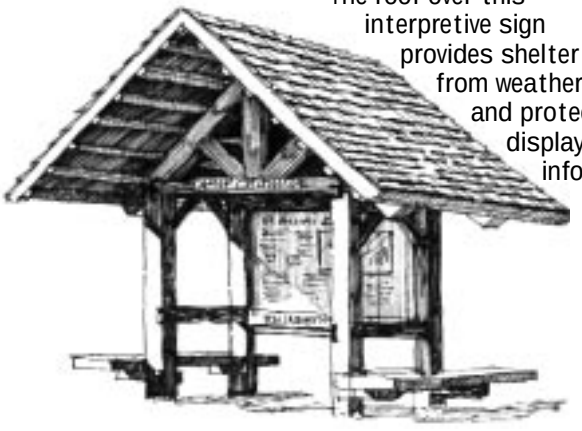
Positive Characteristics of Signs

Wide and appropriate use of the Forest Service shield helps establish the agency's presence and identity

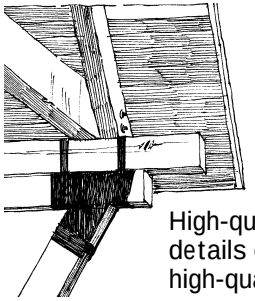
The low-angled mounting of this interpretive sign does not block the view and reduces sun glare



Simple sign using 'in situ' material is in character on this primitive trail



The roof over this interpretive sign provides shelter from weather and protects displays and information



High-quality crafted details create a high-quality image

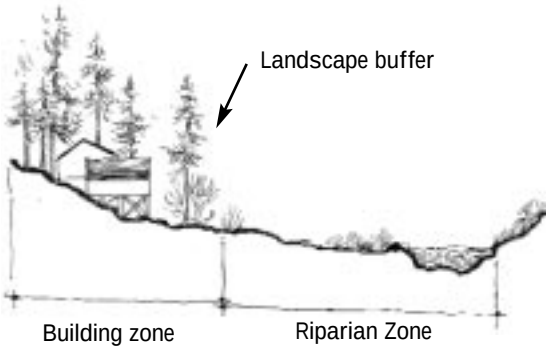
SUSTAINABILITY

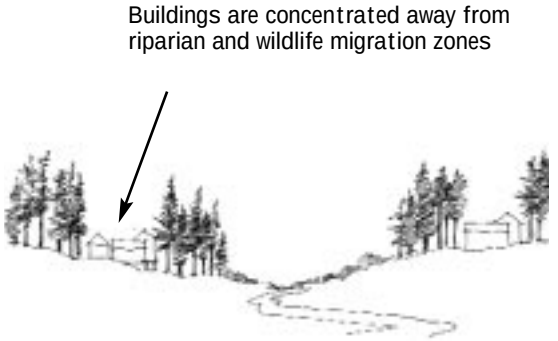
Sustainability is an across-the-board stewardship strategy that begins by considering whether a new facility is truly needed. Sustainability starts with site planning, continues with building design and materials selection, and is finally achieved through the life cycle of a structure. It considers energy conservation at every level, from the energy required to transport materials to the energy consumed by heating, cooling, lighting, and maintaining a structure.

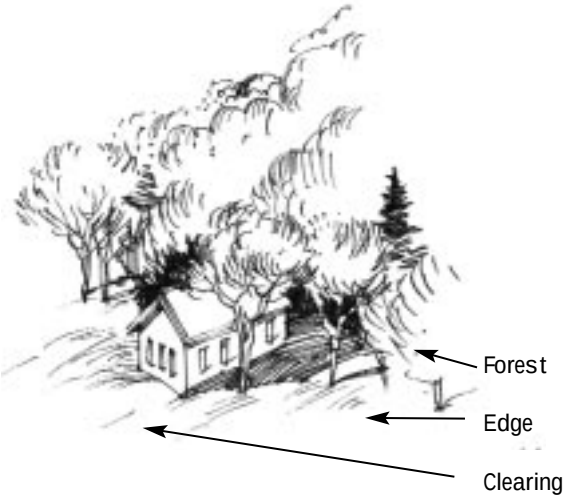
"Common sense" and "low-tech" are frequently the most sustainable solutions. For example, designing a building with well-placed windows that light offices and other workspaces makes "daylighting" an alternative to electric lights for daytime use.

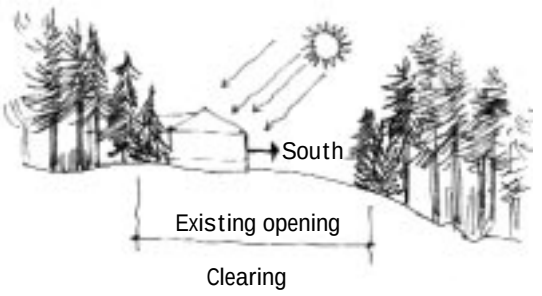
Buildings that are healthy for the environment can be healthy for people as well. In some climates, buildings designed for daylighting and natural ventilation may reduce energy use while exposing people to beneficial natural light and fresh air.

Sustainable measures that apply everywhere include landscape planning, energy conservation, water conservation, and recycling.





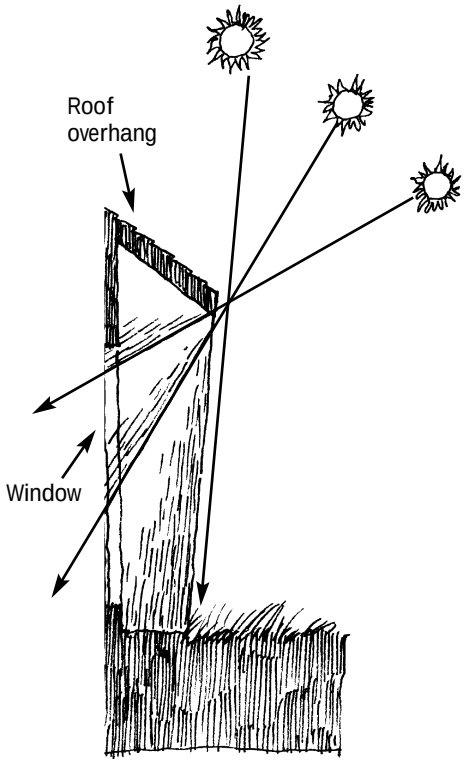




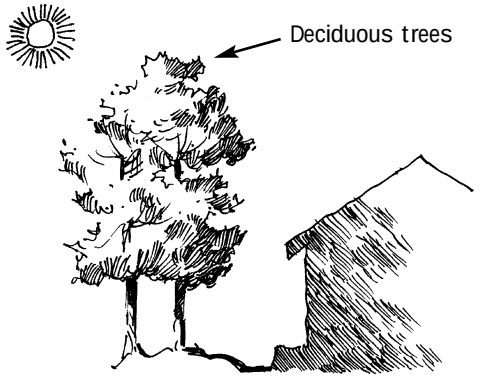
Landscape Planning

- Minimize site disturbance and surface grading by following the contours of the land and by locating facilities near existing roads and utilities.
- Minimize clearing of native vegetation.
- Minimize construction of new roads and parking.
- Avoid building in sensitive wildlife or riparian areas.
- Consider climate, solar orientation, and prevailing winds when siting buildings.
- Consider wildfire potential when setting clearing limits around buildings and when selecting vegetation for planting.
- Landscape with native plants to reduce maintenance while enhancing wildlife habitat.
- Minimize the use of irrigation systems. Where needed, use drip or other point-of-use irrigation systems and consider temporary systems to establish plants only.
- Where landscape plants must be watered, grade surface terrain to harvest runoff.

Building Features and Vegetation Can Radically Reduce Energy Costs



Length and placement of a fixed roof overhang determines amount of natural light entering a building at different seasons or times of day



Locating deciduous trees on the south side of a building will help reduce summer solar gain while allowing solar heating in the winter

Energy Conservation

- Introduce daylight into interior spaces through careful placement of large, high windows and clerestory windows for balanced light.
- In appropriate settings, use thick, massive walls such as masonry, earth walls, and straw bales designed at the correct thermal mass to retain and release heat.
- Insulate roofs to maintain desired interior temperature.
- Locate mechanical systems centrally for efficient distribution of heat, cooling, and power.
- In mild climates, consider using operable windows and other measures to reduce the need for mechanical ventilation.
- Consider ground-coupled heat pumps, passive solar, and other energy-saving heating techniques.

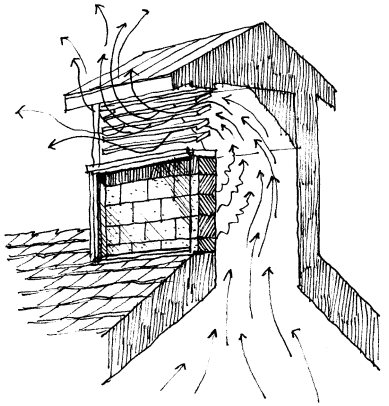
Water Conservation

- Consider constructed wetlands, sand filters, and other alternatives to mechanical systems for sewage treatment.
- Install water-conserving fixtures.
- Conserve water through such strategies as water harvesting with cisterns, xeriscaping, and graywater recycling.
- Install porous paving to minimize erosion and to "recharge" the groundwater.

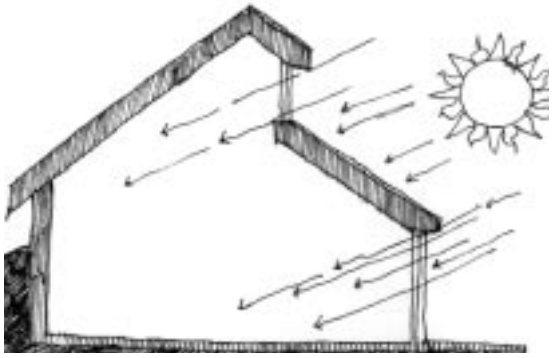
Recycling

- Rather than building anew, recycle or adaptively reuse a building for a new purpose.
- Design flexible interiors that can be converted to other uses.
- Encourage visitor and employee recycling through well-placed and marked containers and awareness programs.
- Seek building materials with high recycled content and low "embodied energy."

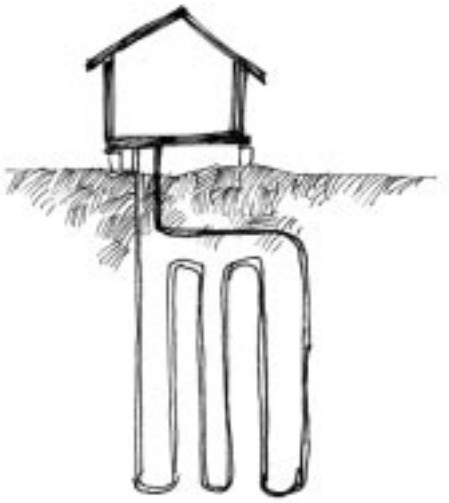
Building Features and Vegetation Can Radically Reduce Energy Costs



A solar chimney may be used when heat gain is excessive



Window location and size influence solar heat gain and daylighting



A ground-coupled heat pump may be installed to drastically reduce a building's operation costs

STRUCTURES

See the section on sustainability for additional design principles common to structures in all provinces.

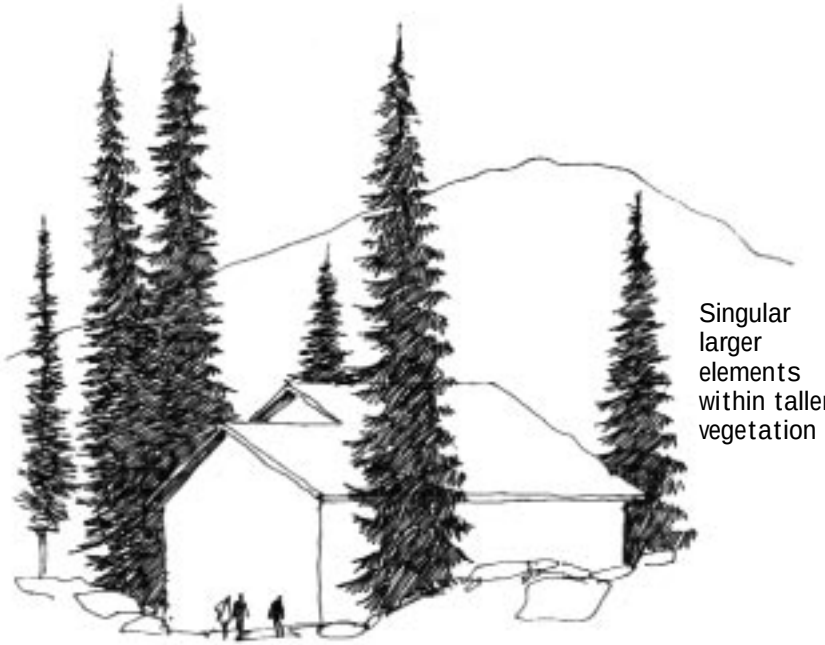
Building Scale and Massing

The massing and scale of structures should remain in harmony with the immediate natural setting. For example, buildings in grand mountain settings should be overscaled with large building materials such as boulders, timbers, and larger-than-typical doors and windows. In settings where buildings stand out from the landscape, such as open prairie and beachfronts, manipulate the massing and scale to reduce the apparent size of the structure and to relate it to the size of humans.

Materials

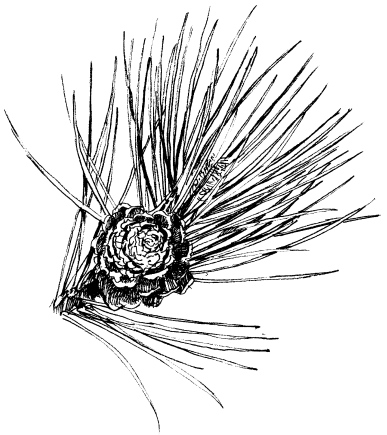
The ideal is to use natural building materials indigenous to a setting. However, some traditional or natural building materials may be too expensive or scarce to consider using today. Nevertheless, the careful selection of materials creates buildings that are more ecologically sound and a better match for particular settings.

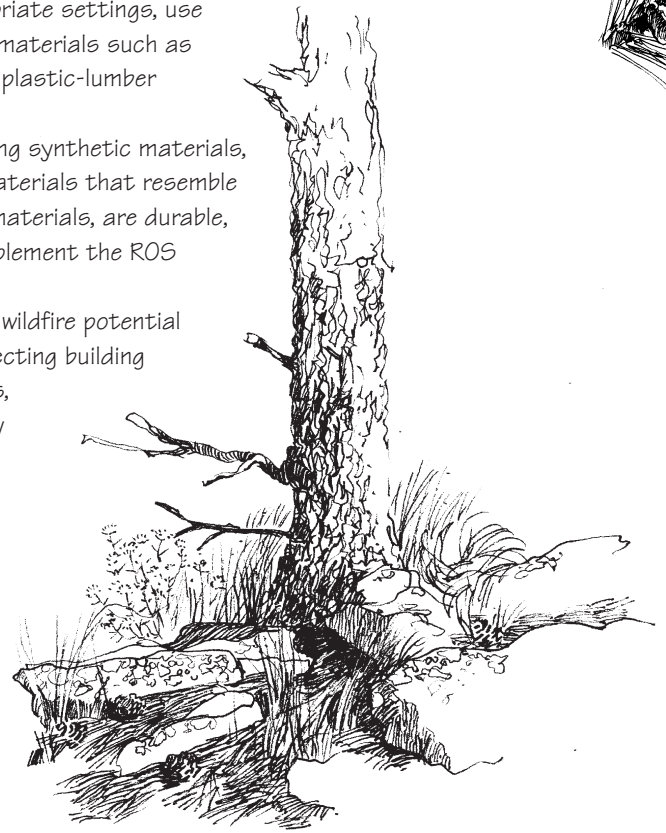
- Use natural, nontoxic building materials that require little maintenance.
- Celebrate, but do not overuse, wood—especially scarce species or sizes.



Buildings Should Be in Harmony With the Scale of Their Surroundings

- Use materials that are energy-efficient to produce and transport.
- Draw from local geology by using local stone as a primary material or as an inspiration for alternatives.
- Employ materials with integral colors that weather rather than materials that must be painted or stained.
- In appropriate settings, use recycled materials such as recycled, plastic-lumber decking.
- When using synthetic materials, select materials that resemble natural materials, are durable, and complement the ROS setting.
- Consider wildfire potential when selecting building materials, especially roofing.





Color

Standard color schemes should be developed for development complexes or special management areas within a national forest or grassland. Once established, the color scheme must be consistently applied throughout the complex or special area. Color schemes can be keyed to the landscape by:

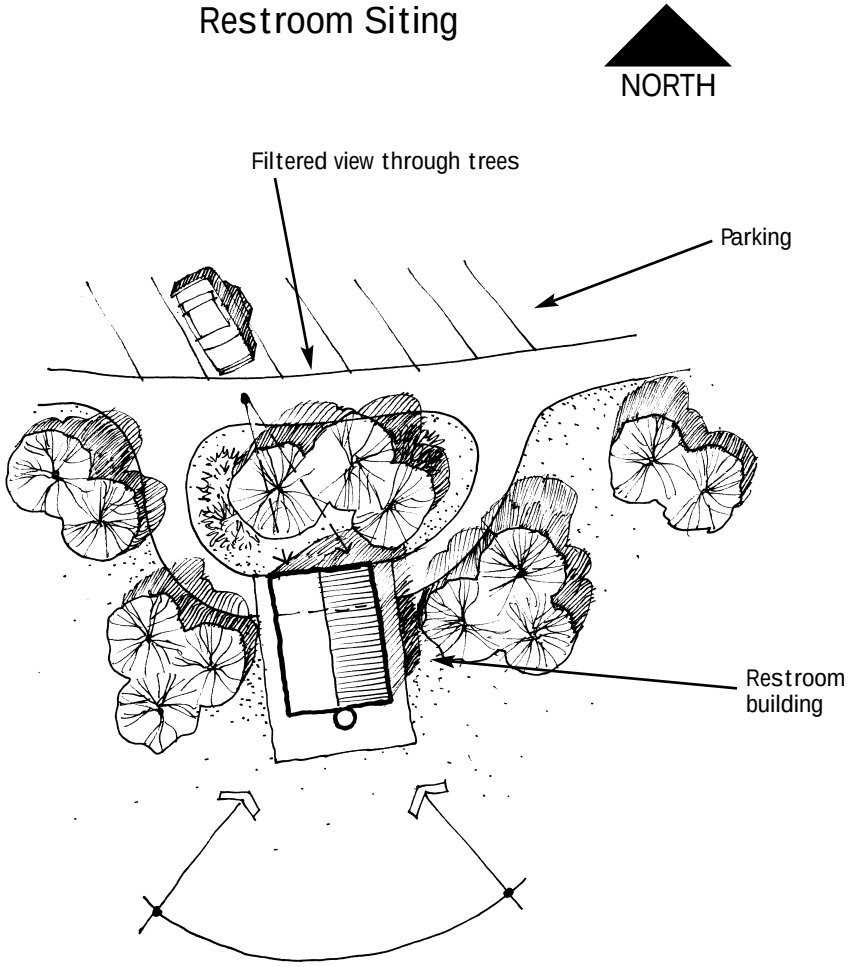
- Employing colors that complement local vegetation, soils, and rock outcrops.
- Integrating colors by using local, natural materials.
- Selecting shades for large planar surfaces that are slightly darker than the surrounding natural colors.

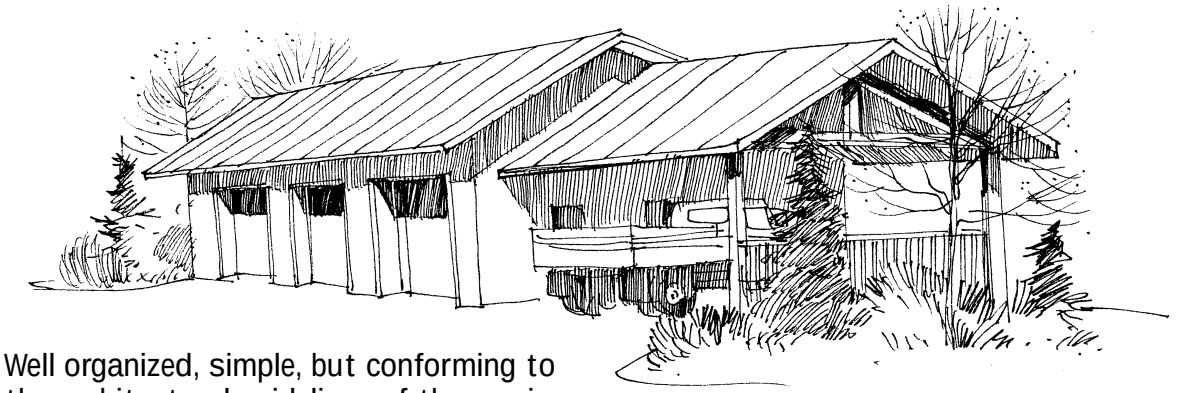
Note: On most National Forest System lands, deviating from standard colors of signs must be preapproved by the regional sign coordinator. See EM-7100-15 for descriptions of sign standards.

Toilet Buildings

As much as visitor centers, toilet buildings and restrooms provide the primary point of visitor contact. They leave a strong impression of the Forest Service's image.

- Design to standards suitable to the context, from highly detailed in highly developed and visible areas to more utilitarian in less developed and less visible areas.
- Use vegetation, rock outcrops, boulders, or screens to buffer views of more utilitarian structures.
- Place restrooms in locations convenient to parking areas and trailheads and within functional needs of service vehicles.
- Avoid placements that dominate or disrupt attractive views and vistas while allowing easy identification of location by visitors.
- Locate restrooms away from stream corridors, rivers, wetlands, or lakes in accordance with State water-quality standards.
- To optimize ventilation of vault toilet buildings, ensure an unobstructed airflow across the top of the vent pipe and ensure airflow is not restricted near the wall vent.
- Where possible, locate toilet buildings downwind of other developments and use areas.





Well organized, simple, but conforming to the architectural guidelines of the province

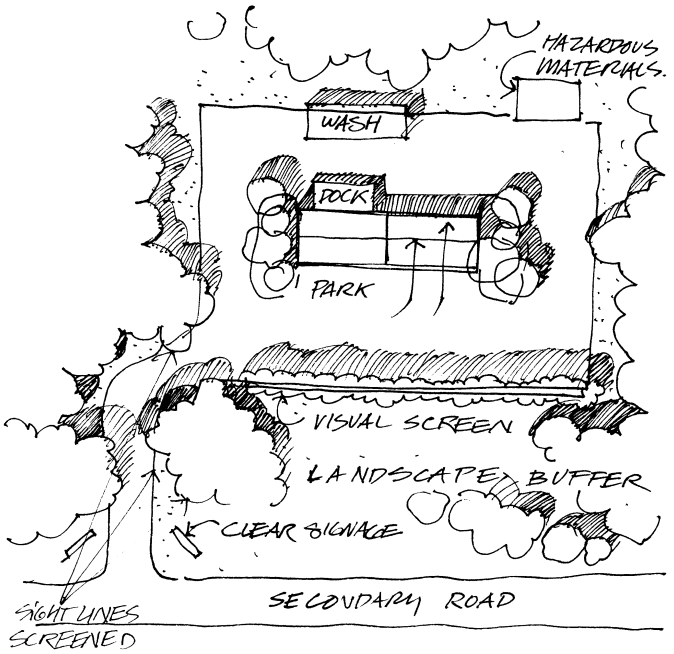
Maintenance building characteristics:

- Expressed building structure
- Building color blends with environmental/cultural context
- Inexpensive detail adds to building character
- Door setback increases shadows & visual character of building
- Roof extends to create shadow line
- Covered building entry
- Covered outdoor work area in appropriate climates
- Landscaping buffer from public areas

Utilitarian Structures

Though simpler and less expensive than public buildings, utilitarian structures—such as warehouses, barracks, and trash enclosures—should relate to the scale, rooflines, color, texture, and architectural detailing of visitor, recreation, and administration buildings in the same national forest.

- *Separate utility buildings from visitor facilities and public byways.*
- *Screen utilitarian structures from public view with native vegetation, landforms, and constructed screens.*
- *Provide high-quality workspaces by including daylighting, natural ventilation, and appealing outdoor spaces.*



Effective Building and Site Design Allows Use of Utilitarian Structures

Typical work center characteristics:

- Entry drive offset to minimize views to facility
- Landscape buffer
- Perimeter security fence as needed. Vines on fence for visual screening
- Adequate space provided for vehicle turning movements
- Required Clear Zone around hazardous materials

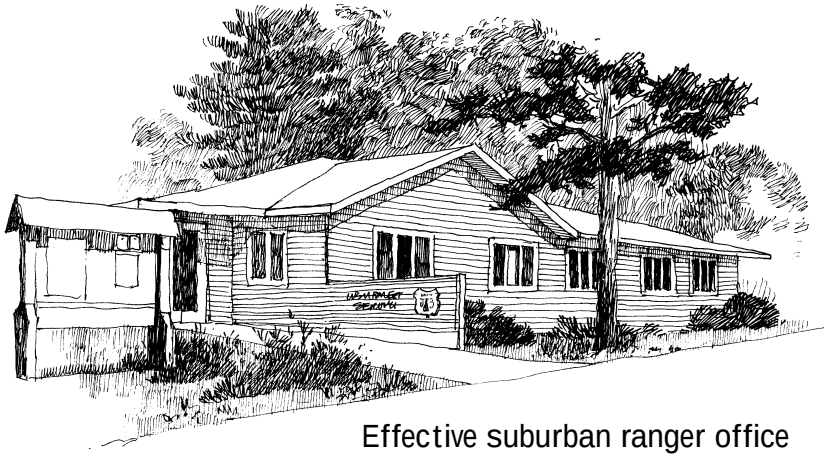
URBAN SETTINGS AND TOWNSCAPES

Forest Service administrative offices play a vital role in the life of rural communities. They should provide a visible, energizing presence on Main Street, a source of local pride, and a focus of orientation for visitors.

An office located in a town may be the first point of visitor contact. It should reflect a positive image for the entire Forest Service, as well as for the forest it serves. Forest Service offices must also fit within their urban context.

DESIGN

- Design within the context of each community so that Forest Service buildings convey a neighborly image.
- Ensure that entrances, reception areas, and other points of visitor contact emphasize the Forest Service's mission as well as landscape character.



Effective suburban ranger office

Is your ranger office in town projecting the image of your forest?

Employing the shield establishes identity

Siting

- Locate Forest Service administrative buildings where they are visible and accessible within a community.
- Avoid sites that are remote from the urban community served.
- When possible, consolidate multiple functions (and other Government services) and leases into one visible facility.
- Avoid lease locations that simply cannot provide an appropriate image for the Forest Service.

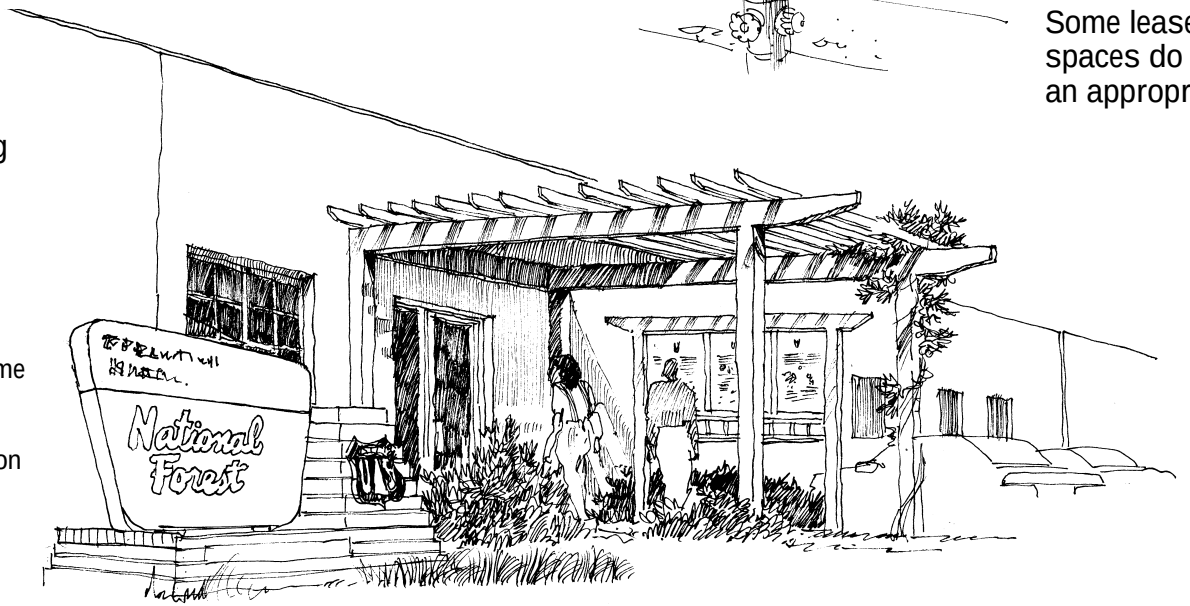
Reusing Existing Buildings

- Adapt and recycle historic buildings when practical.
- Retrofit existing buildings to express the Forest Service identity.

Some leased office spaces do not convey an appropriate image

Effective reuse of existing building characteristics:

- Office converted from an old bowling alley
- Clear Forest Service identification
- Inviting entry projection that relates to the built theme within the forest
- Opportunity to provide information and interpretation
- Natural landscaping



Part 2: Designing to the Scale of the Site and the Province

THE ISSUE OF SCALE: AN OVERVIEW

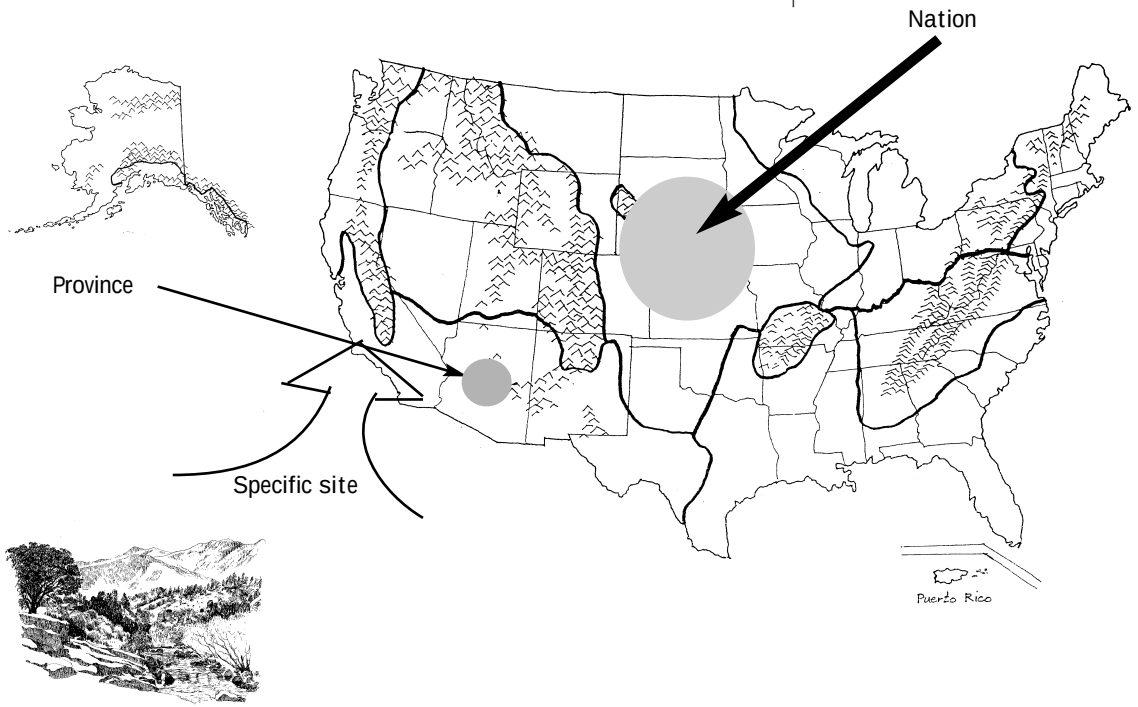
Ecological, cultural, and economic contexts occur at various scales. In terms of context for our built environment, we consider national, province, and site scales.

On the national scale, the Forest Service should be identified with quality facilities that reflect the agency's stewardship mission through integration with the setting, use of the Forest Service shield, and consistent application of the family of signs. Additionally, certain planning and design principles and elements are common to the built environment throughout the Nation. These common principles are described in the first section of chapter 4.

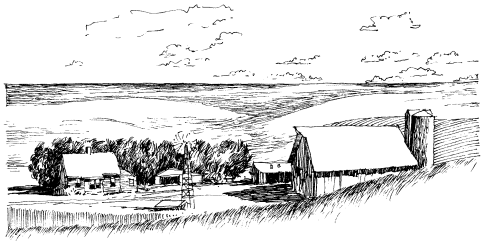
A Nation as large as the United States contains great variety within its ecological and cultural contexts, which has a direct effect on architectural character. Within this guide, the province is the main determinant of architectural character. A province combines common elements from the ecological and cultural contexts over large geographical areas. This begins to suggest sustainable strategies that work within a province. The remainder of this chapter includes extensive descriptions of the provinces and their architectural character.

Finally, the site scale will determine suitable architectural character types and sustainable strategies. For each project, tailor design elements such as colors and building materials to the specific site and to fit the local context, including the economic context. Other site considerations include ecology, vegetation, climate, and topography; the ROS setting; and the patterns of use by visitors, concessionaires, and employees.

In some cases, a special area or development complex may develop a specific architectural theme to ensure consistency throughout an area. The process of adapting individual projects to their context and developing architectural themes is described in chapter 5.



Rocky Mountain

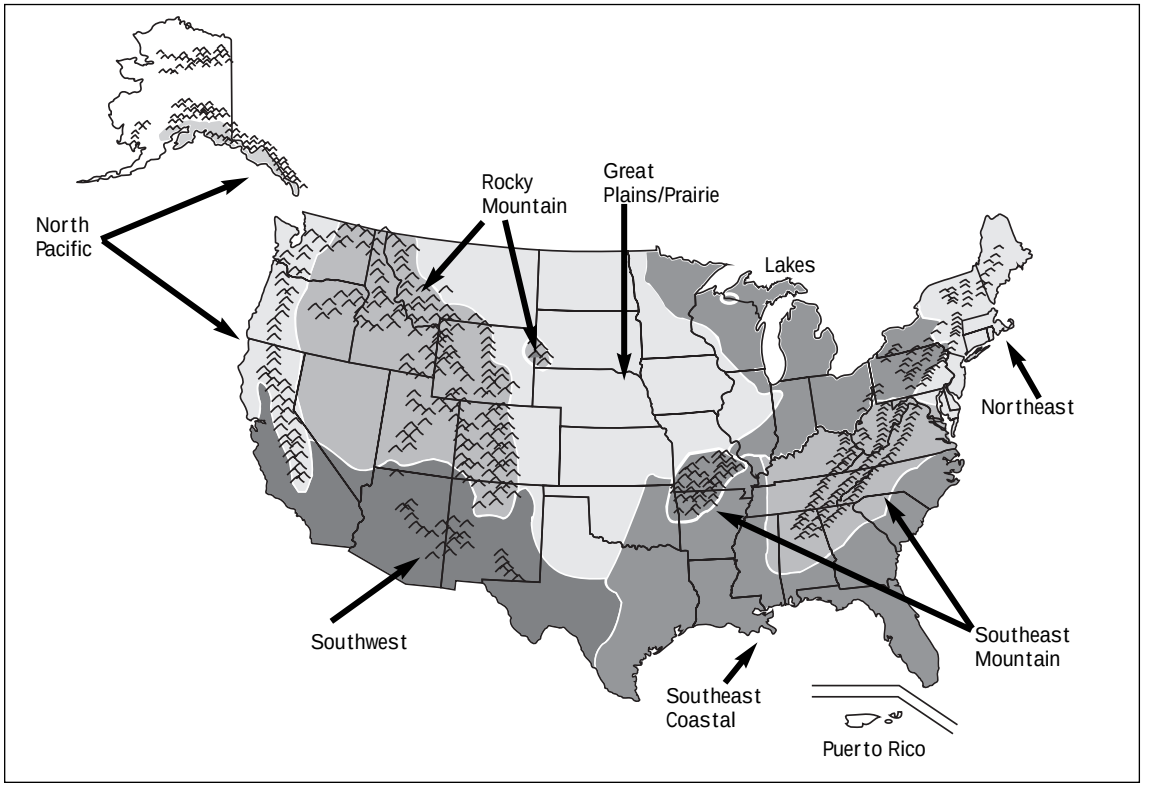


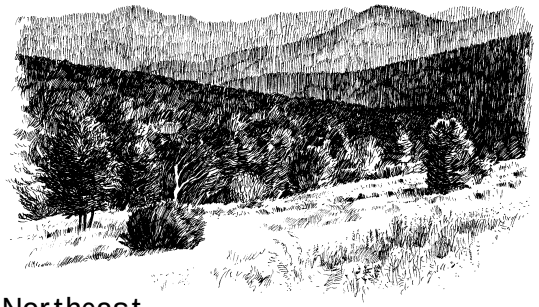
Great Plains/Prairie

Lakes

North Pacific

Southwest





Northeast

Southeast Mountain

Southeast Coastal

THE EIGHT PROVINCES: ARCHITECTURAL RESPONSES TO THE INFLUENCES OF ECOLOGY AND CULTURE

"My forest setting is unique" was a comment frequently heard at the charettes. This may be true regarding the individual sense of place for each forest and grassland. Yet the charettes revealed ecological and cultural patterns that cross forest boundaries.

To ensure sensitive responses to the contexts of ecology and culture, the guide addresses eight geographic areas known as provinces. For example, the Southeast Coastal Province is a lowland area with a hot climate and aristocratic cultural traditions. The Southeast Mountain Province includes characteristics such as higher elevations, a cooler climate, and cultural traditions formed by such "common" people as farmers and frontier families. Both contexts merit separate and individualized design responses.

The provinces are:

- Northeast Province, including the Middle Atlantic States and northern Appalachians into New England.
- Lakes Province, including the eastern prairies and the Great Lakes States.
- Southeast Coastal Province, including coastal areas of the Southeast and Gulf States and Puerto Rico.
- Southeast Mountain Province, including the southern Appalachian Mountains, the Ozarks, and the Ohio River Basin.
- Great Plains/Prairie Province.
- Rocky Mountain Province, including the northern Rockies, the Black Hills, and the Wasatch Range.
- North Pacific Province, including the Olympic Range, the Cascades Range, and Southeast and South Central Alaska.
- Southwest Province, including the southern Rockies, the Mohave and Sonoran deserts, and Southern California.

There may be anomalies within these broad provinces. In these cases, designers can consult the guidelines from an adjacent province to find characteristics that match a particular forest or grassland setting. Such variations must be documented in a Design Narrative.