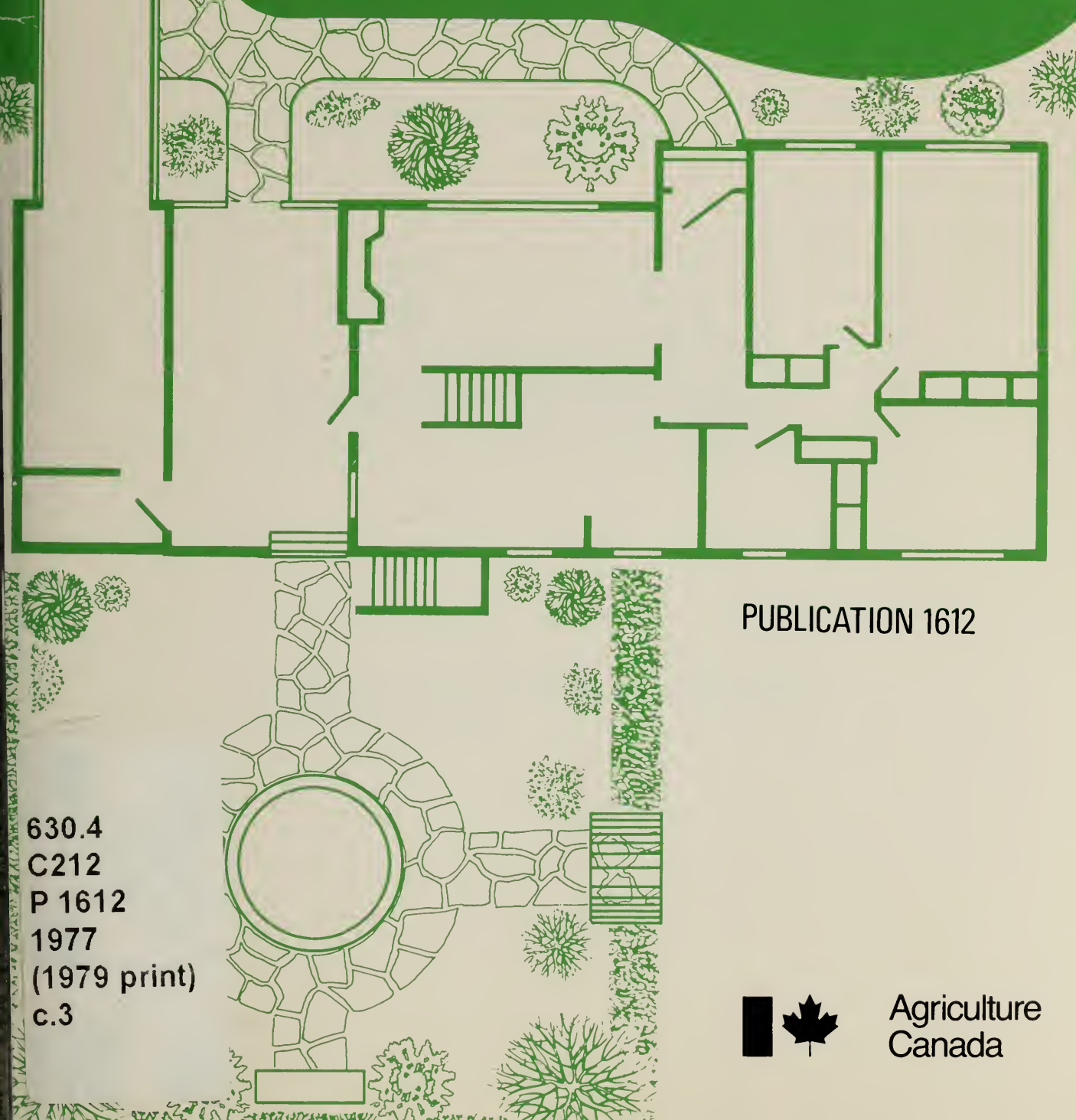
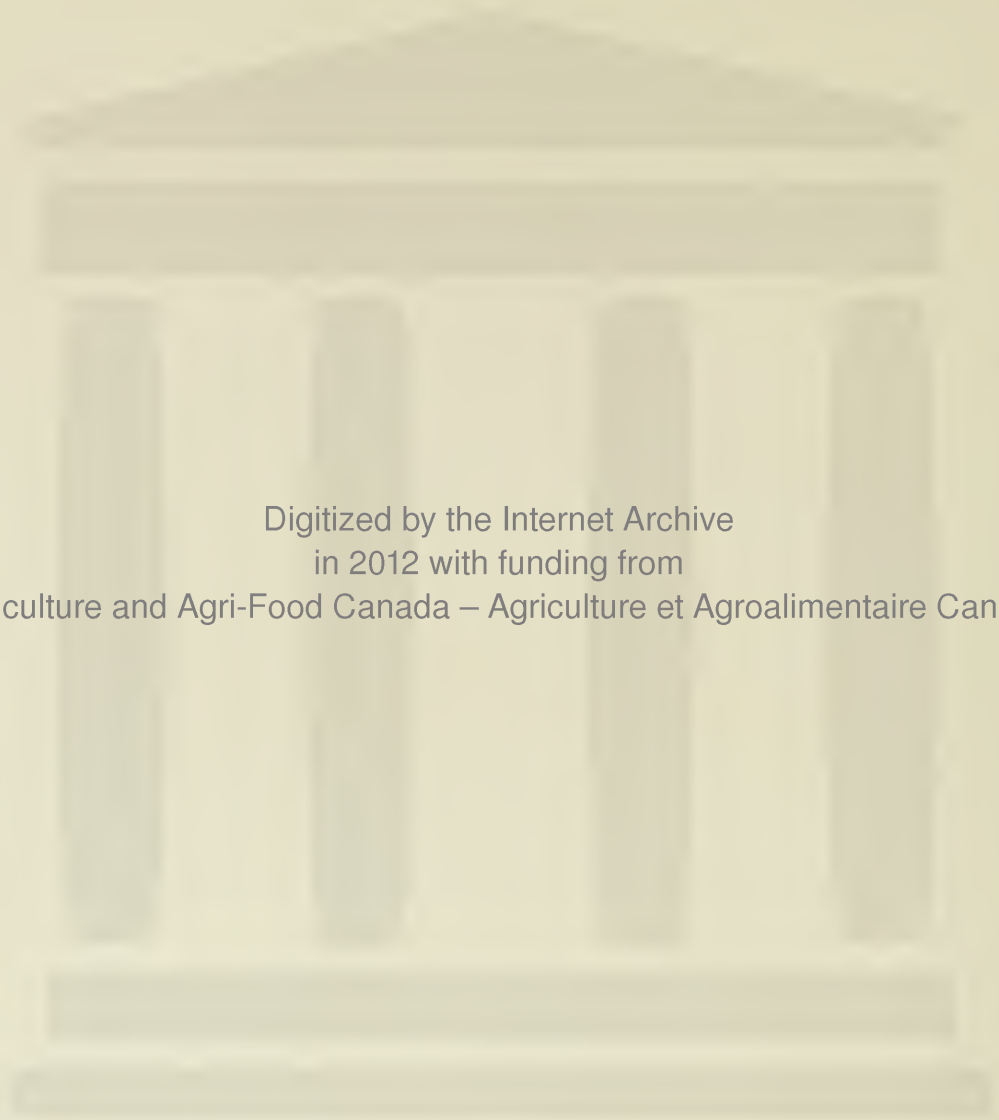
LANDSCAPING THE HOME

IN SOUTHERN BRITISH COLUMBIA



PUBLICATION 1612

Agriculture Canada



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CANADA DEPARTMENT OF AGRICULTURE
PUBLICATION 1612

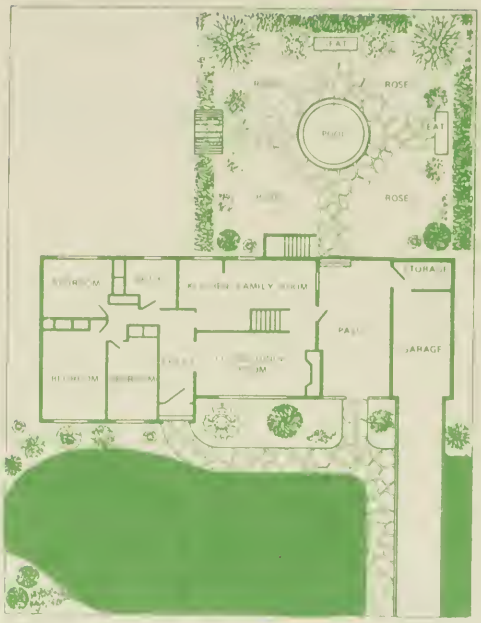
PUBLICATION 1612, available from
Information Services, Agriculture Canada, Ottawa K1A 0C7

Cat. No. A53–1612/1979 ISBN: 0-662-10224-X
Reprinted 1980 6M–10:80

CONVERSION FACTORS FOR METRIC SYSTEM

Imperial units	Approximate conversion factor	Results in:	
LINEAR			
inch	x 25	**millimetre**	**(mm)**
foot	x 30	**centimetre**	**(cm)**
yard	x 0.9	**metre**	**(m)**
mile	x 1.6	**kilometre**	**(km)**
AREA			
square inch	x 6.5	**square centimetre**	**(cm^2)**
square foot	x 0.09	**square metre**	**(m^2)**
acre	x 0.40	**hectare**	**(ha)**
VOLUME			
cubic inch	x 16	**cubic centimetre**	**(cm^3)**
cubic foot	x 28	**cubic decimetre**	**(dm^3)**
cubic yard	x 0.8	**cubic metre**	**(m^3)**
fluid ounce	x 28	**millilitre**	**(mL)**
pint	x 0.57	**litre**	**(L)**
quart	x 1.1	**litre**	**(L)**
gallon	x 4.5	**litre**	**(L)**
WEIGHT			
ounce	x 28	**gram**	**(g)**
pound	x 0.45	**kilogram**	**(kg)**
short ton (2000 lb)	x 0.9	**tonne**	**(t)**
TEMPERATURE			
degrees Fahrenheit	(°F-32) x 0.56 or (°F-32) x 5/9	**degrees Celsius**	**(°C)**
PRESSURE			
pounds per square inch	x 6.9	**kilopascal**	**(kPa)**
POWER			
horsepower	x 746	**watt**	**(W)**
	x 0.75	**kilowatt**	**(kW)**
SPEED			
feet per second	x 0.30	**metres per second**	**(m/s)**
miles per hour	x 1.6	**kilometres per hour**	**(km/h)**
AGRICULTURE			
gallons per acre	x 11.23	**litres per hectare**	**(L/ha)**
quarts per acre	x 2.8	**litres per hectare**	**(L/ha)**
pints per acre	x 1.4	**litres per hectare**	**(L/ha)**
fluid ounces per acre	x 70	**millilitres per hectare**	**(mL/ha)**
tons per acre	x 2.24	**tonnes per hectare**	**(t/ha)**
pounds per acre	x 1.12	**kilograms per hectare**	**(kg/ha)**
ounces per acre	x 70	**grams per hectare**	**(g/ha)**
plants per acre	x 2.47	**plants per hectare**	**(plants/ha)**

Contents



URBAN HOMES

Most homeowners at some time are confronted with the task of landscaping their property. This problem might involve initial planting around a new home or revision of the garden scheme around an old one. When planning the garden around a home, the design should combine convenience with attractiveness. On an average-sized city lot the homeowner must plan carefully to make the best use of available land without making costly or time-consuming mistakes. Above all remember that over the years the effort and cost of required maintenance far exceed the initial expenditure.

When designing a garden for an urban property:

- make the basic plan convenient and functional to meet family needs;
- harmonize the design with that of the neighboring community;
- harmonize with the natural surroundings;
- follow conventions applicable to the architectural design of the house;
- keep the design simple;
- provide privacy where most desirable.

Before starting any landscape project, first draw a plan of the property to scale on graph paper. A scale of 10 squares to the centimetre where each square represents one square metre is recommended. Mark property lines, boulevards, existing trees, and public walks and road lines accurately on this plan. Indicate lightly in pencil sharp changes in contour or slope and rock outcroppings. Accurately locate septic tanks, gas and water lines, and overhead wires. Indicate clearly all entrances and windows of all buildings on the property on the main floor plan. Contact City Hall to determine the regulations for easements, sideline offsets, hedge allowances, and boulevards, so that your design does not incorporate an infraction of city by-laws. Indicate by arrows at the edge of the plan any unsightly objects that should be screened off and any attractive views that could be incorporated into the garden design.

Make several copies of the scale drawing and use them for sketching tentative gardening arrangements to find the one that best serves your needs and taste.

If you wish to consult a professional, provide him with several sharp photographs of the house and outbuildings from several angles, and from a distance to show neighboring properties. These pictures will complement the scale drawings and help you select the best design for landscaping your property.

The most important decision you make when landscaping your home is how much of the property should be allotted for various purposes. About a quarter of the area is usually assigned to the front yard, which comprises the approach to the house and includes the area visible to the public, the driveways, and the walks. A second quarter of the garden, usually in the backyard, should be reserved for services such as storage, garbage disposal, vegetable growing, and clothes-drying lines. The remaining half of the garden can be used for recreation. These proportions, of course, can be altered to suit the needs of each family and to conform to the restrictions imposed by the location of the house on the property.

Front Yard

The front yard is the part of the garden that is visible to the public. The approach area must provide convenient access to the house, but it should also be attractive and inviting. A thoughtfully designed front yard adds significantly to the value of a home.

Several basic guides can assist you in planning a pleasing front garden.

Be sure that your front garden blends with others in the neighborhood. Harmony with the community is essential to good design. High hedges, tall border shrubberies, and formal fences can detract from your own design and from those next to it.

Design the garden to suit the architectural style of the house itself. Southern and Dutch Colonial, English Tudor, Cape Cod, Spanish styles, and many of their variations are best suited to formal or semiformal gardens. For modern bungalows, split-levels, and ranch-style homes, an informal landscape treatment is more appropriate to the casual life-style that these designs portray.

Sometimes the elements of design that complement the architecture of the house are difficult to combine with the personal preferences of the owner and the style of the neighborhood. For example, a picket fence enclosing the front yard is well suited to a Cape Cod home design, but it looks out of place on a block where all the other homes display a wide expanse of front lawn. Such situations require some give and take.

Walks and driveways must be incorporated into the front garden to provide access to the home. Avoid straight lines running vertically to the street wherever possible, with the exception of the driveway, as its location is usually predetermined on a city lot. The driveway, however,

can be widened to allow more parking space for vehicles and wider allowances for pedestrians when cars are parked in the lane. The sidewalk from the front door can often be tied into the driveway. Service walks, if required, should be inconspicuous. Make every effort to avoid fragmenting the front garden. An uninterrupted expanse of lawn makes the lot and the home appear wider than they really are and minimizes the amount of lawn edging required in summer.

Thoughtful selection of trees, shrubs, evergreens, and border plants can increase the appearance and value of a home.

Desirable architectural features such as the front entrance can be made focal points for attention. Choose accent shrubs that have a striking shape, color, or texture for this purpose, but use them sparingly to preserve their impact.

Undesirable architectural features can be minimized by careful use of evergreen and deciduous shrubs and trees. A high foundation line, which makes a house look tall and boxlike, can be hidden with a foundation planting of evergreens. An informal rockery can also accomplish this effect, but it should be extended well beyond the house on at least one side and built up more on that side than it is in front of the house.

Medium-sized to tall deciduous trees are best suited to framing a home. Locate very large-growing species behind the house and place moderate or small-growing specimens at the sides near the corners. Large trees should not be planted directly in front of or close to the house. Occasionally they may be located near the street to soften road noise or to protect the home from sun in the late afternoon.

A common error in landscaping the home is a lack of simplicity in design. If you are not satisfied with the plan, the garden is likely too cluttered or something is planted in the wrong place. The solution usually involves subtracting features from the design rather than adding new ones. Delete unnecessary curves in walkways and border edges. Keep the lawn uncluttered, free from shrub specimens (particularly formal ones) and ornate flower beds. The best place for these, most landscapers will agree, is in the backyard. Keep the garden balanced and keep to a theme. If your house looks natural in its setting, the design of the front garden has been well chosen.

Backyard

The design of the backyard garden is easier than that of the approach area because it is usually remote from the street. There is little need to follow conventions or to conform with the neighbors. In the backyard the homeowner can express his personality freely.

The backyard garden should reflect the needs of the household. On a small city lot some families prefer to devote all their backyard space to one specific function. Most, however, prefer to divide their backyard to serve several activities. On an average-sized lot perhaps a third of the backyard is used for services and the remaining two-thirds

is saved for recreation. Plan the service area for accessibility and the recreational area for privacy.

SERVICES

Because the service area must be functional, its beauty is usually a secondary consideration. This area is best isolated from the street and from both your own and your neighbors' living- and dining-room windows. A good solution is to enclose this part of the yard, if possible, within a trellis or a high hedge.

The service area should also include the incinerator, garbage cans, pulley clotheslines or umbrella racks, storage sheds, and cold frames. Locate the cold frames close to the house if possible, to take advantage of electricity and heat sources when required.

Because many families enjoy fresh fruits and vegetables, some of the service area is often devoted to a kitchen garden. Be sure to locate the compost pits well away from all habitated buildings. Some families may prefer to grow large quantities of fruits and vegetables for preserving. When a large garden is an economic necessity, the homeowner may choose to cultivate all available backyard space, thus restricting all outdoor recreational activities entirely. The decision to opt for a single-purpose service backyard rests entirely with each family.

RECREATION

Apart from a few families who like to devote most of their land to growing produce, the trend in modern living is mainly toward outdoor recreation. Generally about two-thirds of the backyard is used for recreation. Some families, however, prefer to use the whole area for a swimming pool or for courts for outdoor games like badminton, croquet, or miniature golf. When gardening is a hobby, sometimes the whole backyard is devoted to growing roses, gladiolas, or chrysanthemums or planted entirely to lawn in which a wide border for formal beds are cut. Nevertheless, a well-balanced backyard generally provides the most pleasure for many families, and homeowners often prefer to devote a sizeable portion of their land to an outdoor living-room garden. This private garden may be informal or formal in design.

INFORMAL GARDEN — The backdrop for the garden can be either a lawn, preferably of tough, serviceable grass, or a patio of concrete, crushed rock, brick, or blocks. A combination of lawn and separate patio or porch installed next to the house is often preferred.

Plant several trees to provide mottled shade during the hottest part of the day, but try to leave some areas unshaded for comfort on cool days. Windbreaks of either structural or living material are sometimes useful.

The design of the garden itself is a matter of individual preference. Shrubbery borders with a few pockets of perennials and annual flowers are less work than vast flower borders. Some gardeners prefer rockeries, which need not be extensive to be appealing. Many people find a simply designed garden pool pleasant on warm summer evenings.

Locate garden furniture near the house, preferably on a patio or covered porch overlooking the garden. Comfortable, attractive furniture is available in wood, concrete, wrought iron, and aluminum. A barbecue pit and picnic table are often included for mealtime pleasure.

FORMAL GARDEN — In recent years formal gardens have not been popular. Yet a well-designed formal garden can offer privacy, comfort, and charm in a limited space. Formal treatments are ideal for a private garden on an average-sized city lot that is too small for natural landscaping. The nineteenth century screened porch, which is again making a comeback, and the more modern patio–porch or patio–garden lend themselves easily to formal treatment.

The rules of design are more rigid for a formal garden than for an informal one.

Locate the formal garden immediately next to the house at one of its prominent exits. Surround the garden with walls on at least three but preferably on all four sides. A U-, L-, or T-shaped house is ideal because it surrounds the garden area on two or more sides. Sometimes a separate or adjacent garage or outbuilding can serve this purpose. Enclose the remaining open sides with brick, block, or plaster walls, evergreen hedges, or carefully designed fences.

Establish a sense of proportion. The overall area should be neither small and cramped nor large and uninviting. A good ratio of length to width is 3:2 or 4:3. A square, although not impossible, is more difficult to design than a rectangle.

In a formal garden the work of man is paramount to the work of nature. The dominant feature of the garden may therefore be a garden shelter, lattice structure, formal pool, sundial, gazing globe centering a series of formal rose beds, garden seat, piece of statuary, wellhead, or even a barbecue pit. The size of the architectural feature should be in perspective with the size of the garden. Be sure to maintain simplicity. One carefully chosen architectural feature in proper perspective suggests quiet dignity. A cluttered garden loses its restful charm.

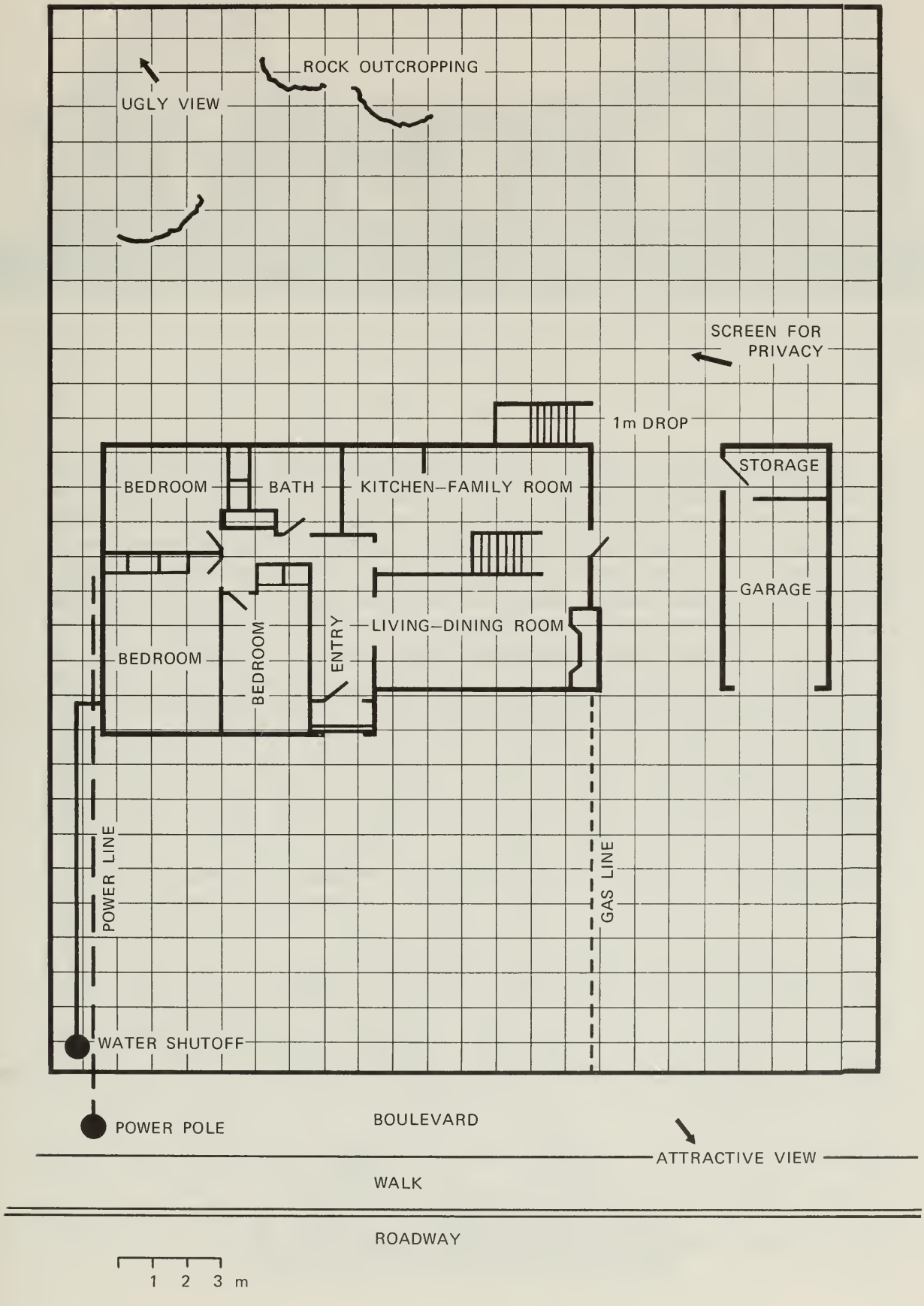
Accent balance in your design. Balance in a formal design functions on a main axis; a theme, closely related to proportion, is repeated geometrically around the diameter.

Choose and locate plantings to accentuate the architectural feature. Evergreens and deciduous trees and shrubs, sometimes of formal habit, can be used. Leave enough space between them in which to plant perennials or annuals, which broaden interest and increase warmth without detracting from the basic theme.

Sample Designs

Most properties on an urban lot can be landscaped in several ways. Some landscape designs for the house and lot drawn to scale in Fig. 1 are presented in Figs. 2-5.

Fig. 1. Scale drawing of a house on a 24 × 31 m (75 × 100 ft) lot to show the features that influence landscape design. Scale: 1 cm = 1 m.



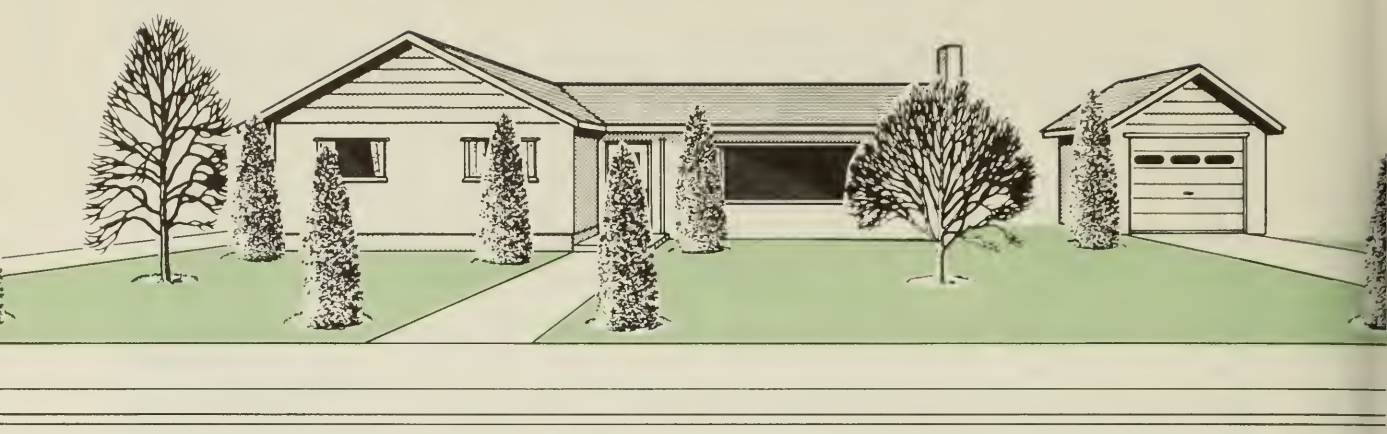


Fig. 2. Poorly designed front yard.

Two treatments for the front yard are sketched in Figs. 2 and 3. Figure 2 shows the front lawn fragmented by sidewalks and specimen trees and shrubs. Extensive lawn edging in summer and snow removal in winter are required, with resulting high maintenance costs. Monotonous choice and location of plants accentuate the height of the buildings. Figure 3 illustrates a better design. Note the reduced space occupied by walkways, with resultant lower installation and snow removal costs. Locating a length of sidewalk next to the driveway provides walking space even when cars are parked in the lane. Providing a walkway from the driveway to the front door increases accessibility. The large expanse of lawn widens the property by illusion and requires less edging. Shrubbery borders flank the buildings and tie them to the ground; this treatment lowers the apparent height of the structures. The emphasis in the planting is to direct the eye to the entrance, which is the focal point of the front gardens, while preserving an attractive view.

Figure 4 shows an alternate treatment for the space between the house and the garage. Laying a walkway through the narrow intervening space as in Fig. 3 divides the area and makes it difficult to maintain. Instead, in Fig. 4 the house and garage are tied together at the front with a low wall, trellis, and gate and at the back with a planter or low wall. This arrangement easily converts the area into a patio (Fig. 4). The patio can be partially or entirely roofed, preferably with fiberglass, and furnished with an acorn fireplace or brick barbecue piped into the existing fireplace chimney. This treatment creates a cool outdoor play area or sitting room for children or adults. The roofed patio can be extended to the jog in the fence, perhaps as a later addition. The drop behind the garage is masked by the planter or wall, and a short flight of steps leads down to the rear garden. The backyard itself in Fig. 4 is divided vertically with a high trellis into a service area behind the garage and a recreational garden area behind the house. The service

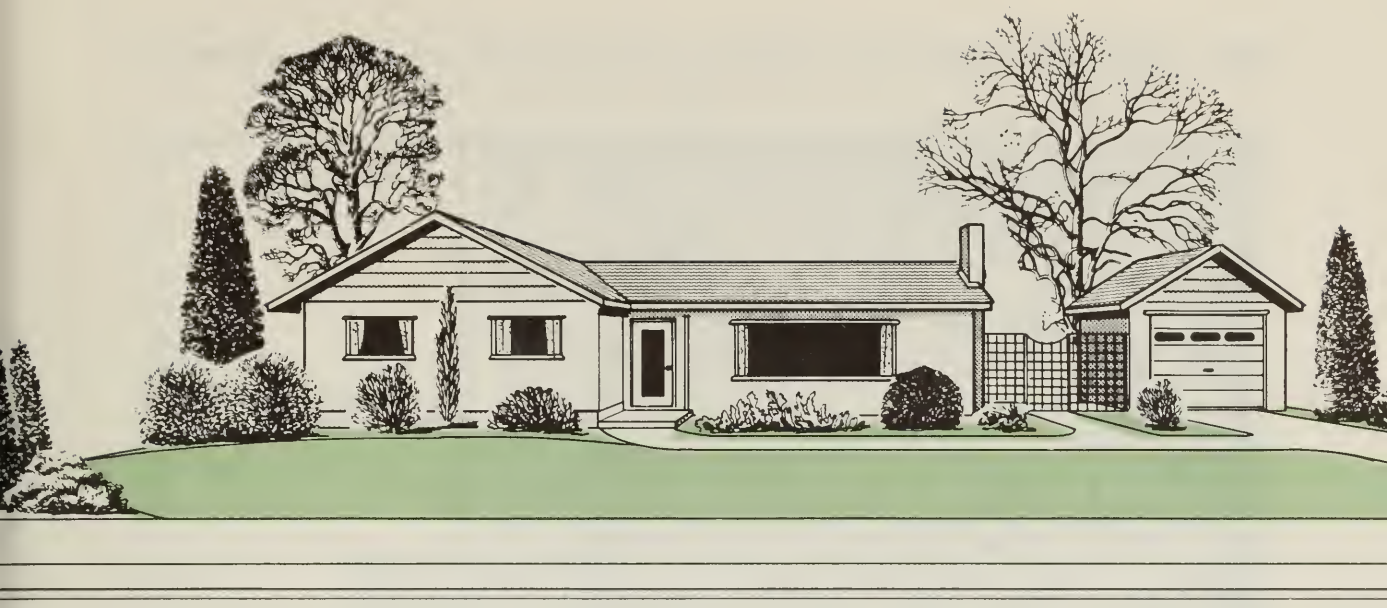


Fig. 3. Recommended design for front yard.

area includes the compost pits and the incinerator well away from all buildings. Cold frames are backed against the garage, freeing most of the service area for vegetables or flowers for table use. The recreation area is landscaped informally. The farthest corner, where there is a natural rock outcropping, is planted heavily to screen an unpleasant view; the foreground is converted to a low rockery with a garden pool as the focal point. The remaining lawn area is large enough for family lounging without requiring extensive maintenance.

The narrow strips of land between the buildings and property lines often constitute a problem. In our examples they have been ignored because they do not affect the overall landscape scheme. However, if you think it would be mutually advantageous, you might allow the neighbors to include these strips in their plantings. This land may also be used to grow shade-loving plants for table decoration. The best approach is to avoid creating such areas when the buildings are first located on the lot. Usually, however, the buildings are situated by a contractor, and the problem of landscaping the property is left to the homeowner.

Figure 5 shows an alternate layout for the service and recreation areas, which illustrates the use of a formal treatment for the private garden. The garden is surrounded on its three open sides by a hedge located inside the property line. The four beds devoted to roses in our example can also be planted with grass or flowers without destroying the theme.

Fig. 4. Design for backyard to illustrate informal treatment for private garden and suggested location for service area.

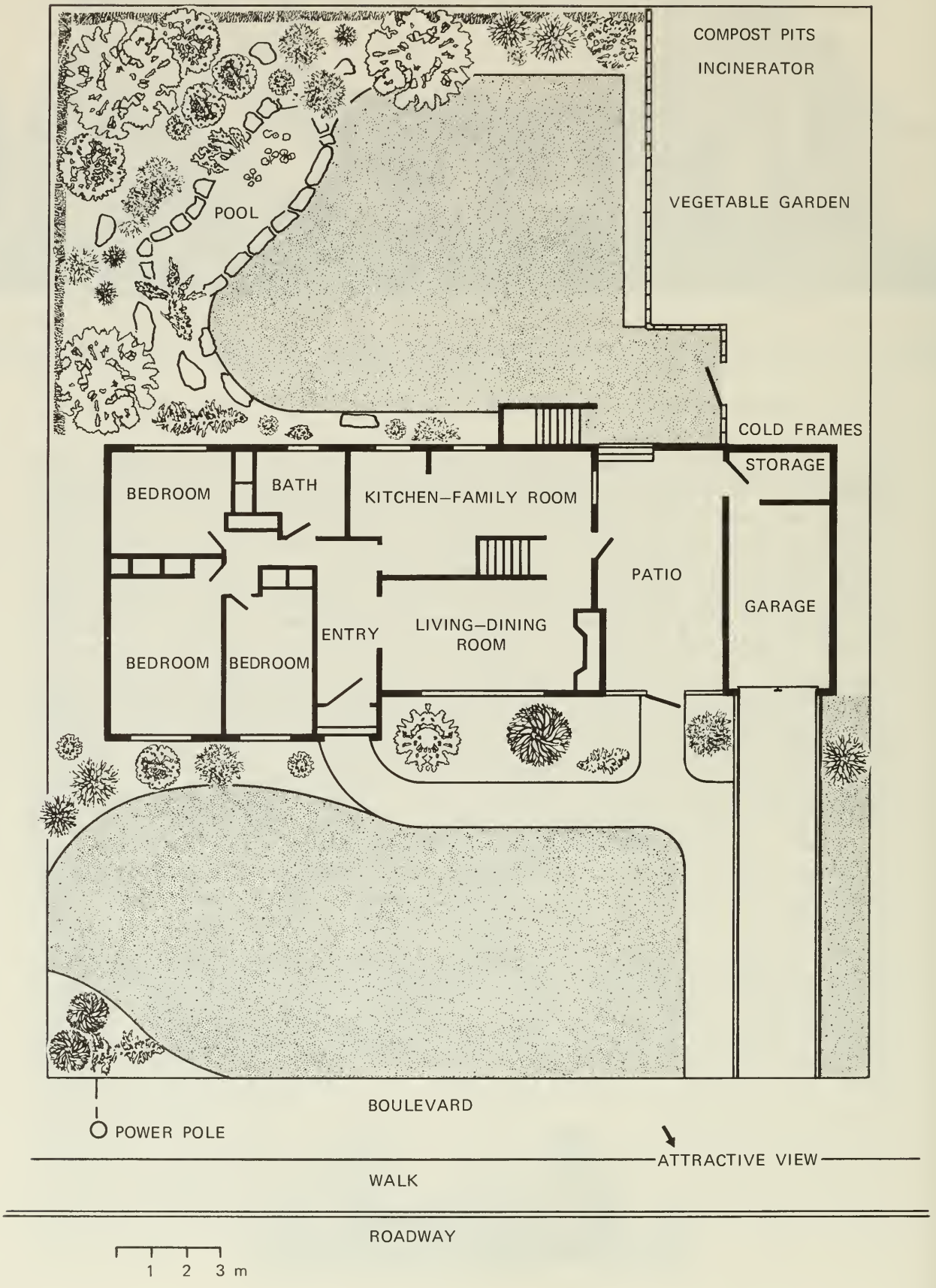
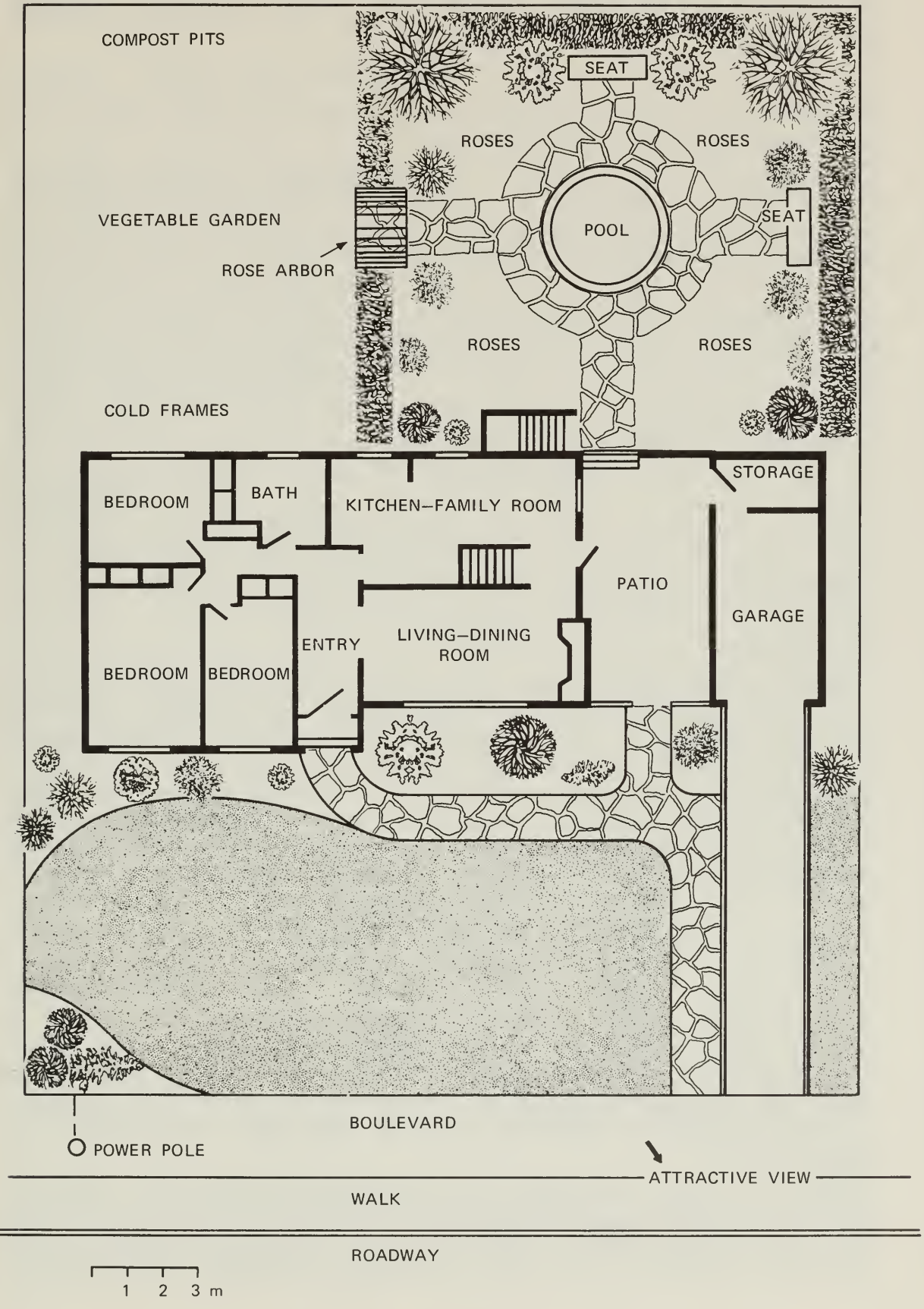


Fig. 5. Design for backyard to illustrate formal treatment for private garden and alternate location for service area.



FARMS OR COUNTRY ESTATES

The basic principles used in landscaping a country home are the same as those for an urban home, except that the applications and emphases are modified.

Again, the first step is to draw a scale plan of the property. A smaller scale than that used in drawing the smaller city lot would probably be more practical for the country estate.

Landscaping a home situated on a large property is easier than it is for its smaller counterpart in the city or town. Because the tract of land involved is large, the closest neighbor is too far away to influence the choice of design. Also, because the extent of the garden is less severely circumscribed in the country, you can place more emphasis on blending the home and garden into the natural surroundings. Attractive views can be used to advantage, without concern of future obstruction. Privacy can be obtained fairly easily at no added cost. Finally, machinery such as tractors, hydraulic buckets and blades, discs and other tillage tools, mowers, and sprayers is often available to help in building and maintaining a large garden.

On the other hand, certain aspects of country landscaping demand particular attention. Outbuildings, service yards, and the house itself should be situated for maximum convenience when carrying out routine farm chores. By observing the following tips, you should be able to choose a landscape design that is both functional and attractive.

Residence

A large acreage often offers several suitable locations for the home. Many advantages are obtained by placing the house centrally as a hub for farm operations. Centralization reduces distances traveled when doing daily chores and increases efficiency. It also isolates the home from the noise and confusion, fumes, and dust of the highway. A central location, however, dictates an extensive system of access roads tying into the main artery. These roads can be expensive to build and are difficult to maintain without heavy equipment. A compromise between seclusion and its alternative is sometimes advisable.

If possible, locate the house on fairly high ground, a knoll, or small hill, particularly if flooding or seepage is a possibility. A small elevation ensures against sewage disposal problems. A high knoll or hill offers a pleasant view of the surrounding country and allows observation of the entire farm operation. On steep slopes, the design of the house should be specially adapted. The modern split-level home accommodates itself well to a hillside location. If you do not have a suitable elevated location, choose an alternate site that takes most advantage of a pleasing view.

Orient the house, if possible, to take advantage of early morning sunshine in bedrooms and breakfast room. Build covered patios and wide roof overhangs on the south and west to minimize the buildup of heat during hot summer days. Take advantage of naturally occurring pro-

tection from prevailing winds, particularly to the north of the house, and exercise caution in the use of wide expanses of glass in fully exposed locations.

Service Yards and Outbuildings

The service yards and outbuildings on any farm should be convenient to reach but generally out of easy view from the home itself. For example, if the house is built on a hill, the farm services can be located inconspicuously at a lower level.

The sight or smell of barns, corrals, or animal and poultry pens should not be permitted to interfere with gracious living. These buildings should be isolated completely from the family home.

Implement sheds, farm workshops, and storage sheds for gasoline, oil, and paint constitute a fire hazard and should be kept well away from human and animal habitation.

Allow ample yard space and include readily accessible loading ramps and platforms in your plans. Modern bulk bin, palletized, or other fork-lift loading operations function best when there is lots of room to manouver.

Kitchen Garden and Drying Yard

In country living, the kitchen garden often is regarded as an important factor in the home economy. More land can be devoted to it in the country than is usually possible on a city lot. It is also easier to maintain a large garden in the country than it is in the city, because machinery is readily available to mechanize some of the operations.

The best location for the kitchen garden is at the rear or to a secluded side of the house. It can act as a buffer between the house and the farm service area. The site should be flat or gently sloping, preferably to the south or west, and it should be well drained and irrigable. For protection as well as for appearance, enclose the garden with a fence that has a gate large enough to permit entry of heavy gardening machinery. The fence can also serve to unify the garden and the house, thereby adding to the attractiveness of the total setting.

Access Roads

In a farm or orchard operation, careful planning of access roads results in increased efficiency, maximum convenience, and optimum returns from landscape efforts. Plan your roadways to accommodate the heavy business traffic involved in farming. Segregate business traffic from household traffic, if possible, to avoid interference with one another.

Two-way roads are practical for providing access to the service yards. However, a one-way single-width loop system is just as convenient and more economical than a wide roadway. Two-way single-width lanes should only be considered on routes where traffic is light, visibility is good, and distances are short.

Avoid sharp, restricted turns in favor of easy curves with adequate visibility in all directions from which traffic converges. Low overhanging branches and wires are dangerous.

Take particular care in designing the turnoff from the highway. A Y-shaped intersection affords easy turns and improves visibility in all directions.

Loading areas and loading platforms should be well clear of the roads themselves so that operations do not block the access. Provide adequate parking space around buildings so that flow of traffic is never blocked.

Careful attention to these details increases farm efficiency and reduces frustration. The result is well worth the extra land required.

Recreational Gardens

Planning the recreational gardens immediately around the home requires an understanding of the principles previously discussed for a home on a city lot.

CHOOSING PLANT MATERIAL

One of the joys of planning your own garden is the wide range of horticultural material available for planting. Several factors should be considered when you are making your choice.

You should give preference to hardy species that can withstand average winter severity in your area. Many half-hardy species are also worth growing if you are willing to give them adequate winter protection. Quickly maturing species are preferable to those that require many years to reach their peak. If they are damaged during an exceptionally severe winter, they can be replaced in 2 or 3 years and their loss is not as serious as it would be for a slow-growing species. Try to locate more sensitive species like the broad-leaved evergreens in a northern exposure. If sheltered from the wind, the plants will be safer than they would be in a southern exposure. On the northern side the ground freezes and remains frozen, snowcover stays longer, and the plants remain dormant all winter. On the southern side rapid temperature fluctuations often coax the plants from dormancy, then damage them severely upon refreezing.

Pests

Be sure to consider the maintenance required to keep your plants disease free, and know the regulations regarding the growing of species predisposed to dangerous infections. Certain species that are closely related to the principal orchard crops (apples, cherries, pears, peaches, plums and apricots) can harbor insects or diseases that, if not controlled, can infect neighboring orchards. The Japanese large-flowering cherry *Prunus serrulata*, for example, can host the little cherry virus and is not permitted in cherry-producing regions such as the Okanagan Valley in British Columbia. Large-fruited flowering crab apples must be

sprayed to control codling moth; flowering peaches, plums, and apricots must be prevented from harboring peach borers; hawthorns, mountain ashes, and quinces must be scrutinized closely for fire blight infection. To protect the community, proper preventive and corrective action in these cases is the civic duty of every gardener.

Space Considerations

After the choice of specific plantings has been made, the location of each and the space they will require when they reach maturity must be considered. The gardener must give forethought to their size after 20 years growth. If the property is small, most large evergreens and nearly all large deciduous trees should be rejected. Just as they begin to achieve mature beauty, they must be removed because they are blocking windows, interfering with neighbors, scraping power wires, blocking drains, or heaving sidewalks or driveways. Many equally fine and long-lived species are available that do not grow to an inconvenient size.

Time to Maturity

Although most gardeners are anxious to have a mature garden in full beauty as soon as possible, many of the finest cultivars do not grow and develop quickly. A good specimen of Florida dogwood, for example, takes 10 years or more to develop and is well worth the wait. Two solutions to the problem present themselves. You can either compromise by choosing those cultivars that grow reasonably quickly and are reasonably long-lived and highly desirable, or you can plant some slow-growing species in their final locations along with faster-growing species to fill in obvious gaps for the first few years. The temporary plantings must be removed before they start to crowd the permanent species. If you draw your choice of plantings on the scale plan with circles representing their mature sizes, you will not make the common mistake of crowding the permanent specimens too close together.

Special Effects

When designing a foundation planting, try to exclude evergreens and shrubs that become heavy-looking and large with age. These species should be used only for flanking the house. Choose instead truly dwarf or semidwarf erect species, and use dwarf low-spreading or fan-shaped evergreens under windows and near walks. An overpowering foundation planting detracts from the design and adds to the apparent height of the house.

Do not spoil the unifying effect of a wide expanse of green lawn by cutting it up with beds of flowers, specimen evergreens, or isolated tree trunks.

Avoid horticultural monstrosities such as the monkey puzzle tree (*Araucaria araucana*) often seen in front of older homes on the Pacific coast. Although this species can complement a heavily ornamented and

filigreed home circa 1850, it is not suited to a home of modern design. Weeping trees and closely clipped or otherwise mutilated specimens should also be avoided except in a truly formal or old-world setting.

Plant material, like the strokes of an artist's brush, can be used to obtain various effects. Differences in foliage, size, texture, and color can be used in harmony to create a garden theme. Evergreens are useful in the background as year-round support, in the foreground for interest, or anywhere at all for accent. Tall pointed specimens accent height; spherical ones add contrast; low-spreading forms accentuate horizontal lines and can be used to reduce apparent heights. Remember that although repetition used in moderation creates harmony, in excess it results in monotony.

Winter Protection of Ornamentals

Most of the species and varieties of trees, shrubs, evergreens, and herbaceous plants recommended for planting in this publication are reliably hardy in areas of Canada with moderately low winter temperatures. If properly conditioned, these plants should come through a winter where temperatures fall between –12 and –23°C (10 and –10°F) unscathed. A certain number of species are recommended for planting despite the fact that they are not reliably hardy. Because they will probably be injured in very hard winters, particular care should be taken to locate them in sheltered places, to insure that they are well ripened before the cold weather begins, and, in some cases, to supply extra winter protection.

In hilly areas there are many small pockets where the climate differs widely from that of the district. These differences as they affect hardiness are heightened by variations in soil type. Gardeners who are located in frost pockets, like those who are in fully exposed locations or who are on heavy soil types, should take precautions to obtain maximum hardiness. Protecting species that can suffer injury from the cold should be a routine garden operation in these cases.

CAUSES OF WINTER INJURY

Winter injury to most of the evergreens recommended in this publication is usually caused by heavy loss of water. Evergreens retain their foliage year round and give off moisture through their leaves throughout the winter. If the weather is cold and the air is dry, the moisture loss is very high. Wind aggravates this situation. When the ground is moist, the roots can satisfy the moisture demands of the evergreen; but if the soil dries out or becomes frozen throughout the root zone, moisture uptake is reduced or stopped. The leaves continue to give off moisture and the plant suffers from drought. If the root system is restricted or injured, as is the case in a newly transplanted shrub, the danger of drying out is increased proportionately. For this reason, early spring planting is preferred to fall planting.

Winter injury to deciduous species is different from that affecting evergreens. Intense cold or alternate freezing and thawing actually kills the cells in deciduous plant tissue. Differences in hardiness are often

related directly to differences in the minimum temperature that the plant can withstand before the cell components freeze and are killed. Usually the flower buds are most susceptible, followed by new wood, crotches and trunk, older wood, and finally the underground parts.

Herbaceous plants, bulbs, and tubers, like the deciduous trees and shrubs, differ in their ability to withstand low temperature. For example, tuberous begonias and canna lilies are killed by only a few degrees of frost on the roots, whereas peonies and tulips can survive long periods in frozen ground. However, alternate freezing and thawing can also result in death even when the minimum temperature has not dropped below that which a species generally can withstand.

Winterhardiness of any plant is a condition acquired over a period of time in the fall. With the arrival of short days, cold nights, and low daytime temperatures, foliage ceases to function actively in all species, turns color and drops off in deciduous plants, or dies to the ground in herbaceous plants. The sap thickens and moves downward to the roots, and the plant tissue, as it 'ripens off', acquires the ability to withstand frost. These processes are hastened by increasing cold, but a sudden sharp drop in temperature before the stage of maximum hardiness has been reached can result in severe injury or death to species that are normally hardy.

PROTECTIVE MEASURES

The gardener can take several precautions to guard against winter injury. First, a gardener can restrict his basic plantings to those species that are known to be reliably hardy. Those plants known to be tender should be lifted and moved into a cool greenhouse or protected cold frame. Protective measures of half-hardy species that are left outdoors during the winter are described below.

RIPENING OFF — Ripening of everything in the garden can be hastened and insured by stopping vegetative growth early in the fall. To inhibit late growth, which is likely to suffer winter kill, cut off the irrigation for 10 days to 2 weeks or longer, depending on the weather. All roses, especially, should be ripened off well before winter.

MOUNDING — In late October some species known to be susceptible to winter injury can be mounded with earth, or peat moss covered with earth. Tea, grandiflora, and floribunda roses fall into this category. Climbing and rambling roses likewise should be mounded in late November 20–30 cm (8–12 in.) up the stems, so that if the winter is severe enough to kill the canes, the plants can grow from ground level the next year. Remove this protection in early March before growth starts and delay spring pruning until all danger of frost is past.

Top-grafted or budded species, like the rose standards, are more difficult to protect. One approach is to bend the standard to the ground and mound over the tops with peat and soil. A second approach is to tie excelsior or similar insulation around the top, cover and tie with polyethylene plastic, and secure the top tightly to a heavy stake to prevent wind damage.

MOUSE DAMAGE — Clear away weeds and undergrowth from the base of trees to prevent mouse damage. Poison baits can be helpful if you put them out early in the winter under inverted flumes or planks to isolate them from the birds.

MULCHING — Tender-growing species can be given a better chance of survival if they are mulched with leaves, shavings, or other loose insulation. However, do not use such materials until mid-November, by which time the mice will have settled elsewhere. Remove mulches in late February or early March before growth begins. If left in place too long, they encourage mold and fungus growth.

Snow, of course, is the ideal and natural winter protection for most species, and lack of enough snow cover makes gardening difficult in some parts of Canada. A scattering of evergreen boughs around plants sensitive to freezing and thawing can help to retain what little does fall.

REDUCING SCORCH INJURY TO EVERGREENS — Broad-leaved evergreens and some conifers are particularly vulnerable to scorching during periods of bright sunshine in the winter. Either locate these species in a northern exposure or plant other evergreen trees around them to break the sun. In a southern exposure, particularly near a wall or walk, protect all broad-leaved and many other sensitive evergreens with evergreen boughs pinned down to prevent them from being blown away.

A recent development for reducing winter scorch in evergreen species that are too tall to protect with evergreen boughs is a milky plastic solution that is sprayed on the shrub in late autumn. The substance sets to form a clear plastic coating over the leaflets. The coating reduces moisture lost through the leaves throughout the cold weather and decreases resultant winter damage. The material, known as an anti-transpirant, is fairly expensive. However, it is easy to apply, is invisible, and flakes away automatically when new growth commences in the spring. Such materials are becoming widely used in commercial nurseries, and are likely to prove useful in many gardens as well.

SNOW LOAD — Evergreens with upright growing branches are vulnerable to injury from snow load. Gardeners often wrap these specimens with burlap during the winter. Aside from being most unsightly, burlap wrapping can do more harm than good. If such species must be planted, their branches should be protected from distortion by winding stout cord around the shrub to hold the branches snuggly together.

In any case, after a particularly heavy fall of snow, the gardener should tour his property and gently sweep excessive weights of snow off the branches of evergreens suffering from distortion.

IRRIGATION — In dry areas, fall irrigation is recommended to reduce susceptibility to winter drought. One application in late October, enough to penetrate the soil to a depth of 1 m (3 ft), provides good protection on most soil types.

When you have taken all possible precautions to protect the garden from winter injury, you can then relax by the warmth of the fire and enjoy the beautiful changes that frost and snow create in the winter landscape.

PLANT LISTS

As an aid to selecting plant materials, the following lists have been prepared to highlight the specific characteristics that influence the gardener's choice of plantings. The lists are in no way all-inclusive and are intended to act only as a guide. Certain genera or species cannot be planted in some areas. Local nurseries and district horticulturists should be consulted concerning hardiness, desirability, and potential problems of a given species in your area. Further information on suitable plantings for Canadian gardens is contained in other Canada Department of Agriculture publications, some of which are listed in the Bibliography.

Large Coniferous Evergreens

Abies	
A. amabilis	Pacific silver fir, cascade fir
A. concolor	white fir, Colorado fir
A. procera 'Glauca'	blue noble fir
Chamaecyparis	
C. nootkatensis 'Glauca'	blue Nootka false cypress
C. nootkatensis 'Pendula'	weeping Nootka false cypress
Larix	
L. laricina	tamarack, eastern larch
L. lyallii	alpine larch
L. occidentalis	western larch
Picea	
P. abies	Norway spruce
P. engelmannii	Englemann spruce
P. glauca	white spruce
P. pungens	Colorado spruce
P. pungens 'Glauca'	blue Colorado spruce
P. pungens 'Koster'	Koster blue spruce
Pinus	
P. nigra	black pine
P. nigra var. *nigra*	Austrian pine
P. pungens	Table Mountain pine
P. strobus	white pine
P. sylvestris	Scotch pine
Pseudotsuga menziesii	Douglas fir
Thuja	
T. occidentalis	white cedar, eastern arborvitae
T. plicata	western arborvitae, western red cedar
Tsuga canadensis	Canada hemlock

Dwarf and Semidwarf Coniferous Evergreens (by shape)

UPRIGHT OR PYRAMIDAL

Chamaecyparis	
C. lawsoniana (and cultivars)	Lawson false cypresses
C. nootkatensis 'Compacta'	dwarf Nootka false cypress
C. obtusa 'Gracilis'	Hinoki false cypress
C. pisifera 'Filifera'	thread Sawara false cypress
C. pisifera 'Plumosa' (and related cultivars)	plume Sawara false cypresses
C. pisifera 'Squarrosa' (and related cultivars)	moss Sawara false cypresses
Juniperus	
J. chinensis 'Pyramidalis' (*excelsa* 'Stricta')	spiny Greek juniper
J. communis 'Hibernica'	Irish juniper
J. communis 'Suecica'	Swedish juniper
J. scopulorum 'Moonlight'	moonlight juniper
J. virginiana	eastern red cedar, western mountain juniper
J. virginiana 'Grey Owl'	Grey Owl juniper
Picea abies (dwarf cultivars)	dwarf and semidwarf Norway spruces
Pinus mugo var. *pumilio*	dwarf Swiss mountain pine
Platycladus (Thuja) orientalis 'Elegantissima'	golden Oriental arborvitae
Taxus cuspidata 'Nana'	dwarf Japanese yew
Thuja	
T. occidentalis 'Columna'	columnar arborvitae
T. occidentalis 'Filiformis'	threadleaf arborvitae
T. occidentalis 'Globosa'	globe eastern arborvitae

VERY DWARF

Chamaecyparis	
C. lawsoniana 'Forsteckensis'	Forsteck false cypress
C. lawsoniana 'Minima Glauca'	dwarf Lawson false cypress
C. obtusa 'Ericoides'	dwarf moss false cypress
C. obtusa 'Nana Gracilis'	dwarf Hinoki false cypress
C. pisifera 'Filifera Nana'	dwarf thread Sawara false cypress
Juniperus communis 'Compressa'	compressed common juniper
Picea abies (dwarf cultivars)	dwarf Norway spruces

Pinus	
P. mugo 'Compacta'	hill mugo pine
P. mugo var. *mugo*	mugho Swiss mountain pine, prostrate mugo pine
Platycladus (Thuja) orientalis 'Aurea Nana'	Berckmans arborvitae
Taxus	
T. cuspidata 'Nana'	dwarf Japanese yew
T. × *media* 'Hicksii'	Hick's yew
Thuja	
T. occidentalis 'Globosa'	globe eastern arborvitae
T. occidentalis 'Pumila Little Gem'	Little Gem arborvitae

SEMIPROSTRATE AND FAN-SHAPED

Juniperus	
J. chinensis 'Blaauw'	upright vase shape
J. chinensis 'Japonica'	vase shape
J. chinensis 'Mas'	vase shape
J. chinensis 'Pfitzeriana'	Pfitzer juniper—best fan shape; fast-growing; robust; disease and insect free; blue, green, golden; 3–4 m (10–12 ft) wide; 0.8–1 m(3–4 ft) tall
J. chinensis 'Plumosa'	plume Chinese juniper—vase shape
J. chinensis 'Plumosa Aurea'	golden plume Chinese juniper—vase shape
J. sabina	savin juniper—semiprostrate
J. sabina 'Tamariscifolia'	tamarix juniper—almost prostrate
J. squamata 'Meyeri'	Meyer juniper—irregular upright vase

PROSTRATE OR CREEPING

Juniperus	
J. communis var. *depressa*	Canadian juniper, common prostrate juniper
J. horizontalis	creeping juniper
J. horizontalis 'Bar Harbor'	Bar Harbor juniper
J. horizontalis 'Douglasii'	Waukegan juniper
J. horizontalis 'Plumosa'	Andorra juniper
J. horizontalis 'Procumbens'	compact creeping juniper
J. squamata 'Prostrata'	prostrate Nepal juniper

Broad-Leaved Evergreens

Arctostaphylos uva-ursi	kinnikinick, common bearberry
Buxus	
B. microphylla var. *koreana*	littleleaf box, wintergreen, Korean box
B. sempervirens	common box
Cotoneaster	
C. dammeri	bearberry cotoneaster
C. praecox	creeping cotoneaster
Cytisus	
C. hirsutus	hairy broom
C. x *praecox*	Warminster broom
C. purgans	Provence broom
Daphne cneorum	rose daphne, garland flower
Euonymus	
E. fortunei	wintercreeper
E. fortunei 'Carrierei'	
E. fortunei 'Coloratus'	purple wintercreeper
E. fortunei 'Emerald Charm'	Emerald Charm wintercreeper
E. fortunei 'Emerald Cushion'	Emerald Cushion wintercreeper
E. fortunei 'Emerald Leader'	
E. fortunei 'Emerald Pride'	
E. fortunei 'Gracilis'	
E. fortunei 'Minimus'	
E. fortunei 'Reticulatus'	
E. fortunei var. *radicans*	
E. fortunei 'Silver Gem'	
E. fortunei var. *vegetus*	bigleaf wintercreeper
Genista pilosa	silkyleaf woadwaxen
Hedera	
H. helix 'Baltica'	Baltic ivy
H. helix 'Conglomerata'	
H. helix var. *hibernica*	
H. helix 'Pedata'	Caenwoods ivy
Ilex	
I. crenata	Japanese holly
I. crenata 'Convexa'	boxleaf Japanese holly
I. crenata 'Hetzii'	
I. glabra	inkberry
I. pedunculosa	long-stalked holly
Lavandula angustifolia subsp. *angustifolia*	English lavender

Lonicera	
L. henryi	Henry's honeysuckle
L. japonica 'Halliana'	Hall's Japanese honeysuckle
Mahonia	
M. aquifolium	Oregon grape, bush holly grape
M. repens	creeping hollygrape
Paxistima	
P. canbyi	myrtleleaf box, cliff-green
P. myrsinites	ratstripper, Oregon boxwood
Rosmarinus officinalis 'Prostratus'	creeping rosemary
Teucrium chaemaedrys	germander
Yucca	
Y. filamentosa	Adam's-needle
Y. glauca	Spanish-bayonet, soapweed

Large Shade Trees (by type of shade)

DENSE

Acer	
A. platanoides 'Crimson King'	Crimson King Norway maple
A. platanoides 'Drummondii'	Drummond's Norway maple
A. platanoides 'Schwedleri'	Schwedler Norway maple
A. pseudoplatanus	sycamore maple
A. rubrum	red maple
A. saccharinum	silver maple
A. saccharinum 'Wieri'	Wier's cutleaf silver maple
Aesculus spp.	horse chestnuts
Fagus grandifolia	American beech
Tilia cordata	European littleleaf linden

DAPPLED

Catalpa speciosa	western catalpa
Cladrastis lutea	yellowwood
Fraxinus excelsior	European ash
Gleditsia triacanthos	honey locust
Platanus occidentalis	American plane, buttonwood
Populus tremuloides	quaking aspen
Quercus rubra	northern red oak
Ulmus americana	American elm

OPEN

Amelanchier laevis	Allegheny serviceberry, Saskatoon
Betula	
B. papyrifera	paper birch
B. pendula	European white birch
B. pendula 'Gracilis'	cutleaf weeping birch
B. pendula 'Youngii'	Young's weeping birch
Quercus palustris	pin oak
Robinia pseudoacacia	black locust

Small Shade Trees (by type of shade)

DENSE

Aesculus × *hybrida*	Lyon's horse chestnut
Ostrya virginiana	American hop hornbean

DAPPLED

Alnus spp.	alders
Amelanchier × *grandiflora*	apple serviceberry, hybrid Saskatoon
Corylus avellana	European hazel
Crataegus	
C. × *mordenensis* 'Toba'	Toba hawthorn
C. laevigata (oxyacantha)	English hawthorn
C. laevigata (oxyacantha) 'Paul's Scarlet'	Paul's Scarlet hawthorn
Ginkgo biloba	maidenhair tree
Gleditsia	
G. triacanthos 'Moraine'	Moraine honey locust
G. triacanthos 'Shademaster'	Shademaster honey locust
Malus	
M. 'Makamik'	Makamik crab apple
M. × *micromalus*	midget crab apple
M. × *moerlandsii* 'Profusion'	Profusion crab apple
M. 'Van Eseltine'	Van Eseltine crab apple
M. coronaria 'Charlottae'	Charlotte crab apple
Morus alba 'Tatarica'	Russian mulberry
Prunus	
P. × *blireiana*	flowering plum
P. virginiana 'Schubert'	Schubert chokecherry

Salix	
S. caprea	goat willow
S. discolor	pussy willow
Sorbus spp.	mountain ashes
Tilia × *euchlora*	Crimean linden

OPEN

Betula pendula 'Purpurea'	purple weeping birch
Caragana arborescens	Siberian pea tree
Cercis canadensis	redbud
Elaeagnus angustifolia	Russian olive
Ulmus	
U. parvifolia	Chinese elm
U. pumila	Siberian elm (seeds itself badly)

Flowering Trees (by size)

LARGE

Aesculus	
A. × *carnea*	red horse-chestnut
A. glabra	Ohio buckeye
Amelanchier laevis	Allegheny serviceberry, Saskatoon
Catalpa speciosa	western catalpa
Cladrastis lutea	yellowwood
Gleditsia triacanthos	honey locust
Koelreuteria paniculata	golden-rain tree, varnish tree
Prunus maackii	Amur chokecherry
Robinia ambigua 'Idahoensis'	Idaho locust

MEDIUM

Amelanchier × *grandiflora*	apple serviceberry, hybrid Saskatoon
Crataegus laevigata (oxyacantha) 'Paul's Scarlet'	Paul's Scarlet hawthorn
Malus spp.	crab apples
Prunus	
P. dulcis (amygdalus)	flowering almond
P. × *blireiana*	flowering plum
P. persica	peach

Salix caprea	goat willow
Sorbus aucuparia	European mountain ash, rowan

SMALL

Cercis canadensis	redbud
Cornus florida	white Florida dogwood, flowering dogwood
Laburnum × *watereri* 'Vossii'	golden-chain tree
Prunus	
P. tomentosa	Nanking cherry
P. virginiana 'Schubert'	Schubert chokecherry
Robinia hisbida	rose acacia

Trees for Formal Use (by shape)

GLOBULAR

Fraxinus excelsior 'Nana'	globe European ash
Robinia pseudoacacia 'Umbraculifera'	globe locust, umbrella black locust
Ulmus carpinifolia 'Umbraculifera'	globe elm

ROUND-HEADED

Acer saccharum	sugar maple
Aesculus spp.	horse chestnuts
Morus alba 'Tatarica'	Russian mulberry
Salix pentandra	laurel willow

BROAD PYRAMIDAL-HEADED

Acer	
A. platanoides (and cultivars)	Norway maples
A. pseudoplatanus	sycamore maple
Catalpa spp.	catalpas, Indian beans
Tilia cordata	European littleleaf linden

COMPACT PYRAMIDAL-HEADED

Platanus occidentalis	American plane, buttonwood
Tilia × *euchlora*	Crimean linden

NARROW PYRAMIDAL-HEADED

Populus × *canadensis* 'Eugenei'	Eugenie poplar, Carolina poplar

COLUMNAR

Acer platanoides 'Columnare'	columnar Norway maple
Malus baccata 'Columnaris'	columnar Siberian crab apple
Populus	
P. nigra 'Italica'	Lombardi poplar
P. simonii 'Fastigiata'	Simon's poplar
Robinia pseudoacacia 'Pyramidalis'	columnar black locust
Quercus robur 'Fastigiata'	columnar English oak

Trees with Special Traits (by use)

AUTUMN FOLIAGE COLOR

Acer	
A. ginnala	Amur maple
A. palmatum	Japanese maple
A. rubrum	red maple
Amelanchier spp.	serviceberries, Saskatoons
Betula spp.	birches
Cornus florida	flowering dogwood, white Florida dogwood
Euonymus	
E. atropurpureus	wahoo, burning bush
E. europaeus	European spindle tree
Ginkgo biloba	maidenhair tree
Malus	
M. baccata 'Columnaris'	columnar Siberian crab apple
M. 'Dolgo'	Dolgo crab apple
M. 'Prince Georges'	Prince Georges crab apple
Populus spp.	poplars, aspens, cottonwoods
Quercus rubra	red oak
Rhus spp.	sumacs
Sorbus spp.	mountain ashes

LARGE ROCKERIES

Acer	
A. ginnala	Amur maple
A. palmatum	Japanese maple

Cornus florida	white Florida dogwood, flowering dogwood
Corylus spp.	hazelnuts, filberts
Euonymus alatus 'Compactus'	dwarf winged spindle tree
Malus	
M. 'Dorothea' (cut low)	Dorothea crab apple
M. × *micromalus* (cut low)	midget crab apple
Prunus	
P. persica	flowering peach
P. tomentosa	Nanking cherry

MOIST LOCATIONS

Acer rubrum	red maple
Alnus	
A. oregona (rubra)	red alder
A. tenuifolia	mountain alder
Betula spp.	birches
Corylus spp.	hazelnuts, filberts
Fraxinus spp.	ashes
Platanus spp.	plane trees, buttonwoods
Populus spp.	poplars, aspens, cottonwoods
Salix spp.	willows
Tilia spp.	lindens
Ulmus americana	American elm

WET LOCATIONS

Acer pensylvanicum	striped maple, snakebark maple, moosewood
Alnus tenuifolia	mountain alder
Betula	
B. occidentalis	water birch
B. papyrifera	paper birch
Populus	
P. tremuloides	quaking aspen
P. trichocarpa	black cottonwood
Salix	
S. amygdaloides	peach-leaved willow
S. babylonica	weeping willow
S. lasiandra	Pacific willow

DRY LOCATIONS

Amelanchier spp.	serviceberries, Saskatoons
Caragana arborescens	Siberian pea tree
Corylus colurna	Turkish hazelnut
Elaeagnus angustifolia	Russian olive
Gleditsia triacanthos	honey locust
Morus alba 'Tatarica'	Russian mulberry
Rhus typhina	staghorn sumac
Robinia pseudoacacia	black locust
Salix discolor	pussy willow
Sorbus scopulina	western mountain ash
Ulmus	
U. parvifolia	Chinese elm
U. pumila	Siberian elm (seeds itself badly)

FAST-GROWING FOR QUICK SHADE

Acer	
A. saccharinum	silver maple
A. saccharinum 'Wieri'	Wiers cutleaf silver maple
Ailanthus altissima	tree-of-heaven (male trees only)
Corylus colurna	Turkish hazelnut
Gleditsia spp.	honey locusts
Platanus occidentalis	American plane, buttonwood
Populus spp.	poplars, aspens, cottonwoods
Robinia pseudoacacia	black locust
Salix	
S. alba var. *chermesina*	redstem willow
S. alba var. *vitellina*	golden willow
S. caprea	goat willow
Sorbus aucuparia	European mountain ash, rowan
Ulmus	
U. americana	American elm
U. parvifolia	Chinese elm
U. pumila	Siberian elm (seeds itself badly)

AVENUE PLANTING

Aesculus	
A. × *carnea*	red horse chestnut

A. glabra	Ohio buckeye
A. × *hybrida*	Lyon's horse chestnut
Betula pendula 'Youngii'	Young's weeping birch
Crataegus	
C. × *mordenensis* 'Toba'	Toba hawthorn
C. laevigata (oxyacantha) Paul's Scarlet'	Paul's Scarlet hawthorn
Elaeagnus angustifolia	Russian olive
Laburnum × *watereri*	golden-chain tree
Malus	
M. baccata 'Columnaris'	columnar Siberian crab apple
M. 'Dorothea'	Dorothea crab apple
M. 'Makamik'	Makamik crab apple
M. × *micromalus*	midget crab apple
M. × *moerlandsii* 'Profusion'	
M. 'Van Eseltine'	Van Eseltine crab apple
Morus alba 'Tatarica'	Russian mulberry
Ostrya virginiana	American hop hornbean
Platanus occidentalis	American plane, buttonwood
Populus simonii 'Fastigiata'	Simon's poplar
Sorbus aucuparia	European mountain ash, rowan
Tilia × *euchlora*	Crimean linden
Ulmus pumila	Siberian elm

EARLY SPRING FLOWERS

Malus	
M. spp.	crab apples
M. baccata var. *mandshurica*	white Manchurian crab apple
Prunus	
P. davidiana	early flowering almond
P. tomentosa	Nanking cherry
Salix	
S. caprea	goat willow
S. discolor	pussy willow

WEEPING OR PENDULOUS HABIT

Betula	
B. pendula	European white birch
B. pendula 'Gracilis'	cutleaf weeping birch
B. pendula 'Purpurea'	purple weeping birch

Caragana arborescens var. *pendula*	weeping caragana
Fagus silvatica 'Purpureo pendula'	purple weeping European beech
Malus	
M. 'Oekonomierat Echtermeyer'	Echtermeyer crab apple
M. 'Red Jade'	Red Jade crab apple
Prunus persica 'Pendula'	weeping flowering peach
Salix	
S. alba var. *tristis*	golden weeping willow
S. babylonica	weeping willow
S. babylonica 'Aurea'	golden weeping willow
S. × *blanda*	Wisconsin weeping willow
Ulmus × *vegeta* 'Camperdownii'	Camperdown elm

Trees and Shrubs for Effective Fruits, Nuts, or Seed Pods (by size)

LARGE TREES

Aesculus glabra	Ohio buckeye
Amelanchier laevis	Allegheny serviceberry, Saskatoon
Carya spp.	pecans, hickories
Gymnocladus dioecus	Kentucky coffee tree
Platanus occidentalis	American plane, buttonwood
Robinia pseudoacacia	black locust

MEDIUM TREES

Amelanchier × *grandiflora*	apple serviceberry, hybrid Saskatoon
Cornus florida	white Florida dogwood, flowering dogwood
Euonymus europaeus	European spindle tree
Malus	
M. 'Dolgo'	Dolgo crab apple
M. 'Makamik'	Makamik crab apple
Prunus	
P. dulcis (amygdalus)	flowering almond
P. persica	peach
Sorbus spp.	mountain ashes

SMALL TREES OR LARGE SHRUBS

Amelanchier spp.	serviceberries, Saskatoons
Euonymus atropurpureus	wahoo, burning bush
Lonicera	
L. maackii	Amur honeysuckle
L. tatarica	Tatarian honeysuckle
Malus floribunda	showy crab apple
Prunus	
P. tomentosa	Nanking cherry
P. virginiana 'Schubert'	Schubert chokecherry
Rhamnus frangula	alder buckthorn
Rosa spp.	shrub roses
Sambucus spp.	elderberries

MEDIUM TO SMALL SHRUBS

Chaenomeles spp.	flowering quinces
Cotoneaster spp.	cotoneasters
Daphne spp.	daphnes
Ligustrum spp.	privets
Mahonia aquifolium	Oregon grape, bush holly grape
Ribes alpinum	mountain currant
Symphoricarpos spp.	coralberries, snowberries
Viburnum spp.	viburnums, arrowwoods

Deciduous Flowering Shrubs (by season)

MARCH – APRIL

Amelanchier spp.	serviceberries, Saskatoons
Chaenomeles spp.	flowering quinces
Daphne mezereum	February daphne
Forsythia spp.	forsythias, golden-bells
Magnolia × *soulangiana*	saucer magnolia
Mahonia	
M. aquifolium	Oregon grape, bush holly grape
M. repens	creeping holly grape

Prunus	
P. × blireiana	flowering plum
P. glandulosa	dwarf flowering almond
P. tomentosa	Nanking cherry
P. triloba	flowering almond

MAY

Cornus florida	white Florida dogwood, flowering dogwood
Crataegus spp.	hawthorns
Exochorda spp.	pearlbushes
Laburnum spp.	laburnums
Malus spp. (most)	crab apples
Prunus persica (and cultivars)	peaches
Rosa spp.	species and shrub roses
Spiraea prunifolia	bridal-wreath
Syringa vulgaris (and cultivars)	common lilacs
Viburnum spp.	viburnums, arrowwoods

JUNE

Buddleia alternifolia	fountain butterfly bush
Deutzia spp.	deutzias
Helianthemum spp.	sun-roses
Kolkwitzia amabilis	beautybush
Lonicera spp.	honeysuckles
Philadelphus spp.	mock oranges
Potentilla fruticosa (and cultivars)	shrubby cinquefoils
Robinia spp.	locusts, acacias
Rosa hybrids	roses
Spiraea spp.	spireas
Syringa hybrids	hybrid lilacs
Weigela spp.	weigelas

JULY

Buddleia hybrids	hybrid butterfly bushes
Caryopteris spp.	bluebeards
Cotinus coggygria	smoke tree

Hydrangea spp.	hydrangeas
Hypericum spp.	St.-John's-worts
Lavandula spp.	lavenders
Potentilla fruticosa (and cultivars)	shrubby cinquefoils
Spiraea spp.	spireas
Tamarix spp.	tamarisks
Yucca filamentosa	Adam's-needle

Roses

SPECIES ROSES

Rosa

R. canina	dog rose; single white flowers, large vase-shaped fruits; 3 m (10 ft)
R. × *harisonii*	Harison's yellow rose; early fragrant pale yellow semidouble flowers; 2 m (6 ft)
R. hugonis	Father Hugo rose; masses of single yellow flowers, scarlet fruit; 2.5 m (8 ft)
R. moyesii	Moyes rose; deep red solitary flowers, 5-cm (2-in.) dark orange fruit; 3 m (10 ft)
R. rugosa	Japanese rose; red or white solitary flowers; 2 m (6 ft)

SHRUB ROSE HYBRIDS

Rosa

R. blanda 'Betty Bland'	
R. bracteata 'Seafoam'	
R. damascena 'Versicolor'	York-and-Lancaster rose
R. eglanteria 'Sparrieshoop'	sweetbriar
R. 'Prestige'	
R. rugosa 'Agnes'	
R. rugosa 'F. J. Grootendorst'	
R. rugosa 'Grootendorst Supreme'	
R. rugosa 'Hansa'	
R. rugosa 'Pink Grootendorst'	
R. rugosa 'Thérèse Bugnet'	
R. 'Von Scharnhorst'	

CLIMBING ROSE HYBRIDS

Blaze	ever-blooming bright red
Cécile Brunner	flesh pink climbing polyantha
Coral Dawn	coral
Dream Girl	coral pink
New Dawn	flesh pink

BUSH ROSE HYBRIDS

grandiflora
- Golden Girl
- John S. Armstrong
- Pink Parfait
- Queen Elizabeth

floribunda
- Fanal
- Frensham
- Golden Slippers
- Jiminy Cricket
- Pink Pinocchio
- Red Favorite
- Sarabande
- Vogue

hybrid tea
- Charlotte Armstrong
- Chicago Peace
- Forty-niner
- Mister Lincoln
- Peace
- Tropicana

Hedge Plants

LOW FORMAL HEDGES

Buxus microphylla var. *japonica*	Japanese littleleaf box
Prunus tomentosa	Nanking cherry

LOW INFORMAL HEDGES

Deutzia gracilis	slender deutzia
Spiraea	
S. × *bumalda* 'Anthony Waterer'	Anthony Waterer spirea
S. japonica	Japanese spirea
Viburnum opulus 'Nanum'	dwarf viburnum, dwarf European cranberry bush

TALL FORMAL OR CLIPPED HEDGES

Caragana arborescens	Siberian pea tree
Crataegus laevigata (oxyacantha)	English hawthorn
Ligustrum	
L. amurense	Amur privet
L. × ibolium	Ibolium privet
L. vulgare	common privet
Rhamnus spp.	buckthorns
Ulmus pumila	Siberian elm

TALL INFORMAL HEDGES

Caragana arborescens	Siberian pea tree
Chaenomeles spp.	flowering quinces
Cotoneaster acutifolius	Peking cotoneaster
Deutzia × lemoinei	Lemoine deutzia
Philadelphus 'Minnesota Snowflake'	mock orange
Rosa	
R. canina	dog rose
R. glauca (rubrifolia)	redleaf rose
R. spinosissima	Scotch rose
R. rugosa	Japanese rose
Spiraea	
S. prunifolia	bridal-wreath
S. × vanhouttei	Vanhoutte spirea

EVERGREEN HEDGES

Pseudotsuga menziesii	Douglas fir
Thuja	
T. occidentalis 'Pyramidalis'	pyramidal white cedar
T. orientalis	Oriental arborvitae
Tsuga canadensis	Canada hemlock

Vines for Covering Banks, Walls, and Fences

Aristolochia durior	dutchman's-pipe
Campsis radicans	trumpet vine
Celastrus	
C. orbiculatus	Oriental bittersweet
C. scandens	American bittersweet

Clematis	
C. dioscoreifolia	sweet autumn clematis
C. florida hybrids	large-flowered clematis hybrids
C. × *jackmanii* hybrids	large-flowered clematis hybrids
C. lanuginosa hybrids	large-flowered clematis hybrids
C. patens hybrids	large-flowered clematis hybrids
C. serratifolia	Korean clematis
C. tangutica	golden or Chinese clematis
C. virginiana	virgin's bower
C. viticella hybrids	large-flowered clematis hybrids
Euonymus fortunei	wintercreeper
Hedera helix 'Baltica'	Baltic ivy
Lonicera sempervirens	trumpet honeysuckle
Lycium chinense	Chinese matrimony vine
Parthenocissus	
P. quinquefolia	Virginia creeper
P. quinquefolia 'Engelmannii'	Engelmann's ivy
P. tricuspidata	Boston ivy
Polygonum aubertii	China fleece vine, silver lace vine
Rosa hybrids	climbing and rambling roses
Vitis vulpina	winter grape
Wisteria	
W. floribunda	Japanese wisteria
W. sinensis	Chinese wisteria

Ground Covers

Aegopodium podagraria	goutweed (very invasive)
Ajuga reptans	carpet bugleweed
Arctostaphylos uva-ursi	kinnikinick, common bearberry
Campanula carpatica	Tussock bellflower, Carpatian bellflower
Celastrus spp.	bittersweets
Clematis	
C. columbiana	western virgin's bower
C. ligusticifolia	traveller's-joy
C. tangutica	golden or Chinese clematis
C. virginiana	virgin's bower

Cotoneaster	
C. dammeri	bearberry cotoneaster, prostrate cotoneaster
C. adpressus var. *praecox*	creeping cotoneaster
Euonymus	
E. fortunei 'Coloratus'	purple wintercreeper
E. fortunei var. *vegetus*	bigleaf wintercreeper
Hedera helix 'Baltica'	Baltic ivy
Hypericum buckleyi	St.-John's-wort
Iberis sempervirens	edging candytuft
Juniperus	
J. chinensis 'Pfitzeriana'	Pfitzer juniper
J. communis var. *depressa*	Canadian juniper, ground juniper
J. horizontalis	creeping juniper
J. horizontalis 'Douglasii'	Waukegan juniper
J. horizontalis 'Glauca'	blue creeping juniper, Bar Harbor juniper
J. horizontalis 'Plumosa'	Andorra juniper
J. horizontalis 'Procumbens'	compact creeping juniper
J. procumbens	japgarden juniper
J. sabina	savin juniper
J. sabina var. *tamariscifolia*	tamarix juniper
J. squamata 'Prostrata'	prickly blue mountain juniper
Lonicera sempervirens	trumpet honeysuckle
Mahonia spp.	mahonias
Nepeta mussinii	mauve catmint
Pachysandra terminalis	Japanese spurge
Parthenocissus	
P. quinquefolia	Virginia creeper
P. tricuspidata	Boston ivy
Phlox subulata	moss phlox
Polygonum	
P. aubertii	China fleece vine, silver lace vine
P. cuspidatum var. *compactum*	dwarf Japanese knotweed
Saponaria caespitosa	soapwort
Sedum spp.	stonecrops
Teucrium chamaedrys	germander
Thymus spp.	thymes
Veronica spp.	veronicas
Vinca minor	common periwinkle

Herbaceous Plants for Rockeries (by light requirement)

	Common name; color; approximate height in centimetres (inches)
FULL SUN	
Acaena microphylla	rose; trailing
Achillea tomentosa	woolly yarrow; yellow; 15(6)
Aethionema coridifolium	Lebanon stonecress; crimson; 10(4)
Androsace	
A. carnea	rose; 10(4)
A. lanuginosa	rose; 15(6)
A. sarmentosa	rose and white; 15(6)
Anemone pulsatilla	pasque-flower; mauve, white, red; 30(12)
Anthemis	
A. cinerea	white
A. montana	white; 30(12)
Aquilegia	
A. alpina	blue; 23(9)
A. glandulosa	blue and white; 30(12)
Arabis	
A. alpina	mountain rock cress; white; 30(12)
A. aubrietioides	mauve; 10(4)
Arenaria balearica	Corsican sandwort; white; 7.5(3)
Armeria maritima 'Alpina'	purple; 15(6)
Arnica montana	yellow; 30(12)
Aster	
A. alpinus	mauve; 15(6)
A. × *frikartii*	mauve; 30(12)
A. × *hybridus* (and cultivars)	various; 20–60(8–24)
Aubrieta spp.	various; 10–15(4–6)
Aurinia saxatilis	gold-dust; lemon; 15–23(6–9)
Campanula	
C. allionii	pale purple; 7.5(3)
C. carpatica	Tussock bellflower; violet; 7.5(3)
C. carpatica 'Turbinata'	violet; 15(6)
C. cochleariifolia	pale blue; 7.5(3)
C. portenschlagiana	purple; 15(6)
C. waldsteiniana	pale blue; 7.5(3)
Cyclamen	
C. hederifolium	purple, rose, white; 7.5(3)
C. purpurascens	purple and white; 7.5(3)

	Common name; color; approximate height in centimetres (inches)
Cymbalaria muralis	kenilworth ivy; purple; trailing
Dianthus	
D. alpinus	rosy purple; 7.5(3)
D. arenarius	pale mauve; 15(6)
D. deltoides	maiden pink; rose; 15(6)
D. glacialis	rosy purple; 7.5(3)
D. graniticus	red; 15(6)
D. gratianopolitanus	cheddar pink; pink; 15(6)
D. neglectus	red; 7.5(3)
D. superbus	pale purple; 30(12)
Dryas octopetala	mountain avens; white; 15(6)
Edraianthus dalmaticus	violet; 15(6)
Gentiana	
G. freyniana	bright blue; 10(4)
G. przewalskii	bright blue; 30(12)
Geranium	
G. argenteum	silver-leaved geranium; pink; 15(6)
G. sanguineum	blood-red crane's-bill; purplish red; 15(6)
Gypsophila repens	creeping baby's-breath; white; trailing
Helianthemum spp. (cultivars and varieties)	sun roses; various; 25–30(10–12)
Heuchera sanguinea	coralbells; coral red; 30–46(12–18)
Iberis	
I. gibraltarica	Gibraltar candytuft; white and purple; 23(9)
I. sempervirens	edging candytuft; white; 15(6)
Iris	
I. chamaeiris	purple; 25(10)
I. cristata	dwarf crested iris; blue, white; 15(6)
I. graminea	deep reddish purple; 25(10)
I. pumila	various; 15(6)
Linaria alpina	orange and violet; trailing
Linum perenne subsp. *alpinum*	pale blue; trailing
Lychnis alpina	Arctic campion; reddish purple; 7.5(3)
Oxalis valdiviensis	yellow; 15(6)

	Common name; color; approximate height in centimetres (inches)
Penstemon	
P. davidsonii subsp. *menziesii*	purple; 23(9)
P. fructicosus subsp. *scouleri*	rose; 30(12)
P. glaber	purple; 30(12)
Petrorhagia	
P. saxifraga	tunic flower; mauve; trailing
P. saxifraga 'Rosea'	rose; trailing
Phlox subulata	moss phlox; white, pink, mauve; 10(4)
Saponaria	
S. caespitosa	soapwort; rose; 7.5(3)
S. ocymoides	rosy purple; 15(6)
Sedum	
S. acre	gold moss; yellow; 7.5(3)
S. album	white; 15(6)
S. ewersii	rose; 23(9)
S. kamtschaticum	yellow; 23(9)
S. pilosum	pink; 7.5(3)
Silene	
S. acaulis	cushion pink; rose; 10(4)
S. alpestris	alpine catchfly; white; 15(6)
S. schafta	moss campion; dark rose; 7.5(3)
Stokesia laevis	Stokes' aster, cornflower aster; blue; 30(12)
Thymus	
T. serpyllum	lemon thyme; purple; trailing
T. serpyllum var. *albus*	white; trailing
Veronica	
V. alpina	blue; 7.5(3)
V. fruticans	blue; 15(6)
V. × *guthrieana*	blue; 23(9)
V. prostrata	blue; trailing
V. repens	blue; trailing
Wulfenia carinthiaca	blue; 15(6)

PARTIAL SHADE

Ajuga genevensis	blue, rose, white; 23(9)
Anemone	
A. alpina	white; 30(12)
A. nemorosa	European wood anemone; white and pink; 15(6)
A. pulsatilla	pasque-flower; mauve, red, white; 30(12)

	Common name; color; approximate height in centimetres (inches)
Aquilegia spp.	columbines; various; 30(12)
Armeria maritima 'Alpina'	sea-pink; purple; 15(6)
Astilbe spp.	astilbes, herbaceous spireas; white, pink, red; 10–46(4–18)
Campanula spp.	bellflowers; various; 7.5–30(3–12)
Cymbalaria muralis	kenilworth ivy; purple; trailing
Gentiana spp.	gentians
Hedera spp.	ivys; various; trailing
Helleborus niger	Christmas rose; white, rose; 30(12)
Hepatica americana	blue; 10(4)
Linaria alpina	orange and violet; trailing
Saxifraga spp.	saxifrages; various; 30(12)
Sedum spp.	stonecrops; various
Silene	
S. acaulis	cushion pink; rose; 7.5(3)
S. quadrifida	alpine catchfly; white; 15(6)
Soldanella alpina	pale blue; 7.5(3)
Wulfenia carinthiaca	blue; 15(6)

FULL SHADE

Anemone	
A. nemorosa	European wood anemone; white and rose; 15(6)
A. sylvestris	snowdrop anemone; creamy white; 23(9)
Convallaria majalis	white; 15(6)
Corydalis	
C. cheilanthifolia	yellow; 23(9)
C. lutea	yellow corydalis; golden yellow; 23(9)
C. ochroleuca	pale yellow; 23(9)
C. ophiocarpa	yellow; 23(9)
Epimedium	
E. alpinum	red and yellow; 30(12)
E. grandiflorum	long-spurred epimedium; blue and white; 23(9)
E. grandiflorum 'Violaceum'	deep violet; 23(9)
E. × *youngianum* 'Niveum'	snowy epimedium; white and bronze; 23(9)

	Common name; color; approximate height in centimetres (inches)
Geum spp.	avens
Helleborus niger	Christmas rose; white, rose; 30(12)
Hepatica americana	blue; 10(4)
Hosta spp.	plantain lilies
Saxifraga spp.	saxifrages; various; 30(12)
Sedum spp.	stonecrops; various
Sisyrinchium	
S. angustifolium	bright blue; 23(9)
S. bermudiana	blue; 23(9)
S. brachypus	yellow; 23(9)
S. montanum	deep blue; 23(9)
Thalictrum minus	mauve; 30(12)
Tiarella wherryi	white and rose; 30(12)
Waldsteinia fragarioides	barren strawberry; yellow; 30(12)

Herbaceous Perennials (by height)

	Common name; color; season
30–60 cm (1–2 ft)	
Achillea	
A. ptarmica	sneezewort; white; early summer
A. × taygetea	dwarf yarrow; yellow; summer
Aquilegia spp.	columbines; various; late spring
Armeria spp.	thrifts, sea pinks; pink; late spring
Asclepias tuberosa	butterfly weed; orange; summer
Aster	
A. alpinus	alpine aster; mauve; autumn
A. amellus	Italian aster; purple; late summer
A. novae-angliae	Michaelmas daisy, New England aster; various; autumn
A. novi-belgii	New York aster, Michaelmas daisy; various; autumn
Astilbe	
A. chinensis	Chinese herbaceous spirea; pink; late spring
A. chinensis 'Pumila'	lilac-rose; summer
Bergenia cordifolia	heart-leaved bergenia; rose; late spring

Campanula	
C. glomerata	clustered bellflower; purple; summer
C. persicifolia	willow bellflower, peach-bells; blue; summer
Centaurea montana	mountain bluet; blue; summer
Chrysanthemum	
C. coccineum	pyrethrum; various; late spring
C. hybrids	border mums
C. maximum	max chrysanthemum, Shasta daisy; white; summer
Coreopsis verticillata	threadleaf coreopsis; yellow; early summer
Corydalis nobilis	corydalis; yellow; summer
Delphinium nudicaule	red larkspur, dwarf delphinium; red; summer
Dianthus barbatus	sweet William; various; early summer
Dicentra	
D. eximia	wild bleeding-heart; pink; late summer
D. formosa	western bleeding-heart; red; summer
D. spectabilis	bleeding-heart; pink; summer
Doronicum cordatum	Caucasian leopard's-bane; yellow; spring
Echinops exaltatus	dwarf globe thistle; lilac; summer
Filipendula palmata	meadowsweet; pink; summer
Gaillardia aristata	blanket flower; red and yellow; summer
Gentiana andrewsii	closed gentian; blue; early summer
Geranium	
G. endressii	Pyrenean cranesbill; pink; summer
G. sanguineum	blood-red cranesbill; red; summer
G. sanguineum var. *prostratum*	dwarf bloody cranesbill; mauve; summer
Geum	
G. × *borisii*	Boris avens; orange red; early summer
G. coccineum	red avens; red; early summer

Globularia cordifolia	globeflower; violet; summer
Gypsophila spp.	baby's-breaths; white, pink; early summer
Heuchera sanguinea	coralbells; pink, red; early summer
Hosta spp.	plantain lilies; white, mauve; early summer
Incarvillea compacta var. *grandiflora*	trumpet flower; crimson; early summer
Iris spp.	irises; various; spring
Lamiastrum galeobdolon	yellow archangel; yellow; summer
Limonium latifolium	hardy statice, wide-leaved sea-lavender; blue; summer
Linum	
L. flavum	golden flax; yellow; early summer
L. perenne	perennial flax; blue; summer
Lobelia cardinalis	cardinal flower; red; summer
Lychnis	
L. × *haageana*	scarlet campion; scarlet; summer
L. viscaria 'Splendens'	German catchfly; pink; summer
Mertensia virginica	Virginia bluebells; pale blue; late spring
Monarda didyma	bee balm, Oswego tea, sweet bergamot; various; summer
Morina longifolia	whorlflower; purple; summer
Nepeta×*faassenii*	mauve catmint; purple; summer
Oenothera	
O. missourensis	Ozark sundrops; yellow; summer
O. tetragona	sundrops, evening primrose; gold; summer
Phlox divaricata	wild sweet William, blue phlox; pink, blue; spring
Platycodon grandiflorus	balloon flower; violet; summer
Polemonium boreale	Richardson's Jacob's-ladder; blue; summer
Polygonum bistorta	snakeweed; pink; late summer
Potentilla atrosanguinea 'Gibson's Scarlet'	cinquefoil; scarlet; summer
Pulmonaria saccharata	Bethlehem sage; red violet; spring

Ranunculus aconitifolius	crowfoot; white; summer
Rudbeckia fulgida var. *speciosa*	black-eyed-Susan; orange; summer
Saxifraga granulata	meadow saxifrage; white; summer
Sedum spectabile 'Atropurpureum'	tall stonecrop; dark red; late summer
Senecio pulcher	groundsel; rosy purple; summer
Solidago virgaurea 'Laurin'	dwarf goldenrod; yellow; late summer
Stokesia laevis	Stokes' aster, cornflower aster; blue; autumn
Tradescantia virginiana	common spiderwort; blue; summer
Veronica spicata (and cultivars)	spike speedwell; white, pink; summer

60–80 cm (2–3 ft)

Achillea millefolium 'Rosea'	milfoil; rose; summer
Anemone hupehensis var. *japonica*	Japanese anemone; various; autumn
Anthemis tinctoria	golden Marguerite; gold; summer
Aster	
A. ericoides	heath aster; white; autumn
A. novae-angliae	New England aster, Michaelmas daisy; various; autumn
A. novi-belgii	New York aster, Michaelmas daisy; various; autumn
Astilbe hybrids	spireas; various; early summer
Campanula medium 'Calycanthema'	Canterbury-bells; blue, rose, white; summer
Centranthus ruber	red valerian; red; summer
Chrysanthemum	
C. hybrids	border mums; various; autumn
C. maximum	max chrysanthemum, Shasta daisy; white; summer
Coreopsis hybrids	coreopsis; yellow; summer
Dictamnus albus 'Purpureus'	gas plant; rosy pink; late spring
Eremurus himalaicus	candle-lily, torch-lily; white; summer
Filipendula vulgaris	dropwort, meadowsweet; cream; summer
Gillenia trifoliata	Indian-physic; pink; summer
Gypsophila paniculata	baby's-breath; white; summer

Helianthus spp.	sunflowers; yellow; late summer
Hemerocallis hybrids	daylilies; various; summer
Iris	
I. × *germanica*	German iris, flag; various; early summer
I. sibirica	Siberian iris; various; early summer
Lupinus 'Russell Hybrid'	Russell hybrid lupin; various; early summer
Lythrum hybrids	lythrums, loosestrifes; pink; summer
Nepeta sibirica	Siberian catmint; lilac; summer
Paeonia officinalis (and cultivars)	common peony; various; early summer
Penstemon spp.	beard-tongues; various; late summer
Phlox paniculata	summer perennial phlox, border phlox; various; summer
Physostegia virginiana	false dragonhead, obedience; pink; summer
Polygonum spp.	knotweeds; white, yellow; summer
Rudbeckia spp.	coneflowers; purple, yellow; summer
Salvia × *superba*	purple sage; purple; early summer
Solidago spp.	goldenrods; yellow; autumn
Trollius chinensis	Chinese globeflower; yellow, orange; early summer
Veronica longifolia var. *subsessilis*	clump speedwell; blue; summer
80 cm – 1 m (3–4 ft)	
Achillea impatiens	dropwort, golden yarrow; white; late summer
Aconitum spp.	monkshoods; blue; late summer
Artemisia ludoviciana var. *albula*	Silver King artemisia, mugwort; foliage
Aster	
A. novae-angliae	Michaelmas daisy, New England aster; various; autumn
A. novi-belgii	Michaelmas daisy, New York aster; various; autumn
Astilbe spp.	perennial spireas; white, pink; summer

Chrysanthemum hybrids	border mums; various; autumn
Cimicifuga racemosa	black snakeroot; cream; autumn
Clematis recta	bush clematis; white, mauve; late summer
Dictamnus albus 'Purpureus'	gas plant; rosy pink; early summer
Doronicum austriacum	giant leopard's-bane; yellow; early spring
Echinacea spp.	purple coneflowers; white, red; late summer
Echinops spp.	globe thistles; blue; summer
Eremurus robustus	candle-lily, torch-lily; pink; summer
Erigeron speciosus (and cultivars)	fleabanes; white, pink, blue; summer
Euphorbia	
E. corollata	flowering spurge; white; summer
E. epithymoides	cushion spurge; yellow; spring
Filipendula rubra 'Venusta'	meadowsweet; rosy pink; summer
Helenium spp.	sneezeweeds; orange, red; autumn
Helianthus spp.	sunflowers; orange, yellow; late summer
Hemerocallis hybrids	daylilies; various; summer
Iris	
I. × *germanica*	German iris, flag; various; early summer
I. kaempferi	Japanese iris, various; early summer
I. pseudacorus	yellow flag; yellow; late spring
Liatris	
L. pycnostachya	cattail gay-feather, blazing-star; purple; autumn
L. scariosa (and cultivars)	tall gay-feathers; white, purple; autumn
Ligularia wilsoniana	giant groundsel; yellow; summer
Lychnis chalcedonica	Maltese-cross; scarlet; summer
Lysimachia punctata	garden loosestrife; yellow; early summer
Lythrum hybrids	lythrums; pink, red; summer
Monarda didyma (and cultivars)	Oswego tea, bee balm, sweet bergamot; pink, red; summer
Paeonia lactiflora (and cultivars)	Chinese peonies; various: late spring

Papaver orientale	Oriental poppy; various; late spring
Penstemon spp.	beard-tongues; various; late summer
Perovskia atriplicifolia	perovskia; lavender; summer
Phlox paniculata	summer perennial phlox, border phlox; various; summer
Salvia azurea var. *grandiflora*	flowering blue sage; blue; summer
Scabiosa caucasica (and cultivars)	pincushion flowers; blue; summer
Solidago spp.	goldenrods; yellow; autumn
Trollius ledebourii	Ledebour globeflower; orange, yellow; early summer

EXCEEDING 1 m (4 ft)

	Common name; color; season; height in metres (feet)
Achillea filipendulina	fern-leaf yarrow; yellow; summer; 1.5(5)
Aconitum	
A. carmichaelii	azure monkshood; blue; late summer; 1–1.5(4–5)
A. napellus	garden monkshood; dark blue; late summer; 1–1.5(4–5)
Althaea hybrids	hollyhocks; various; summer; 1.5–2.2(5–7)
Anchusa azurea	Italian bugloss; blue; early summer; 1(4)
Aruncus dioicus	goatsbeard; white; summer; 1–2.2(4–7)
Boltonia	
B. asteroides	white boltonia; white; autumn; 2(6)
B. asteroides var. *latisquama*	mauve boltonia; lavender; autumn
Cortaderia rudiuscula	pampas grass; white; autumn; 2.5(8)
Delphinium elatum	delphinium; various; early summer; 1.5–2.2(5–7)
Epilobium angustifolium	great willow herb; purple; autumn; 2.5(8)
Filipendula	
F. rubra	queen-of-the-prairie; pink; summer; 2.5(8)
F. ulmaria	queen-of-the-meadow; white; summer; 2(6)

	Common name; color; season; height in metres (feet)
Heliopsis helianthoides 'Incomparabilis'	rough heliopsis; yellow; late summer; 1–1.5(4–5)
Hibiscus moscheutos	common rose mallow; various; late summer; 1–1.5(4–5)
Polygonum cuspidatum	Mexican bamboo; greenish; autumn; 2.5(8)
Rudbeckia maxima	Texas coneflower; yellow; summer; 2.7(9)
Solidago (species and cultivars)	tall goldenrods; yellow; autumn; 2.5(8)

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