

Sustainable Landscape Design



Landscape designs differ depending on how the landscape will be used. Although the principles are the same, a homeowner who wants an aesthetically pleasing, low-maintenance landscape would create a design very different than that of an avid gardener whose main purpose in life is to spend time in the garden.

This chapter is not meant to define the art of landscape design, but rather to help you take a realistic approach to landscape planning. Your end design should meet your needs and incorporate principles of sustainability into an evolving landscape.

Before beginning, consider what type of landscape fits your life style, the surrounding environment and the style of your home. Landscapes can be formal, informal, naturalistic, low-maintenance, water-wise or designed to attract wildlife. Urban gardeners with small spaces may decide to incorporate containers for flowers, vegetables and herbs. Sun and shade, as well as other growing factors such as rainfall, temperature and season length, will dictate which plants can be utilized. Avid gardeners are often plant collectors who consider where to put new plants as their garden develops.

Merely planting trees and shrubs is not landscaping. Designing a landscape gives you an opportunity to create habitats for people, plants and wildlife.

As you try to preserve clean air, clean water and landfill space, your challenge is to create a landscape that is both aesthetically pleasing and environmentally sound. A sustainable landscape can thrive with minimal inputs of labor, water, fertilizer and pesticides. Creating a sustainable landscape means working toward a thoughtful balance between resources used and results gained. By factoring in environmental considerations, you can create a pleasant place that



TOPICS IN THIS CHAPTER

- Planning
- Parts of a landscape
- Elements and principles of design
- Plant selection
- Drawing a landscape plan
- Renovating an established landscape
- Sustainable Sites Initiative
- Evaluating landscape sustainability
- Landscape design planning questionnaire

By Jan Powell McNeilan, Extension Agent, Portland Metro Counties; and Ann Marie VanDerZanden, Extension Master Gardener State Coordinator, Oregon State University.

Adapted by Julie Riley, Extension Faculty, Agriculture and Horticulture, Cooperative Extension Service, University of Alaska Fairbanks.

is part of an environmental solution rather than an environmental problem.

Planning

The smaller your house, grounds or budget, the greater the need for correct and complete planning. Every square foot of space and every dollar must produce maximum results. Plan for the best use of the site, the least environmental impact and minimum upkeep.

A master plan is essential to ensure that all work done on the property will blend into the desired final outcome. Keep in mind that landscape development can be a long-term process within the framework of your plan. There is no need to develop your entire lot at once. Completing the landscape over a 5-year period is a feasible approach. This time frame allows you to evaluate plants as they grow and mature and generally is more manageable financially than doing everything at once.

Earthwork, such as grading, may be necessary for a new home site. If you must have grading work done, consider ways to save topsoil and protect existing trees and vegetation from construction damage and soil compaction.

Site analysis

For a new landscape, a thorough site analysis can help you develop a plan to enhance and maintain your property's sustainability. It's also a useful first step in renovating and changing an existing landscape. See the "Landscape Design Planning Questionnaire" at the end of this chapter for ideas.

A site analysis will tell you what you have to work with. A thorough understanding of your site is important, because in a sustainable landscape, native and intro-

duced plants must be well suited to existing light, moisture and soil conditions.

Your site analysis also will help you make the best use of available space in the most attractive way possible, while at the same time considering the environmental impact of your landscape plan. Make the most of the site's natural features and advantages. Be sure to include structures such as fences, walls, patios or decks to enhance the human environment and make the landscape more enjoyable.

Finally, the site analysis will help you select plants that best fit your landscape's design and purpose.

Factors influencing landscape design

Property characteristics

In laying out a design, preserve all of your site's best natural features, such as mature trees, streams, ponds, rock outcroppings, good soil, turf and interesting variations in terrain. These natural elements affect the ease of construction and enhance landscape possibilities.

Carefully survey the area to determine whether site conditions are a problem or can be incorporated into your design. Examples of problems are thin, overcrowded trees or unstable slopes that may interfere with landscape construction. You also may have to contend with *microclimates* such as windy areas, low places with cold air pockets, or areas with poor soil and inadequate water drainage.

Changes in elevation can add interest and variety to home landscapes. The character of the land — its hills, slopes and trees — should determine the basic landscape pattern. A hilly, wooded lot lends itself to an informal or natural design, with large areas left in their natural state. In such a setting, large trees can be retained. Protect native plantings whenever possible.



See Chapter 11,
Woody Landscape
Plants.

Although natural slope variations are an asset, avoid creating too many artificially. Avoid excessive use of terraces or retaining walls. If these features are necessary to facilitate construction or control water drainage, design them to blend into the natural terrain.

Neighborhood sights and sounds

Keep good views open and screen out those that are undesirable. Often, a well-placed shrub or two provides necessary screening. Reducing sound from a busy road may require creating a large berm or dense plantings to separate traffic noise from your living space.

Climate

Climate includes sunlight, all forms of precipitation, wind and temperature. In the case of a new home, these factors affect how the house is placed on the lot, how the land is used and what is planted. Don't fight the climate; capitalize on its advantages. When positioning a deck, think of wind patterns, where the sun will be when you're most likely to use the deck and whether you'd like a tree to provide shade on warm days. Plant so that the winter scene is enjoyed from the inside. For example, evergreens and hedges are picturesque when

covered with snow, ice or rain droplets.

Sun and shade patterns change depending on the time of day and season (Figure 1). The sun is higher and shadows are shorter in summer than in winter. Northern exposures receive the least light and therefore are coolest. But in Alaska, even the north side of the house receives some direct sunlight during the summer. East and west exposures receive more light; western exposures are warmer than eastern ones because they receive afternoon light. Southern exposures receive the most light and tend to be warmest.

The main rooms of a house should benefit from winter sun and summer breezes. You can control the amount of sunlight and shade by the location of buildings, fences and plants. You also can take advantage of shade created by structures or plants on your neighbors' property.

Trees have an especially strong effect on sunlight. When locating trees in your landscape design, consider keeping a sunny area for a vegetable garden, and think about how much light you'd like coming into the house. Deciduous trees (those that shed their leaves) shade the house in summer and admit sun in winter.

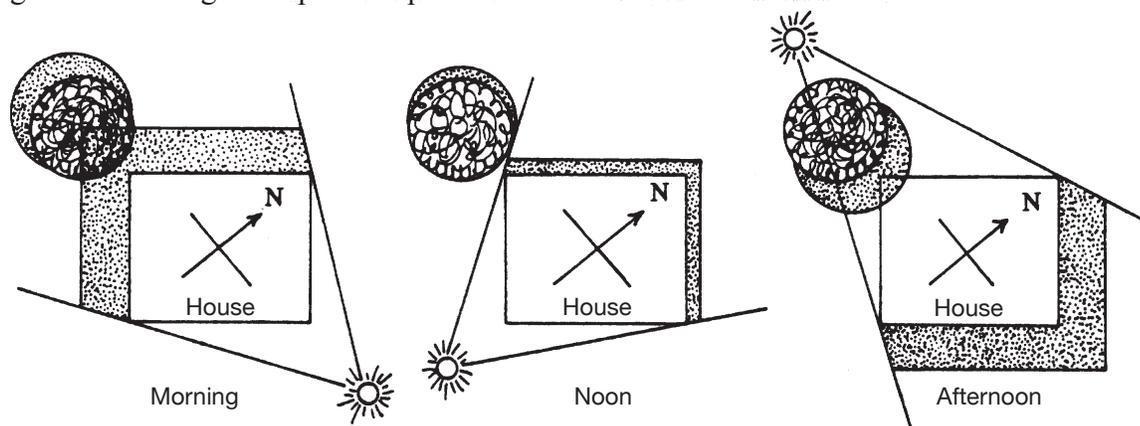


Figure 1.—Daily light pattern. Speckled areas indicate shade. In many locations in Alaska, even the north side of the house receives some direct light during the summer.



Figure 2.—Tree planted at a 45° angle from the corner of a house.

Plant trees at a 45° angle away from the corners of the house (Figure 2); when mature they will accent the building. Trees should not block views from windows. Remember that having too many trees shuts out sunlight and reduces air circulation. When renovating an old landscape, consider how light will change when plants or trees are removed.

Maintenance requirements

During the early design phase, decide how much time and energy you want to spend on maintenance. Some people enjoy puttering about the yard and may desire a high-maintenance design. Others, however, want a landscape that requires minimal maintenance. Generally, the simpler the landscape, the less there is to maintain.

A low-maintenance landscape is the goal of most homeowners. The following strategies will help you reduce maintenance requirements:

- Limit the size of the lawn.
- Use groundcovers, shredded bark, bark chips and other mulches for weed control.
- Use paving or gravel in heavily traveled areas. Provide mowing strips of brick or concrete for flower beds and shrub borders.
- Use fences, walls or informal plantings (instead of clipped formal hedges) for screening.

- Design raised flower beds for easy access and to help control weeds.
- Use native plant materials.
- Install an underground irrigation system if your area receives little summer rainfall.
- Use small flower beds. Use flowering trees and shrubs for additional color.
- Be selective when choosing plant materials. Compact varieties require less pruning; insect- and disease-resistant varieties require less spraying; and drought-tolerant plants require less water.
- Keep the design simple. Notice that low-maintenance practices often are sustainable landscape practices.

Family activities, growth and change

How your landscape will be used should be a determining factor in its design. Analyze your family activities and design a landscape that will mature with the family. Don't plan a static landscape; it will no longer work as your family's needs change.

Parts of a landscape

A landscape is made up of several parts. A few of these — private use areas, children's play areas, front yards, public areas and service and work areas — are discussed in this section.

Private use area

The private use area of a landscape is an important part of the American home. Few yards are too small not to have a private sitting area where family and guests can gather. Where possible, there should be easy access from the house to the outdoor area (Figure 3).

When designing private areas, consider home security. Motion sensor lights can

protect these areas at night, and pruning shrubs for openness and visibility can prevent them from being used for concealment during the day. Choose defensive plants that are thorny or difficult to walk through for vulnerable entry points to your property or home.

Consider the following guidelines when planning outdoor private living areas.

Privacy

Enclose the area from public view and nearby neighbors. Properly grouped shrubs and trees work well. For a small area, use a trellis, containers with vines or a fence. Screen the area from work areas such as clotheslines, woodpiles and garden sheds.

Year-round interest

Plants in the private use area should be varied and provide interest throughout the year, especially if the area is visible from the house. For winter interest, select shrubs and trees with colorful bark, evergreen foliage or colorful fruit. The rest of the year, use annuals, perennials, shrubs and trees to create interest. Take a seasonal inventory of your proposed plant list to make sure it includes year-round interest. Pools, stone steps, paving, walls, bird feeders and baths, and other architectural features do not change with the seasons, and they give interest and meaning throughout the year.

Climate control

Evergreen trees provide year-round screening and shade, while deciduous trees screen the area from hot summer sun but allow maximum winter sun for solar heat. Windbreaks reduce wind. An awning or trellis-type roof can protect against inclement weather. If space allows, a water feature

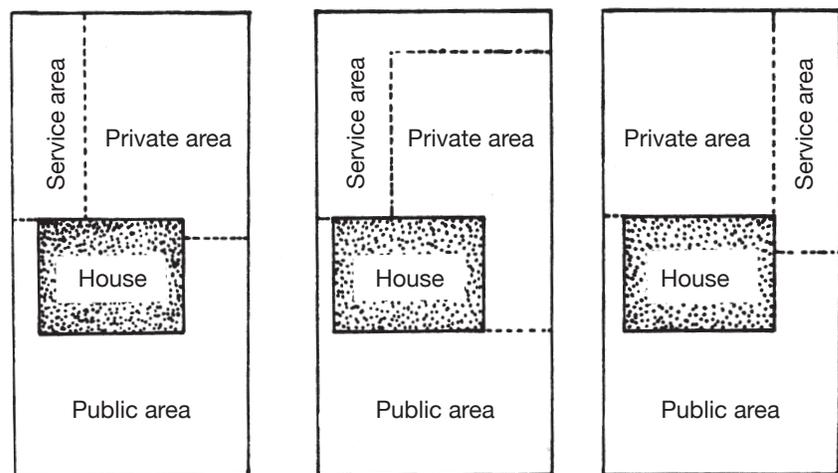


Figure 3.—Use areas in a landscape.

can add the relaxing sound of running water during summer and has the added benefit of attracting wildlife.

Deck or patio

The center of activity in the yard is often a space with garden or patio furniture and sometimes a grill or outdoor cooking area. It may be a porch, deck or patio next to the house. It may be decked, paved or in turf. Flagstone, brick, concrete blocks and concrete with redwood dividers are common surfaces.

The size of this area depends on its expected use and the type and amount of furniture desired. A area that is 10 feet by 10 feet holds four chairs and is about the minimum size for comfortably accommodating four people. Increase the size if you want space for more chairs or a picnic table.

Children's play area

Consider your children's ages and activities to determine the size and surface of the play area. For very young children, a small area enclosed by a fence near the kitchen or living area is desirable. As children grow up, you'll need to adjust the design to meet changing recreational needs.

Front yard

The area in front of homes traditionally has been left more or less open so passersby can view the home. On small lots, it has become increasingly popular to screen the front yard with fencing, shrubs or vertical plantings. Privacy may be desirable when a picture window faces the street or when the front yard is used for outdoor sitting. Where space is limited, a tall, attractive fence can provide privacy and a background for shrubs and smaller plants. Make sure to check subdivision covenants and city ordinances before erecting fences, sheds and home greenhouses.

Again, consider home security when designing your landscape. It may be appropriate to use fencing that provides a sense of privacy but can be seen through. Remember, a solid fence will cast shade. Plant materials that can be pruned for visibility are another option.

Public area

This is the area the public sees from the street. The landscape in this area should create a sense of spaciousness. If you want the front yard to be part of the public area, keep the lawn open and place shrubs to the sides of the house and in foundation plantings. When selecting shrubs to frame the front door, consider their texture, color, size and shape so they enhance the total effect but do not block doors or windows. Placing tall trees in the backyard and medium-size ones on the sides and in front is effective. Consider the mature size of trees before making your selection. Large trees can easily overpower a small house. The house should be the focal point of the view.

Service and work areas

An area screened from major views is needed for service and work areas. Examples include space for garbage cans and access to utility meters, tool storage, wood storage, compost piles, propagating structures, small greenhouses, kennels or clotheslines.

Elements and principles of design

There are no hard and fast rules for landscape design, because each landscape is a unique creation. However, certain design principles will help you create an aesthetically pleasing and useful landscape. These principles are:

- Simplicity
- Rhythm and line
- Balance
- Proportion
- Focal point

Simplicity

Simplicity is achieved when different parts of the design are grouped or arranged to appear as a single unit. For example, you can group plants of similar colors or textures, or mass three or more plants of the same species together.

Rhythm and line

Continuity within the landscape and integration of different elements into the design affect rhythm and line. Effective use of repetition can direct the eye or a person through the landscape and create a sense of unity among different landscape spaces.

Balance

The two common types of balance in landscapes are symmetrical and asymmetri-

cal. *Symmetrical* balance is most common in formal landscapes. It has an axis, and everything on one side is duplicated or mirrored on the other side (Figure 4a). *Asymmetrical* balance uses different objects on each side of the axis, but the end result still is a similar visual mass on either side (Figure 4b).

Proportion

This principle refers to the relationship between different elements within the landscape. The relationships to consider are:

- Plants to buildings
- Plants to other plants
- Plants to people

To achieve correct proportion, always create designs based on the mature height of plants. If your house has a tall set of steps leading up to the front door, place appropriately-sized plants along the stairway to make the house feel “grounded.”

Focal point

Focal points give the eye a place to rest when viewing the landscape as a whole. A focal point may be a plant specimen, garden accessory or water feature. The front door often is the focal point of the public use area; if so, design the landscape to enhance it. Visitors should be able to tell how to approach the front entrance.

Plant selection

This section discusses some of the factors involved in choosing the right plants for your landscape. For specifics on plant selection and care, see Chapter 10, *Annual and Perennial Flowers*; Chapter 11, *Woody Landscape Plants*; and Chapter 14, *Lawns*. Well-chosen plantings are necessary to achieve your desired landscape effect.

Thousands of varieties of trees, shrubs, vines and perennials are available, but remember: plants are not merely ornamental accessories. Their masses define space in the yard and, consequently, the silhouettes that produce garden design. Therefore, when selecting plants, consider both their cultural needs and aesthetic value.

The best advice in plant selection is to find the right plant for the right place. The U.S. Department of Agriculture (USDA) plant hardiness zones are a starting point since they are based on winter temperatures. In determining where a plant will survive, however, you need to consider other factors as well, including frost occurrence, seasonal rainfall distribution, soil characteristics, water availability and duration and intensity of light. Every plant tolerates a range of conditions for each of these factors. The combined effects of all of them determine true plant adaptability.



See Chapter 10, *Annual and Perennial Flowers*, Chapter 11, *Woody Landscape Plants*, and Chapter 14, *Lawns*.



(a) Symmetrical balance



(b) Asymmetrical balance

Figure 4.—Symmetrical balance (a) and asymmetrical balance (b).

Before selecting plants, consider your site and determine what, if any, environmental conditions exist that might cause problems. Carefully completing a site analysis will help. What elements will plants be exposed to (full sun, shade, wind, reflected heat)? What are soil conditions (pH, depth, drainage)? Based on this evaluation, choose plants that are adapted to your specific growing environment.

Some plants, such as rhododendrons and azaleas, prefer acid soils (low pH). Most other woody plants grow well across a wide range of soil pH, from acid to alkaline. If your soil is alkaline (high pH), you may need to amend it to lower the pH, depending on what plants you want to grow.

Insect and disease resistance

When selecting plants, look for varieties that are insect and disease resistant in order to eliminate unnecessary applications of insecticides and fungicides. Your local Cooperative Extension Service can provide you with information.

Understanding plant survival

Plant hardiness zones

A plant species that flourishes in a USDA plant hardiness zone is likely to be adaptable to zones that are warmer. Some gardeners question a zone rating when a plant fails to survive its first winter. A single test, however, rarely is reliable. A small, young plant may be tender, but may become quite hardy as it grows older. Other conditions also may affect the degree of hardiness. No single winter is quite average; each differs in suddenness and severity of freezing, mid-winter thaw cycles and wind.

There are many ways to develop microclimates to allow a tender plant to grow in an otherwise inhospitable zone. For exam-

ple, you can control soil fertility and water availability to some extent. Windbreaks can provide protection from cold winter winds. Raised beds allow soil to warm earlier in the spring.

Factors such as temperature are largely beyond your control but do have predictable yearly averages. Frost dates, length of growing season and minimum winter temperatures are among the least readily controlled of the major factors that govern plant adaptability.

Frost

Average first and last frost dates for your area may be found on the Internet. The Alaska Agricultural Statistics Service keeps weather data for the major crop growing regions of the state. These dates give an indication of when to expect the first frost of fall as well as the last frost of winter or spring.

However, air temperature and movement are important factors in frost occurrence and may create microclimates within your garden. Because warm air rises and cold air sinks, cool air tends to accumulate in low spots and in areas with minimal air movement, thereby creating frost pockets. Species that are marginally hardy in a given zone should not be planted in frost pockets.

Rainfall

Total average rainfall has a significant effect on plant growth and development, and the distribution of that rainfall is equally important. Some areas receive substantial rainfall. Where summers are dry, plants may need supplemental water in order to survive. In Southcentral Alaska, May and June can be extremely dry and trees and shrubs benefit from deep watering during this time. Even Southeast Alaska, which usually receives more than adequate precipitation,

can go through lengthy dry periods which can damage susceptible plants.

Soil and moisture conditions

Good soil and proper moisture conditions are crucial to plants' survival. Nursery-grown plants are not inexpensive, so provide the best growing conditions possible for each species. Group plants of like growing requirements together to conserve water.

Soil characteristics are a major factor in determining which plants will thrive in your garden. The ideal garden soil is *loam*. It is a light, crumbly mixture with approximately equal amounts of sand, silt and clay particles. Good garden soil includes at least 4 percent organic matter. Organic matter is important because it holds water, nutrients and air, and is loose enough for roots to penetrate. Garden soils can be altered; however, it is important to complete a soil test first to determine what improvements your soil needs.

Degree of sun or shade

The angle of the sun in relation to the earth varies from summer to winter. The sun's angle not only affects day length but also the shadows in a garden. These shadows determine the amount of sun plants receive and thus may have a significant effect on their growth.

Slopes that face south or southwest get more heat during the day than those that face north or northeast. Southern exposure slopes dry out more quickly and often require supplemental water. Taking advantage of different exposures in the landscape may extend your growing season or even determine whether you can successfully grow certain crops such as fruit trees or warm season vegetables.



Aesthetic considerations

Texture, seasonal foliage color, flowers, fruit and bark can provide touches of beauty. You even can select plants to relate to the exterior house colors.

Try to have some color in the yard year-round. Flowering trees provide pastels in spring; beds of perennials and annuals furnish vivid hues in summer; trees and shrubs whose leaves turn yellow, orange and crimson brighten gray autumn days; the bark and fruit of some species is attractive in winter. Strongly contrasting textures also can create interesting year-round effects.

Select plants with more than one feature during the seasons. For example, choose a tree with blossoms in spring and beautiful summer or fall color. Amur chokecherry (*Prunus mackeei*) is often selected for winter interest because of its golden, exfoliating bark.

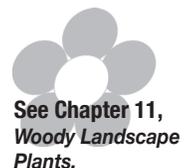
Plant size

Consider the mature size of plants you select for your landscape. A common mistake is to select plants that soon become too large for their location. The drastic pruning that then becomes necessary adds to the cost of maintenance and may reduce the grace and beauty of the specimen. Overgrown plants that are left unpruned alter the balance and accent of a design. In addition, they may partially hide, or even damage, the house instead of complementing it.

Plant form

Some common forms of shrubs and trees are shown in Figure 5.

Shrubs are woody plants that grow to a height of 3 to 12 feet. They may have one or several stems with foliage extending nearly to the ground. Common forms are:



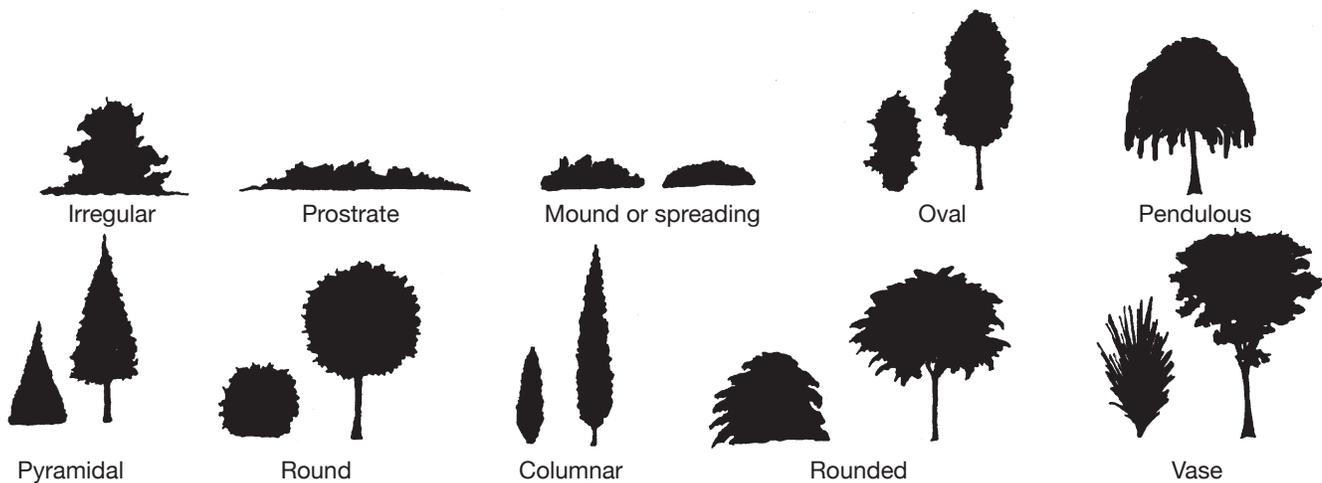


Figure 5.—Plant forms.

- Low, spreading (e.g., juniper species)
- Round or upright (e.g., forsythia)
- Vase (e.g., bridal wreath spirea)
- Pyramidal (e.g., upright junipers and dwarf spruce)
- Columnar (e.g., arborvitae)

Trees are woody plants that typically grow more than 12 feet tall. They usually have only one main stem or trunk, but multi-stemmed specimens of birch are often planted. The canopy, or leafy portion of the tree, develops a typical form such as:

- Round or oval (e.g., maple and pine)
- Vase
- Pendulous (e.g., weeping birch)
- Pyramidal (e.g., spruce, fir and young hemlock)
- Columnar (e.g., columnar poplar cultivars)

Mature shrubs and trees usually are more open and spreading than young plants. Trees are long-lived and relatively inexpensive in terms of initial cost and maintenance when compared to lawns, flower beds, hedges and many other landscape features. In the past, many builders committed costly errors by destroying trees when establish-

ing new residential subdivisions. Real estate developers should appreciate the value of trees and attempt to save them when land is graded before house construction. However, trees that are old and diseased or improperly located should be removed and replaced with more suitable specimens.

Groundcovers such as turf, low-spreading shrubs and creeping plants are essential landscaping materials. Many designs no longer include turf. Groundcovers are grown on banks that are too rough or steep to mow and under trees where grass does not grow satisfactorily; however, ground-cover choices for Alaska are limited.

Plant texture

A plant's texture depends on the size and arrangement of its foliage. Plants with large, widely spaced leaves have coarse texture. Plants with small, closely spaced leaves have fine texture. Texture can vary by season, depending on whether a plant is deciduous or evergreen. Some variation in texture is needed to make a landscape interesting.

Drawing a landscape plan

If you want the fun and satisfaction of preparing your own landscape plan, this section will help you draw a plan that embodies the elements of good design. These steps will enable you to develop a final plan that can be implemented over several years as time and money permit. The “Landscape Design Planning Questionnaire” at the end of this chapter is a good place to start. It will help you assess your site and your needs.

Step 1: Prepare a map

Prepare a scale map of your property (Figure 6). Use graph paper and let one square equal a certain number of feet. You can also use an as-built drawing of your property or draw it to scale using a ruler or engineer’s scale.

The map should include:

- Property lines
- North arrow
- Scale used
- Contour of the land (Use an arrow to show direction of surface water flow.)
- Existing landscape features: house, garage, other buildings, trees, walks and driveways
- Septic tank, sewer lines and underground power lines
- Views (Point arrows in the direction of each good view.)
- Doors, windows, porches and rooms
- Undesirable features of your own or adjoining property
- Easements and right-of-ways

Step 2: Identify use areas and place them on the map

The following use areas are common in residential landscapes:

- Private use area (may include cooking and eating area)

- Children’s play area
- Front yard
- Public area
- Service and work area (e.g., wood pile)
- Fruit and vegetable garden
- Flower beds
- Walks and driveways
- Water feature

Choose those that are appropriate for your design and add others if needed. (Refer to the “Landscape Design Planning Questionnaire” for additional items to consider including.)

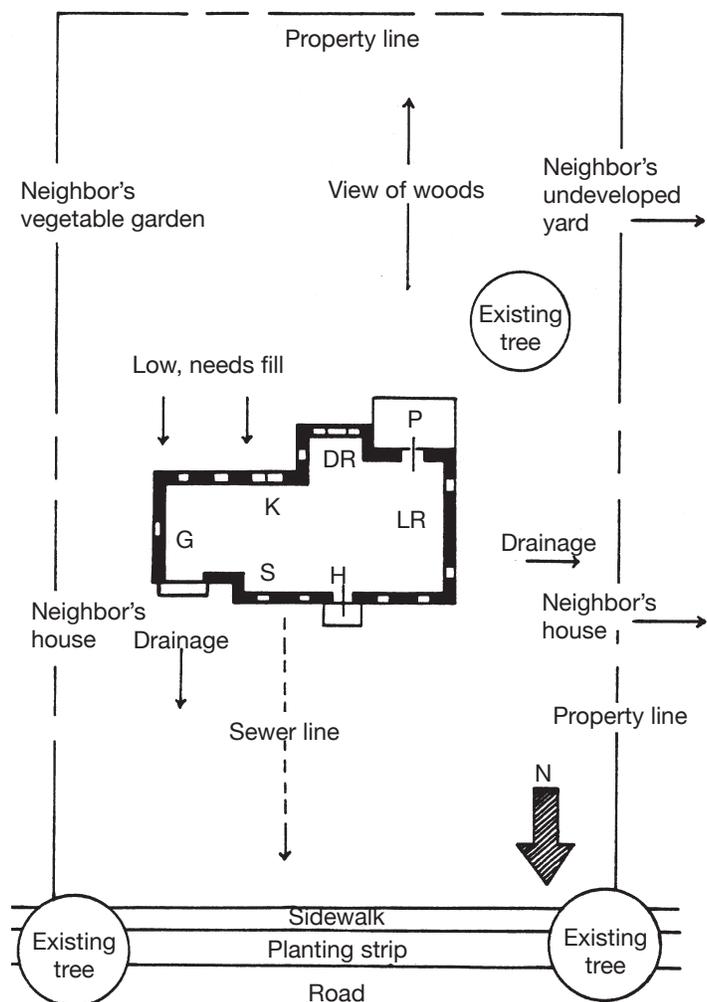


Figure 6.—Property map.

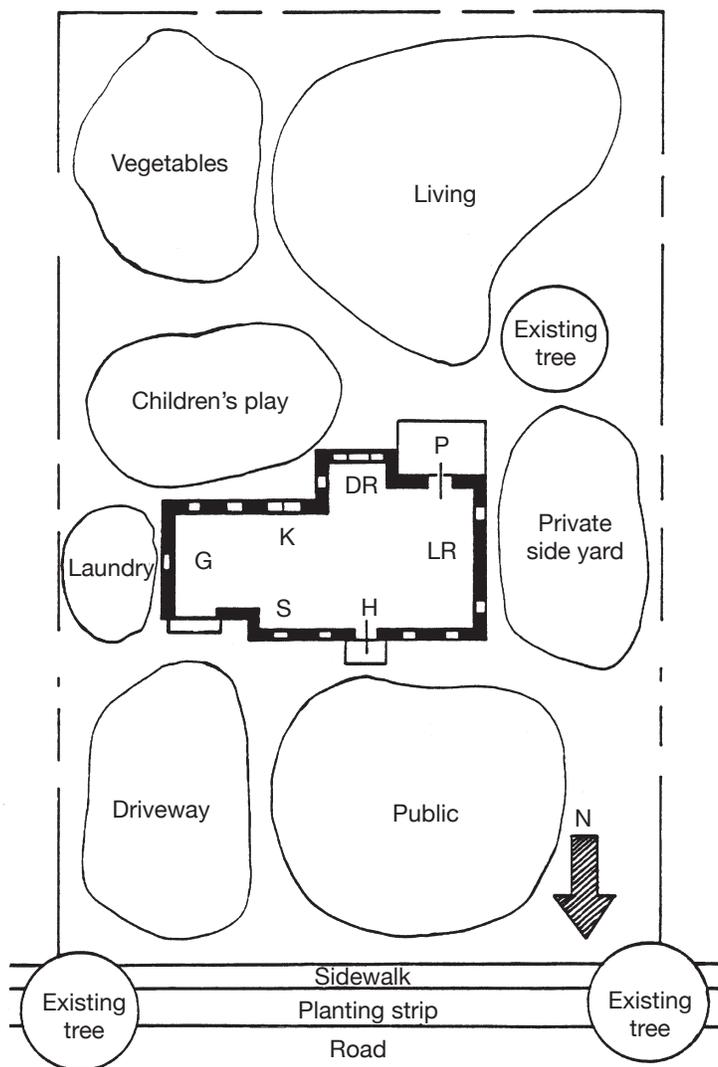


Figure 7.—Placing use areas on a map.

Place the use areas on the map (Figure 7). Fit them together considering traffic flow and how the space will be used. How will people move from one area to another or from the house to outside areas? Will outdoor areas be functional in relation to the house? Will you make use of existing features such as views or changes in the terrain? Try different combinations in relation to rooms of the house, surrounding areas and potential views.

Step 3: Develop the landscape plan

In this step, your landscape plan begins to take shape. Select the most appropriate landscape from those you developed in Step 2. Use landscape symbols to indicate trees and shrubs (Figure 8). Draw the symbols to scale so they represent the actual amount of space involved (Figure 9). For example, a mature white spruce has a spread of approximately 15 feet, so make the symbol represent 15 feet.

On your map, indicate driveways, walks, plants and other structures. Indicate where plant masses are needed to separate areas, screen undesirable views and provide shade, windbreaks and beauty. At this point, do not attempt to name trees and shrubs. Rather, think in terms of plant masses that will serve a particular purpose and tie areas together into a unified design. Keep in mind the design elements discussed in this chapter.

To confirm that your proposed scheme is practical, make sure you can answer the following questions satisfactorily:

- Is the driveway design pleasing, useful and safe? Is the entrance easily accessible? Is there a turnaround? Guest parking? Do you have adequate snow removal options?
- Are walkways convenient? Are guests directed to the front door?
- Will the landscape be attractive from the living room? kitchen? porch? dining room? Will it be attractive all year?
- Is there a private outdoor area? Is it screened from neighbors? from the service area? from other buildings?
- Is the clothesline near the laundry?
- Is the gas meter, power meter or oil tank easily accessible and, if necessary, screened from public view?

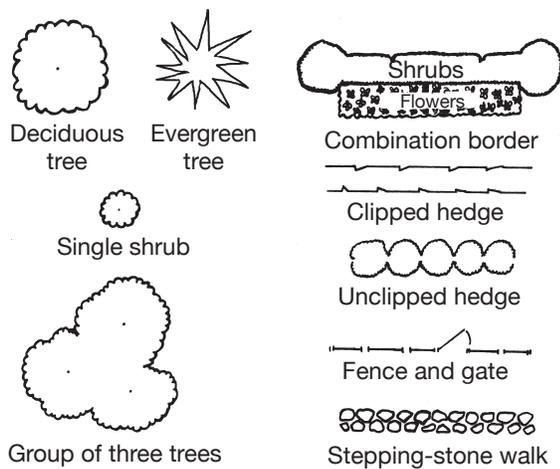


Figure 8.—Landscape symbols.

- Has home security been considered?
- Will the septic tank, sewer lines or drainage fields interfere with planting shade trees?
- Do all parts of the landscape fit together into a unified plan?
- Do maintenance requirements match your available maintenance resources?

Step 4: Create a final plan with planting key

There are many ways to select specific plants for your landscape design. For example, you can begin by determining specifications for each tree or shrub mass. Examples are shown in Table 1.

Next, select a plant or group of plants to meet your specifications. Consult garden books and nursery catalogs, or visit a local nursery. Become familiar with plant materials and discuss the plan with nursery growers. Visit your neighbors gardens, notice what you do and don't like for your own garden. Try not to get too bogged down in this process! Review the section below on "Evaluating landscape sustainability" before making final plant selections.

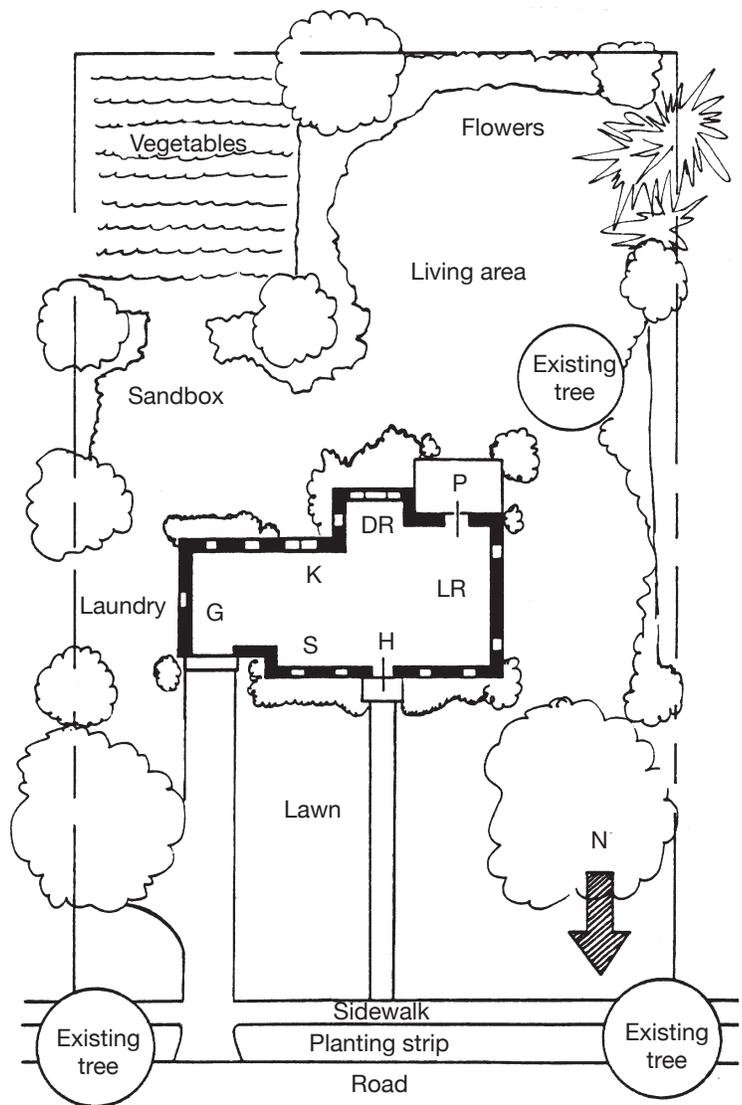
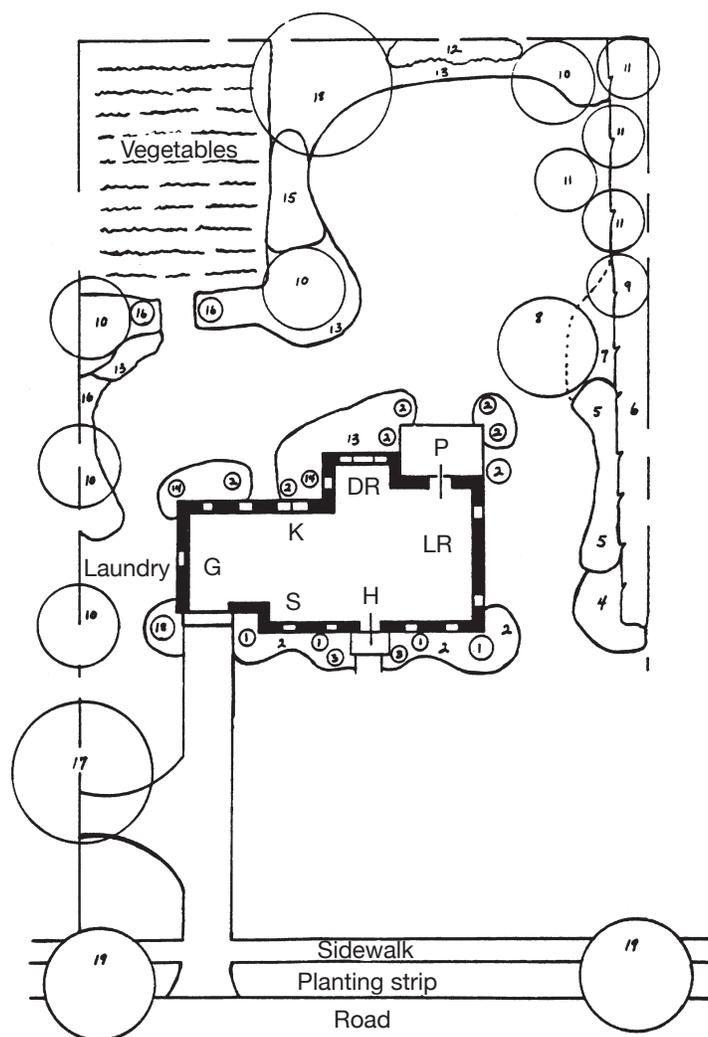


Figure 9.—Sample landscape plan.

Table 1.—Example specifications for a tree or shrub mass.

Purpose	Shade, background, hedge, screen or accent
Height	Low, medium or tall
Form	Spreading, upright, arching or globe
Seasonal interest	Fruit, flowers, foliage
Type	Needleleaf evergreen, broadleaf evergreen or deciduous
Cultural needs	Shade, sunlight and moisture requirements
Maintenance	Pruning and insect- or disease-control requirements

Finally, on your map, designate specific plantings and develop the planting key (Figure 10). By following the guidelines in this chapter, you will create a pleasing landscape. Remember, however, that plans are made to be changed, and a landscape is a work in progress.



Planting key

- | | | |
|-------------------------------------|--------------------|----------------------|
| 1. American cranberry bush viburnum | 7. Ostrich fern | 14. Eastern ninebark |
| 2. Potentilla | 8. Subalpine fir | 15. Currants, black |
| 3. Dwarf mugo pine | 9. Ussurian pear | 16. Alaska wild iris |
| 4. Gooseberry | 10. Siberian larch | 17. Weeping birch |
| 5. Spirea 'Gold Flame' | 11. Canadian lilac | 18. Red-leaf rose |
| 6. Cotoneaster | 12. Currants, red | 19. Mountain ash |
| | 13. Dwarf dogwood | |

Figure 10.—Landscape plan with planting key.

Renovating an established landscape

Making major changes or just renovating a mature landscape can be a challenge. If you move to a home with a mature landscape, it's a good idea to live with the design for a full year before deciding which shrubs and trees to keep and which ones to remove or transplant. When making these judgments, keep the previously described design principles in mind.

The following questions may help you decide how to renovate an overgrown, mature landscape:

- Has a site analysis been done?
- What is important in the landscape and what is expendable?
- If the landscape has ample shade, could more shade-loving plants be incorporated?
- Does the landscape have seasonal color and interest?
- Have trees and shrubs become so overgrown they block light from desirable plants that need sun?
- Are your houseplants getting as much light as they used to? Are mature outdoor trees or shrubs blocking their light?
- Do shrubs crowd each other? Do they block views from windows? Should they be pruned or removed? Do the species involved respond well to renewal pruning?
- Have use areas changed? Could old play areas be incorporated into the landscape differently?
- Could raised beds be incorporated to make gardening easier?
- Has a security check been made? Are mature plants concealing doors and windows? Have plants been thinned to create visibility?

- Is there enough time and help to accomplish a major renovation?
- How long will the renovation take? What should be done first?

The Sustainable Sites Initiative

The Sustainable Sites Initiative, an interdisciplinary partnership of the American Society of Landscape Architects, the Lady Bird Johnson Wildflower Center and the United States Botanic Garden, has spent several years developing guidelines for sustainable land practices that embrace the definition of sustainability as first put forward by the United Nations World Commission on Environment and Development in 1987 (now known as the Brundtland Report). These guidelines are called the Sustainable Sites Initiative: Guidelines and Performance Benchmarks 2009.

Sustainable development, as defined by the United Nations World Commission report, “is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” This idea of sustainability has been embraced by a growing number of citizens throughout our country and the world.

The motivation for the Sustainable Sites Initiative was the existing national standards for “green” building design. These standards are defined by the LEED® Green Building Rating System™ of the U.S. Green Building Council. (LEED stands for Leadership in Energy and Environmental Design.) The goal of the Sustainable Sites Initiative was to create standards and a rating system that could be applied to the landscape.

The initiative’s rating system gives credits for the sustainable use of water, conservation of soils, wise choice of plant materials and designs that support human health and well-being. *The Case for Sustainable Landscapes*, a companion document to *Guidelines and Performance Benchmarks 2009*, explains in further detail the science behind the performance criteria in the guidelines and includes some of the case studies the initiative used in developing its criteria. Citings for both documents can be found in the references below.

Evaluating landscape sustainability

In order to create a truly sustainable garden, you may need to change your expectation of what a landscape ought to look like. Perfect lawns, plants and fruits are all desirable. However, by adjusting your expectations slightly, you can reduce the labor and chemical inputs needed in your landscape. The following checklist gives guidelines for determining how sustainable your landscape is:

- What are the environmental benefits of the landscape?
- Were plants selected properly to reduce pruning, spraying and fertilizing? Are plants placed in ideal growing conditions (e.g., correct light and drainage)?
- Were plants properly sited so that, when mature, they complement rather than stress each other?
- Have drainage problems been corrected?
- Was the landscape planned to help prevent erosion?
- Has water runoff been handled properly?



- Has the landscape been developed to reduce the need for high-nitrogen fertilizers?
- Does plant selection take into consideration the effect of sunlight on summer cooling and winter heat?
- Has the landscape created a better environment for people?
- Does the landscape attract beneficial wildlife?
- Will protection from moose, bear, deer or porcupine be necessary?
- Do broadleaved evergreens need to be wrapped?

Creating landscapes that are both environmentally sound and aesthetically pleasing can be difficult. However, there are many steps you can take to achieve both beauty and environmental enhancement. The following design strategies all lead to a sustainable landscape:

- Take advantage of existing terrain.
- Capitalize on microclimates.
- Select plants that are appropriate for your growing environment.
- Select plants with disease and insect resistance.
- Incorporate mulches to suppress weed growth, retain moisture and support tree health.

As human populations grow, there is more stress on our natural resources. Incorporating the principles of sustainability into new or existing landscapes will enhance the environment for humans, plants and wildlife. Sustainable landscapes ultimately may be part of the solution to some of our environmental concerns.

For more information

UAF Cooperative Extension publications

Landscape Plants for Alaska, HGA-00035.
Managing Your Trees and Shrubs in Alaska: Determining Your Goals and Assessing Your Forest, FWM-00114.
Tree Maintenance and Pesticides, HGA-00436.
Transplanting Trees Successfully, HGA-00335.

UAF School of Natural Resources and Agricultural Sciences

Accessible Planting Boxes. 2002. Georgeson Botanical Garden Note No. 31.
Build Your Own Block Planter. 2001. Georgeson Botanical Garden Note No. 33.
Garden Bench. 2001. Georgeson Botanical Garden Note No. 32.
Holloway, Patricia and Ouina C. Rutledge. *Wildflower Meadow for Interior Alaska*. Georgeson Botanical Garden Note No. 30.
Rutledge, Ouina C. and Patricia Holloway. *Tips for Establishing an Alaska Wildflower Meadow Garden*. Georgeson Botanical Garden Note No. 23a.

WSU Cooperative Extension publications

Homescaping Kit, WY/IRP4.
Planting Landscape Plants, EB1505.

OSU Cooperative Extension publications

Plant Materials for Landscaping: A List of Plants for the Pacific Northwest, PNW 500.

Selecting, Planting, and Caring for a New Tree, EC 1438.

Southwest Oregon Tree Selection Guide, EC 1505.

Internet Resources

Mulching Trees and Shrubs in Alaskan Landscapes, Alaska Department of Natural Resources, Division of Forestry, Community Forestry Program. <http://forestry.alaska.gov/pdfs/mulching.pdf>

Protect Your Home from Wildfire: Fire Resistant Vegetation and Landscaping, Alaska Department of Natural Resources, Division of Forestry, Community Forestry Program. <http://forestry.alaska.gov/pdfs/05FireResistVeg.pdf>

Plant a Tree: An Alaskan Guide to Tree Selection, Planting and Care. Alaska Department of Natural Resources, Division of Forestry, Community Forestry Program. Order a brochure from <http://forestry.alaska.gov/community/publications.htm>

The Sustainable Sites Initiative: Guidelines and Performance Benchmarks. 2009. Sustainable Sites Initiative. <http://www.sustainablesites.org/report>

The Case for Sustainable Landscapes, 2009. Sustainable Sites Initiative. <http://www.sustainablesites.org/report>

Landscape design planning questionnaire

This questionnaire will help you organize your thoughts when designing or renovating your landscape. It may bring to mind topics you have not considered and will give you a better idea of how to design a landscape to meet your needs.

Site information

First, gather information about your existing yard to see how it will affect your plan.

Color of house: _____

Architectural style: _____

Desirable views: _____

Undesirable views: _____

Overhead/underground utilities: _____

Unique features: _____

Soil: Clay Sandy Gravel Rock

Direction of winds: Summer _____ Winter _____

Are wind screens needed? Yes No Where? _____

Are sound buffers needed? Yes No Where? _____

Are there elevation differences? Minimal Moderate Severe slopes

Are retaining walls needed? Yes No Where? _____

Are there soggy areas (high water table)? Yes No Where? _____

Where will water drain? _____

Is a drain required? Yes No

Sun exposure: _____

Are there locations where your yard is too hot in the summer? _____

Existing trees, shrubs and surface roots: _____

Existing site features and structures: _____

Existing walks: Brick Cement Gravel Stone Bark

Where does snow get piled? _____

Is there a parking strip? Yes No Where? _____

Preferred level of maintenance: High Medium Low

Landscape design planning questionnaire (continued)

Design considerations

Now, consider how the landscape will be used.

Who will use your yard? Adults Children Elderly Pets

Preferred style: Formal Semiformal Informal

Theme (e.g., English, Oriental, or natural) _____

Preferred shapes (for lawns, walks, decks): Rectangular 45° angles Circles

Straight lines Curving/free-form Combination

Type of front entryway: Straight to the door Meandering Private courtyard

Outdoor structures/features: Patio roof Raised planters Children's play area

Satellite dish Dog pen/run Storage shed BBQ area Gazebo

Deck Fence Spa/hot tub Sculpture

Boulders Dry creek Mounds/berms Pond Bench Fountain

Waterfall and stream Greenhouse Other _____

What size patio/deck do you need? 2–4 people 4–8 people

8–12 people 12+ people

Do you want walkways connecting parts of your yard? Yes No

Do you want outdoor lighting? Landscape Security

What items need storage space? Garden equipment Garbage cans

Other _____

Do you need off-street parking? Guests Boats Cars RVs

Other _____

How will you water? Garden hose Sprinkler system Drip irrigation

Do you have photographs of your yard? Yes No

(Photos can help you visualize what you want.)

Other comments:

Landscape design planning questionnaire (continued)

Plants

Finally, think about the types of plants that will meet your needs.

What type of plants do you like?

Evergreens trees and shrubs: Needled Broadleaf

Deciduous trees and shrubs: Flowering Nonflowering

Fruit trees Shade trees Junipers Vines Hardy roses

Annual flowers Perennial flowers Vegetables Herbs

Other _____

Do you like fragrant plants? Yes No

Favorite colors: _____

Least favorite colors: _____

How much lawn do you want? None Small Average Large

Where will the lawn be? _____

Is anyone in your family allergic to specific plants? Yes No

Is anyone in your family allergic to bees? Yes No

Are moose or deer a problem? Yes No

What special garden areas do you want? Vegetables Annuals Tender roses

Perennials Herbs Wildlife Orchard Shade

Rock garden Cut flowers Fragrance Wheelchair-accessible

Other _____

Other comments: