LANDSCAPING THE KANSAS HOME

by

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INTRODUCTION

Evidence of widespread and growing interest in landscape gardening and the realization of possibilities of beautifying Kansas home surroundings, not only in cities but in rural communities as well, is noticeable. In some parts of the state, through organization and cooperation of the people, whole communities have been beautified, which has resulted in general satisfaction and pride in both home and community. Beautiful home grounds are a measure of good taste, of the pride of ownership, and the enjoyment of a beautiful environment. The use of the land about the house and its adaptability for living purposes are largely determined by the efficiency of its design and development. The problem of the home grounds is, therefore, that of composing its several parts to best serve its practical requirements and to do it in the most pleasing and sightly way.

Naturally many attempts to improve home environment have not been altogether successful. Common reasons for this are lack of proper information as to what to plant, how to plant, and how to arrange every unit of the home so

as to provide a maximum of convenience, comfort, and beauty for the family living and working in that home.

The lack of moisture and severe insect infestations of the past few years have been instrumental in reducing the number of mature trees and shrubs in Kansas, thus creating an immediate need for encouragement in planting native plant materials which are adapted to the environment.

Since there are no available publications on landscaping the Kansas home, an obvious need for a publication applicable to Kansas conditions has presented itself. It is the purpose of this thesis to touch upon some elementary principles of design in landscape gardening and attempt to make suggestions which will be helpful and applicable in the betterment of rural and urban communities in Kansas.

The discussion under the first major heading is an attempt to create a favorable feeling toward conservation as it is related to community beautification. The second part includes a discussion of the principles of landscape planning and planting with reference to both farm and urban homes, and sketches illustrating many of these principles. The last part is made up of suggested lists of ornamental plants suitable for Kansas conditions.

LANDSCAPING AS RELATED TO CONSERVATION

Since landscape design involves the use of every part of the land to secure the greatest efficiency for the entire arrangement, the goals, particularly in rural home landscaping, parallel certain portions of the conservation program.

When considered both from the material and aesthetic standpoints, landscaping the Kansas home is an important factor in conservation. While saving the soil, a most important factor, man himself must not be overlooked or underestimated. Conservation is for man. Its purpose is to keep the resources of the world in sufficient abundance that man may have a happy, fruitful life, free from suffering--a relatively easy physical existence. It is the aim of conservation to reduce the intensity of the struggle for existence, to make the situation more favorable, to reduce mere subsistence to a subordinate place, and thus give an opportunity for development to a higher intellectual and spiritual level. The problem of the conservation of mankind involves the lengthening of human life and increasing its healthfulness. To overlook man and give all attention

to other things is like pouring water on the smoke instead of the fire. If the soil is to be improved permanently, the man on the soil must also be improved. To be improved, he must not only have the proper nourishment for his body but he must also have proper nourishment for his spirit. One substantial food for the inner man is beauty.

Never before have rural people had so much encouragement in making plantings and rearrangements which help in beautifying their homesteads. The government and various civic organizations are giving encouragement in an economic as well as a physical way.

To beautify the homestead is a noble and practical undertaking for it gives both physical and spiritual comfort. Barren plains, deforested hillsides, and gullied valleys are not pleasant or comfortable surroundings, yet they occur all over this land of ours.

For the purpose of improving the appearance of our countryside, trees and grass, the great soil and moisture conservers, need to be reestablished or introduced on many Kansas farms. Their restoration may take many forms, such as windbreaks, shade trees, screen plantings, woodlots, pastures, orchards, recreational areas, wild life production units, and shrub groups. Each of these needed and

useful plantings should be placed to improve the appearance of the home.

Any Kansas home not protected from winter and spring winds by some natural agent, as a hill or bluff or heavily wooded ravine, needs an efficient windbreak. A windbreak is of necessity a large planting and can be arranged with good effect as a background for the other units. This protection not only adds comfort to the home and saves fuel, but also aids in the production of garden and field crops when they are protected from the prevailing winds which dry out the soil and often cause damage by mechanical action. Poultry and livestock thrive better when shielded from harsh, cold winds.

Theodore Roosevelt once said, "The greatest enemy of the farmer is the wind." Clearly, the first step in conservation is to provide shelter from the biting winds of winter and the drying winds of summer. The pioneers did this before they built their cabins, but many of their descendants are cutting down big trees because they believe trees are not worth the space they take, especially on land worth $200 an acre. It will do little good to bewail the beauty that has been destroyed in Kansas. The present problem is to save the beauty that is left and re-

store the beauty that has been destroyed.

A planting of trees for a woodlot may be a beautiful and valuable addition to the area by serving many purposes around the farm. It may be used as a source of wood for fuel, and timber for posts and other construction work around the farm. It may be utilized to reinforce a windbreak, to conserve soil and water, to protect wild life, and to provide wholesome recreation. It can also be arranged to serve as an attractive background for the home. Exploring woods is a constant source of entertainment and training for children and is one of the educational facilities which may increase their interest in the home. Many of the youth organizations, such as the Boy and Girl Scouts and Four-H Clubs, are providing nature study for the youth of our land. The home woodlot should provide a source of study for them.

An enclosure with trees and shrubs or a carpet of green grass should form the unit for the poultry. Chickens in a fenced and protected area can be handled in a much more efficient manner than by the old method of free range. Since the beauty of a landscape is improved by the addition of a bit of green here and there and since diseases can be controlled more easily by such sanitation, every

farm plan should combine these two purposes in arranging and maintaining an all-year poultry pasture.

The beauty of a fruit orchard in bloom and the practical value of fruit for the family are memories cherished by many Kansas people. There are many fruit trees that may be used for shade, and for completing the landscape picture as well. These trees with their deep root systems, together with a carpet of grass or clover, stand as splendid protection against erosion by wind and water.

Many homes in the hilly sections of eastern Kansas and the "dust bowl" section of southwest Kansas are in dire need of plantings around their lawns and about the foundations of the houses to retain soil. With an attractive planting of shrubs around the foundation, a dense turf of grass, a few terraces to hold the soil from erosion by water, and an effective windbreak, the top layer of the soil could have been retained and the action of erosion could have been reduced.

Time after time shrubs and trees on hillsides have been uprooted by erosion. This action could have been reduced by terracing and the planting of grasses. Trees and shrubs alone cannot hold the soil when the slope of the land is great, but they are always helpful and should

be aided in their beneficial work by terraces or retaining walls. Trees do break the high velocity of the winds which sweep the Kansas prairies and cause as much erosion as water.

Another profitable and fortunate feature of planting trees is that they form a sanctuary for birds. Birds with their songs and their beautiful colors flying through the air give life and interest to the landscape. It is generally conceded that birds save American farmers large sums of money each year because they keep down insects that will damage the crops. Every home owner can bring birds into his daily life by planting shrubbery at the edge of the lawn. Birds should be protected from hunters: hunting with a camera instead of with a gun should be encouraged. Planting fruit-bearing shrubs has been found to be an effective way to bring birds back year after year.

Grass forms the foundation or the canvas upon which the landscape picture is made. Grass is the carpet for the soil. Without it, the whole effect would be barren and uninteresting. Grass, with its millions of leaves and stems, holds back rain water and reduces the action of erosion. It not only hinders erosion but often helps to rebuild eroded fields. A large area of grass adds appre-

ciably to the comfort of a home. In summer, it constantly gives off moisture which has a definite cooling effect. Grass relieves the glare which is very strong on light, barren soils. In wet weather, it decreases the amount of mud and in dry weather, it reduces the amount of dust. As in the case of trees, the section of the state determines, in a measure, the kind of grass that is best to plant. Native and adapted grasses are always better than exotic cultivated sorts.

A pasture of grass and shade trees with poultry or grazing livestock makes a beautiful and inspirational scene. It is a token of a balanced farm program. From the livestock management viewpoint, it is more convenient and efficient to have the livestock pastures and poultry ranges near the house than far removed. From the landscape point of view, it is also more desirable. The view of an expanse of prairie makes an ideal vista from the house.

In regions of the state where there is a native growth of trees, it is well to take a lesson from Mother Nature and plant those trees that are naturally adapted to that area. By looking about, one can determine the native

and the introduced species that give the most satisfactory growth and that are likely to be of the greatest practical value.

LANDSCAPING THE HOME GROUNDS

General Planning Considerations that Apply to the Landscaping of Both Farm and Urban Home Grounds

Utilizing Natural Features. Every plant in the world that springs up naturally in any spot thrives best there because the conditions of light, air, and moisture are best adapted to its needs. In other words, every square foot of naturally covered soil all over the earth is covered by the vegetation adapted to that particular kind of soil and location. This is the statement of an obvious fact--yet frequently the owner of a charming country home or of a large private estate has defeated Nature's purpose by filling in what he regarded as a miserable, low, wet, soggy area when, actually if he had taken Nature's hint, he could have utilized this area to make a lovely and unusual bit of garden where forget-me-nots, ferns, violets, and other bog-loving plants would mingle. Even more frequently the home owner builds a man-made pool which, informal as it

may be, is out of place on the top of a hill.

All of this points to a moral--a moral that leads to a very definite rule which every garden lover should observe. Plan and plant a garden along the line of least resistance.

With overabundance of rain, drouth, insects, and other unpleasant conditions, gardening is one of life's most tantalizing uncertainties even the best way it can be done. This unhappy state of affairs should be mitigated as much as possible, making heads save hands and backs and, incidentally, garden hopes by gardening according to Nature's laws instead of against them.

The question which should always receive first consideration when planning a garden is, therefore, what has Nature done with the land on which the garden is to be built. Before a stone or brick of a building is laid, or even the style of the house is agreed upon, this should receive attention, for on a property of any appreciable size it governs not only the kind of garden one is to have but also the location of the buildings and their style of architecture.

It is needless to say that a set of conditions which would call for the use of a formal garden would preclude

the possibility of a wild garden; and vice versa, a formal garden would be out of place in a beautiful natural area, this affecting the position of both the house and garden. One should plan, therefore, if possible, before any building is done, both the house and the garden. Take every natural feature and peculiarity of the land, topographical and otherwise, into consideration.

Importance of Planning. The proper development of a home requires time and planning. For the average family, the development program will be a matter of a little planting from year to year. This is as it should be, but a plan should be made before the changes are begun. The most satisfying developments come as a result of careful planning. Careful plans are prepared for beautiful buildings, parks, large estates, or any enterprise in which the results are not left to chance. The mere accumulation of quantities of beautiful plant materials will not create beautiful and convenient home grounds any more than an abundance of unusual clothing makes a well-dressed man.

The planning of the grounds ideally should begin in advance of building the home and should proceed with the planning of the house and its location. In the case of the many homes already built, the problem is largely one of

improvement and rectification of the surroundings, but the same principles will apply for improvement as for the complete development from the beginning.

Orderliness. Landscaping is essentially an orderly development. Tidy grounds, the first essential of improvement, are within the means of everyone and should be maintained by home owners and communities alike. Observation shows that successful farmers and business men usually have tidy grounds. Neatness, cleanliness, and orderliness are absolutely necessary for success whether it is at home or in the office.

Before one can think of carrying out a yard improvement plan, the rubbish must be disposed of, the farm implements and garden tools taken from the yard, discarded tires which are often used for enclosures for small flower beds removed, and chicken coops moved to a properly located poultry yard. Certainly on a well planned home grounds there are other convenient locations for all necessary articles.

Custom is responsible for much of the clutter around homes, particularly farm homes. Although a woodpile is a welcome sight to Kansas people, it is not necessary to place it on the front lawn in order to appreciate its win-

ter fuel value. The man who hauls his wood directly to storage in the woodshed or back yard saves labor and helps to maintain orderly grounds. If a convenient service yard is established on the service side of the house, this will provide an area for the wood pile, clothesline and outbuildings--three features which are improperly located more than any other necessary elements in the design. This also provides an area for a trash can or incinerator in which the trash can be disposed of rather than allowing it to accumulate in the yard. A garbage can and a container for tin cans in this area aid greatly in keeping the grounds tidy and livable. Trees, shrubs, and vines may be used to screen out the view of the service area and all necessary clutter and unsightly buildings from the house and outdoor living room.

Flower beds or shrubs that are promiscuously located in the centers of the lawn areas should be removed and the plants arranged in borders and foundation plantings. Rocks that have been used to border such beds may be used in constructing a correctly located rock garden. All dead trees and shrubs should be removed and all dead and interfering branches and stubs of branches should be pruned back to live wood in such a way as to allow healing to take

place. This will be beneficial in preventing future attacks of diseases and insects and it will also be a great improvement in appearance.

A man might be dressed in the best of clothes but one could not say that he was well-dressed if he needed a shave, a shoe-shine, or had otherwise failed to take proper care of himself. The same may be said of the home grounds. If there must be fences, gates, clothesline, chicken houses, grape arbors, and outbuildings, they should be presentable. They must stand plumb, must be in alignment, in good repair, and well painted. The house and barn should be in good repair. If the house has never been underpinned, build up under the sills with native stone, concrete, brick or lattice work. Frequently the front steps, windows, or screens are dilapidated and need to be repaired. This should be accomplished before any foundation planting is done to avoid injury to the plants. A man is often judged by his home, whether he rents or owns it, and he can hardly afford to neglect doing everything in his power to make it attractive.

After the grounds have been made tidy and attractive by thorough cleaning, repairing, and repainting, the outstanding single item in the program of planning or replan-

ning is the plan or map showing existing conditions.

The Plan. Much of the unprofitableness, inefficiency and unattractiveness of Kansas homes is due to the lack of an adequately thought out program of development. It is true that some people have the ability to think out a logical program of improvement but these individuals are rare. Careful planning with pencil and paper eliminates many of these inexcusable and unfortunate mistakes. The importance of having a plan cannot be overemphasized. Experience has proved that the reasonable course, that of drawing a plan with proper foresight, is wiser, safer, surer, and less expensive than haphazard planning and planting.

There are several advantages in having a plan. First, it enables one to work out a definite program for improving the yard which may be gradually developed over a period of years. Second, a drawing is a miniature of the various portions of the house and grounds as seen from above. This enables one to work out the proportions of the various parts of the yard and fit them together in one harmonious whole. It also enables one to plan pleasing tree and shrub groups and accurately figure the kind and number of each kind needed.

Many people are reluctant to consider landscape im-

provement of their homes because they do not feel that they can afford to undertake a comprehensive plan. This is probably due to the feeling that it must all be done at once. Granting that the sooner the planting is done, the better, because it takes time for plants to grow, there is no reason why the development may not be done a part at a time. The best way in such cases is to study the situation and visualize a complete ultimate effect, then decide what planting or grading or other work is most needed. One must think out the successive steps to be taken, according to the amount of expense that can be devoted to that work and make each move count so that an obvious improvement results. The plan must be followed closely to guard against extravagance through overdevelopment when the work is done on a budget basis. The expense in following a plan is really very moderate when one considers the enjoyment and pleasure that the whole family derives from the development.

The first step in making a plan is to locate upon the paper the outlines of the property, buildings, and all other existing features, including the plant material, which would have an influence in the general design. This can be accomplished in many cases by a paced and measured

survey, the most important features being located by measurement and the less important being located by stepping off the distance. The importance of the accuracy and completeness of data cannot be overestimated because it is upon this plan that all subsequent additions or changes are based.

Often the use of coordinate paper which can be purchased at any bookstore or can be made by dividing every inch into eight or ten squares each way, will facilitate getting the measurements properly transferred to paper, as the paper is divided into squares which can be taken as equal to one foot square or two feet square depending on the size of the grounds. Objects can be located by measuring this distance at right angles from some known place, such as the side of the property or side of the house, and be transferred to the map directly by counting in each direction the number of squares (Plate I).

With this map or plan of existing conditions at hand, a sufficient number of studies of possible future arrangements should be made in order to bring out the best possible arrangement under existing limitations. It is possible to handle the problem of organization in a simple way. One can easily cut out a house plan, garage, and

other buildings on separate pieces of paper at the proper scale and move them about on the plan at will. After a critical examination of these studies, a permanent plan embodying the best ideas, arrangements, and design contained in each, so far as they comply with the unalterable existing conditions, should be drawn on tracing paper. This accepted plan or guiding program of future development should be supplemented by a budget of time and funds for its eventual accomplishment. This is a most important step toward a future plan of beauty and convenience adapted to the individual home and living conditions.

Important improvements can be made by carefully rearranging the walks, drives, fences, and small structures such as clotheslines, poultry yard, and garage. These changes should be made first, as they form the skeleton of the final plan. Such changes may be conveniently studied by dividing the grounds into three conventional areas according to their definite functions--the entrance or public area, the private or living area, and the service area (Plate II).

Public Area. The entrance division, which includes the front lawn, driveway, and walks, is generally that portion of the property which the public sees from the

highway or street and from which visitors receive their first impression of the place. The general appearance should be neat, simple, dignified, hospitable, and pleasing. An ample front lawn area rising gracefully toward the house, bordered by trees and shrubs, and well maintained, will do much toward creating attractive home grounds. If possible, the view of the house should be framed with trees. The importance of foundation planting and its careful consideration cannot be overemphasized.

Private Area. The private or living area is the most important area to be considered. It is that portion of the grounds where the family may enjoy privacy in a pleasing out-of-door setting without being in full view of the neighbors or of the passers-by. The living area should be in direct communication with the living room or living porch. This area offers more possibilities for variation of treatment than any of the other areas. It is here that the flower garden, perennial borders, pools, rock gardens, and garden furniture should be located. There are two general methods of treatment in developing this area--formal and informal. The usual and most attractive development where there is enough space is a spacious lawn area bordered with well-arranged shrubs and flowers and sheltered

by beautiful shade trees.

Service Area. The service area should be to the side or rear of the house, usually screened from the house and public area by lattice or planting. It is that portion of the grounds required for performing the necessary, but often unsightly, requirements of the dwelling. The service area is close to the service section of the house. It should include a convenient laundry yard for drying clothes, and provide for such other service functions as are needed about the dwelling. The vegetable garden should be included in this area or directly adjoin it.

The walk connecting the house to the garage, the barns, and the poultry yards should lead directly from the back and side doors. This area should provide ample space for garbage cans, trash burners, and other necessary equipment for keeping the grounds clean and neat. The unsightly appearance of many back yards is often due to lack of arrangement and inconvenience of location.

In many home grounds, however, the back yard must serve as both service and living divisions. With good planning this can be conveniently and attractively done.

Recreational Areas. Depending on the habits and customs of the household, recreational areas may include a

private shady lawn, picnic area, child's playground, tennis court, horse shoe court, swimming pool, croquet court, or any number of other game areas. The recreation area may even include such areas as vegetable garden, flower garden, fruit garden, poultry runs, or rabbit runs, when they are used as forms of recreation or hobbies. This area may be developed either as a separate area or in combination with the service or private areas depending on the type of recreation pursued.

A shady lawn or picnic area may be located in or near the private area. This may contain an outdoor fire place, tables and benches, and other equipment, which, if placed in a shady wooded area, may be the source of a great deal of enjoyment.

The children's playground may contain a sand box, swing, slippery slide and other playground equipment which will have a tendency to keep the children at home instead of running to the neighbors to play. This area should be well shaded and enclosed. It should be located near the living room of the house and entered either through the living or service area and never through the public area. In this way the adults of the home may be more observant of the activity of the children.

The tennis court, horse shoe court, and croquet court should be placed far enough from the house to avoid breaking windows and far enough from the gardens to avoid the necessity for hunting lost balls in the garden. This area should be screened from view of the street and from the house. The swimming pool can be made an object of beauty if it is planned and planted with that thought in mind. It should, however, have some kind of enclosure.

Poultry and rabbit runs should occupy an area near the service area away from the house for obvious reasons. These areas should be shaded and sodded for economic as well as aesthetic reasons. A nicely constructed fence covered with vines makes a neat and attractive enclosure for this area.

Vegetables and fruits may occupy a part of the flower garden, but if grown for economic reasons they will require larger areas. The flower garden may be a part of the living area or it may be in combination with the vegetable garden in the service area. Under all circumstances these areas should be located near a water supply on good soil and should have a good sunny exposure. Fruit trees may be introduced as shade trees on the lawn or, if a greater number is desired, they can be planted in an orchard if room permits.

A study of the general arrangement and coordination of these divisions is the first step in the development of a home grounds. Such a study answers the questions as to what purposes the home grounds are to serve and what general arrangements of the grounds will serve these purposes in the most convenient and pleasing manner.

Grading. Before the grounds can be planted or otherwise developed, they must be graded. Some grading is necessary on practically every home site whether new or old, farm or urban. This should be done before seeding and planting. In determining the grades, it is well to remember the fundamental objects of grading which are: to produce a pleasing setting for the house, to provide surface drainage away from the buildings and for every portion of the grounds, and to smooth off the irregularities of the surface of the lawn areas.

Before any construction work is done, the topsoil should be removed from all areas where the buildings, pools, walks, or drives are to be located, and from all areas where fills or cuts more than one foot deep are to be made. This topsoil should be piled in convenient locations for future use. This should be kept free from debris and should not be worked when the soil is wet and heavy as this soil

will later be used as surface soil for the lawn and other plantings so as to avoid planting on heavy clay subsoil excavated from the basements.

It is important to carry surplus surface water away quickly. Whenever possible, the site should be graded so there will be a slope away from buildings in every direction. A fall of one-half inch to the foot or four per cent will in most cases be satisfactory. In grading large areas for lawn purposes, the shape of the ground should be made to resemble the ground that surrounds it and of which it seems to be a part. Grading for lawns requires the smoothing up of irregularities, but except in some very special cases, a level lawn should not be constructed. In grading, one should endeavor to preserve the slight natural slopes and curves of the land, remembering that nature never produces perfectly level surfaces. The natural undulations, the gentle rises into banks or mounds, a gradual fall into regular depressions, all add attractiveness to the lawns and resemble the natural landscape in character. Grading should be pleasing in appearance as well as practical. It is possible to conform to all the requirements of watershed and easy approach and yet not have a pleasing grading job. The general rule is that slopes should be gradual and easy.

A slightly rounded surface is more pleasing than a plane surface and a slightly concave surface is more pleasing than a convex one.

A steep slope close to the house should be avoided. The drop for the first twelve feet should not be more than six inches. If possible, the area for a distance of twenty feet or more around the house should be as level as possible with just enough slope to assure good drainage. The remaining distance to the property line may slope as much as six feet in one hundred. A considerable difference of levels between the house and street will often require the use of retaining walls and terraces to make the necessary transition. The maximum slope that can be given in an area largely depends upon the maximum slope that can be given the approach walk or drive.

Terraces near the house are really a part of the house and should be so considered and designed. The width of the terrace should be such that it is in scale with the building. It should be remembered that terraces are always hard to maintain and where they are not a necessary means to an end they should be avoided. Where the difference in elevation is not too great for the distance, an attractive way of handling the slope is found in the use of an ogee curve.

When the house is located near the property line or road, the method of grading is largely determined by the difference of the elevation of the grade level of the outside walk or the road and the grade line of the house. When the level of the outside walk and the grade line of the house are practically the same, it is best to grade the lawn so that it slopes away from the outside walk and then rises to the house (Plate III, Fig. 1). When the house is considerably below the street level, the lowest point in the lawn should be some distance away from the house to make drainage possible (Plate III, Fig. 2). If the house is above the level of the road, the grounds graded in an ogee curve from the street to the road to the house will be found most pleasing to the eye (Plate III, Fig. 3), while a lawn graded to a convex surface will not prove so satisfactory, as shown in Plate IV, Fig. 1. If the difference in grade is great, the use of a retaining wall is necessary (Plate IV, Figures 2, 3).

When grading has been properly done, most of the surface water will be taken off. Sometimes, however, grading alone cannot care for all excess surface water, and catch basins must be used. Basements of homes are often wet due to faulty grading and drainage, therefore, grading must be done carefully.

Construction of Walks and Drives. The construction of a walk or drive should be such as to provide a most acceptable surface at the seasons of the year that they are to be used. The standard width for walks is five feet. One-way drives should be eight feet minimum with a preferable width of ten feet, and two-way drives should be at least sixteen feet wide.

Since walks and drives are more or less permanent features, they should be constructed carefully. The grade of a walk should be gradual, not more than one-half inch rise per foot; however, rather than build steps, there may be a grade of as much as one inch per foot. If a grade is such as to require steps, a riser of six to seven and one-half inches is the most comfortable height for adults; but for steps used chiefly by children the riser should not exceed five and one-half to six inches. The product of the riser and the tread should approximate 75 if the steps are constructed with a nosing. The sum of the two risers plus the tread should approximate 27 inches for steps without a nosing. The width of the tread should never be less than 12 inches for steps without a nosing (Plate V, Figures 1, 2). A tread requiring three footsteps from one step to the next is often recommended.

When laying off drives, one should remember that a six

per cent grade is the ideal grade. A ten per cent grade is usually considered as the maximum except in hilly regions, where a grade of 12 to 15 per cent is accepted as the maximum.

Walks and drives may be constructed of concrete, flagstone, brick, macadam, or gravel. All of these materials are good. Concrete is perhaps the most common walk and drive material used, and it is probably the most permanent; it is, however, the least desirable from an artistic standpoint. Concrete is hard, mechanical and cold, and does not harmonize so well as other materials. Several companies supply chemicals that give very pleasing results when mixed with the cement.

Flagstone, brick, and tile, when properly chosen, will harmonize with the natural surroundings in a remarkable way and should be used more extensively. Macadam and gravel walks and drives require more care than those constructed of the materials already mentioned, but are valuable because they blend well into the landscape picture.

Stepping stones are useful where a large amount of passing is not necessary (Plate V, Figures 3, 4). They should be set level with the top of the ground in order that a mower will pass over them. The stones should be laid 20 inches from center to center. They should always be set

firmly, and each stone should be large enough to assure good footing. When grass comes up between the stones, the walk is hardly noticeable and does not break up the lawn area.

Planning the Farm Home Grounds

Fundamental Factors in Farmstead Planning. A farm, with its economic and social headquarters centered in the farmstead, is both a business and a home. The problem of farmstead planning is, therefore, involved and intricate, demanding both foresight and intelligent application of the fundamental elements of design. The farmstead is the place where the family dwells--a home. It is the main office of the business of farming, the concentration plant, the storage area, and the workshop of the farm. Usually it is the highest valued area of the entire farm.

To measure up to the name farmstead, this area should be so arranged in all details--buildings, drives, walks, fences, feedlots, lawns, trees, and gardens-- to best fit the use for which it was intended, the people who are to use it, and the varying general and local physical and economic factors which are operative in the immediate neighborhood.

Man consciously or unconsciously is greatly influenced by his surroundings. Stupid and commonplace surroundings at length breed a dull and unimaginative outlook on life and render the mind insensitive to new ideas and impressions. The environment of the farmstead must not be characterized by disorder and ugliness, which are first the result and later the cause of careless habits of work and thought. A sound home environment not only expresses orderly habits of thought and work but in turn creates those orderly habits. It has been said that the rural population is the seed bed of the human race. If this be true, then that seed bed should receive special thought and study for its development, cultural care, and constant protection. The rest of the fundamental uses of the farmstead; viz., utility and livability; must be held uppermost in mind in any consideration of farmstead planning. Utility relates first to orderly arrangement of farm buildings for convenience of operation and efficiency of production, and, second, to the convenience or relation of the farmstead to the farm lands and to market. Livability comprises those amenities resulting from an attractive and appropriate farm residence and immediate grounds and the creation or preservation of beauty in adjacent and distant

landscapes.

The type of farmstead to plan is determined largely by the physical or natural factors embodied in the land itself, its characteristics of surface, soil and climate, with their effect on the types of farming.

The ground's surface is the result of natural forces which have been acting for centuries slightly influenced by the work of man. While the surface of Kansas is largely prairie, broken by streams and ridges or hills, many variations in the surface shape have resulted from glacial and alluvial deposits and years of erosion. These major surface characteristics have an important influence on the types of farming in various districts. The minor surface variations, such as hills, valleys, and water courses, are of still greater importance as influences which determine the actual land which can be put to crops, the percentage of pasture, the characteristics of the farm operation, and the natural features of the particular landscape. The type of farming and the nature of the landscape combine to set the general style of farmstead development. The comparatively level prairies of central and western Kansas give a high percentage of tillable land. This encourages a maximum of high-value crops at the expense of wooded lands and native pas-

tures. Much permanent landscape beauty resulting from these elements is subordinated to the seasonal beauty of wide areas of growing crops, waving grains, or golden harvest fields, and during a large portion of the year to dull, hot, cultivated fields, barren of vegetation. Again, the landscape character and the type of farming influence the farmstead development.

Next, and hardly of less importance than topography, is the character of the soil. Topography has great influence on the local types of farming and resulting farmsteads fitted to meet the local uses. Its effect on what may be grown with greatest success helps to determine the layout of the farmstead and the equipment that will best serve the particular type.

The climatic factors which are outstanding in influencing the farmstead are rainfall, temperature, sun and wind. While the wind in itself has but little effect on the type of farming or crops produced, it does indirectly affect the weather variations and directly affect the planning of the farmstead. The direction of prevailing winds determines the location of windbreaks, odor-generating buildings within the farm group, and the pleasant livable areas of the property.

All of these factors of surface, soil, and climate affect not only the grouping of the farmstead buildings, the windbreaks, gardens, and trees, but also the kinds of plants used in the development.

The visual beauty and efficiency of operation on the farmstead depend on three things: the fitness of the farmstead to its use, to the people who are to use it, and to the general and local physical and economic factors of the area concerned. A typical farmstead must of necessity meet the specific demands of each farmer, his family, and his employees. Principles theoretically desirable in its plan must be adjusted to the end that maximum aesthetic and economic excellence shall result. The local conditions of topography, soil, climate, type of farming, financial means, and social relations will then be expressed in the size, shape, arrangement, and design of each part of the composition and the resulting landscape effect. The landscape plan for the farmstead, then, must be specific, adapted to a definite farmstead and that farmstead only, however, there are general principles that apply to every farm unit and it is these suggestions which have been discussed in this thesis.

Planning a new farmstead offers the widest range of

opportunities for illustrating the principles which govern good design in this type of landscape development. Since one is starting from the beginning, he can often select the site, locate the operating areas, arrange the farm building units and farm house groups, and correlate the functional parts. The farm home, surrounded as it is by broad stretches of open landscape, should reflect this freedom in its design and planting. This should be kept in mind constantly from the beginning of the planning.

Selecting a Site. After the farm has been selected in so far as possible, because of its convenient accessibility to church, school, markets, roads, utilities, and so on, as well as for its natural landscape beauty--including trees, views, streams, and topography--quality of tillable soil, and surface adaptable to the type of crops and farming desired; still there are other important things which must be considered in choosing the farmstead site.

The whole farm building group should be located centrally on the farm for efficiency of farm work, minimum cost of carrying waterlines, and a minimum cost of fencing, as well as for freedom from the annoyance of dust, noise, and danger of a busy highway. The farmstead should be readily accessible to the highway which facilitates obtain-

ing utilities, electricity, and telephone, and getting produce to market. A moderately elevated area which slopes gently to the south and east adds greatly to the attractiveness of the area. It should be near a potential supply of pure water which is immediately accessible or easily secured and managed. The site may offer protection from winds through the ground form or natural woods, and from excessive heat through natural woods, shade trees, and air drainage due to ground form.

Location of Operating Areas in Relation to the House. If a new farmstead is being planned, naturally the first consideration is the location of the dwelling. As the seat of the family culture, the haven of many years, it deserves this first consideration. More attention heretofore has been paid to the arrangement of the business elements of the farmstead--the grouping of the barns and yards for convenience--than in making the surroundings of the house more beautiful and inviting. This of course is important but entirely over-emphasized. Good arrangement of the grounds takes into consideration usefulness, convenience, and beauty. Correct planning includes all of these features without subordinating any of them. The plan of the house must be considered at the same time as the

plan for the farm home grounds. They inter-relate and function together for the best results. A beautiful house unrelated to the ground or surrounding landscape is not displayed to its best advantages. It can only be beautiful or approach beauty insofar as complete harmony of the plan is achieved both inside and outside the building. The living quarters of the house must relate to the living sections of the grounds; the working quarters of the house must tie up with the working sections of the farm.

Plan. In order to study the arrangement of a farmstead or the planning of farm buildings in relation to each other and to the grounds, plans should be worked out on paper. When the approximate location and site of the farmstead have been decided and before any building is done, two plans should be prepared. The first plan should show the location of the farmstead, all buildings, all roads, lanes, fields, lots, streams, drains, ditches, fences, and permanent natural objects, in block form. This aids in the proper location of the building groups in relation to the fields and other parts of the farm. The second plan should be a farmstead plan drawn at larger scale to show the details of the general farm plot. In this plan, all of the buildings should be shown with their general interi-

or arrangements indicated, and all accessories such as fences, gates, lanes, driveways, walks, trees, shrubs, gardens, etc., located, each feature being placed with due consideration of its use and its relation to other features.

The working out of a farmstead plan is of inestimable value to the farmer whose land is unimproved, for careful study incident to its preparation may save him time, money, and annoyance. On the farm a great deal of time and unnecessary labor can be saved by carefully planning the various buildings and arranging them in proper relation to each other. In laying out the plan, the route to be traveled in doing the chores should be borne in mind. The buildings should be so placed that in performing the routine work unnecessary walking is avoided. The use of a plan also enables one to devise a definite long-time program for gradual improvement of the yard, and still work out the proportions of the various parts of the yard and fit them together in one harmonious whole.

Division of the Grounds. The whole problem can be approached by dividing the farm house grounds into functional areas including the area on which the house is to be built. These areas are, broadly speaking, public and private. The general area designated as public may also

include a semi-private area in that section devoted to approaches and drives. The private area is divided into the garden, play, and service or work sections, and the public into a foreground lawn, orchard or approach. The size, shape, and specific location of these areas are determined by a study of the practical needs of the farmstead and by the principles of landscape design. These principles include: unity--a complete, orderly arrangement of the entire grounds; coherence--that close logical connection between elements, areas, structures, plantings, etc.; and balance--the equalization of attention among the various objects which enter into the design. Trees, then, and lawns are the most usable and most inviting elements of the country home.

The location of the house and room arrangement largely determine the future development of its surroundings. There is, or should be, a definite relation between the use of the house and the use of the grounds. The kitchen is the service portion of the house and the dining room and living room compose the living or leisure portion. The grounds should be developed so that the service and leisure parts of the grounds correspond in use and position to the respective parts of the house (Plates VI, VII).

The service area should include the utilitarian features of the grounds, such as garage, driveway, clothes yard, vegetable garden, barn, barn lot, and out-buildings. The area in front of the house is the public area, or that area which most people feel duty-bound as good Americans to develop as attractively as possible so that their grounds will enhance rather than mar the general appearance of the community. Unfortunately, too many people consider this area the all-important feature of the grounds. Enough area, and only enough, should be left in front to give a good setting for the house and provide an attractive outlook from the house. It should be set back from the highway far enough to provide privacy within the grounds as well as an easy natural approach to the house.

Location of the House. To give the maximum amount of pleasure and usefulness, the new farm house should be located at least 150 feet from the highway in a dominant position, upon a spot having good natural drainage and providing pleasant views from the living quarters. This spot should be so located as to afford room for the stable group in a direction opposite that of the prevailing winds. The tendency to build nearer the highway to economize in surfacing the entrance drive is poor economy when the per-

manent comfort of the family is considered.

Naturally the house should be planned to provide the sunniest exposure and the best views from the windows of those rooms most frequently occupied by the family. A view of a distant river, picturesque valley, range of hills, or even a picturesque pastoral view of grazing livestock in a relatively level pasture will add to the pleasure of the home without adding to its cost. The exposure of the site is an important consideration, for plenty of sunlight makes a dwelling bright and cheerful and may be beneficial to the health of those living there. Sunshine is especially important during the winter months. A good exposure to the south is necessary if the living room and dining room are to receive plenty of sunlight during the winter season.

Since the living side of the house should have a south exposure, the larger lawn area and the most pleasing landscape effects should usually be seen from this side of the house. Sufficient space should be left, however, between the house and the boundary along the less desirable side for driveway and walks. If so located, the attractiveness of the lawn area is left unspoiled by these necessary features. This location of the walks and drives

will in turn determine the location of the garage, which must be in the vicinity of the house but also tie directly with the driveway. The garage should be easily accessible from the house by a good walk.

After the location of the functional areas have been determined by the location and orientation of the house, it is necessary to develop these areas to best fit their intended use. Since the orientation of the house and arrangement of rooms should be determined by the exposure to the sun and the direction of the prevailing winds and not by the direction of the highway alone, the position of the functional areas will of necessity be determined by these factors. The garden area will, then, be to the south, southeast, or southwest to be adjacent to the living rooms of the house. The service area should be near or adjacent to the kitchen and service side of the house and the public area will be determined largely by the location of the highway together with its relation to other parts of the whole design. The development of these areas is influenced greatly by the location and development of the various utilitarian features of the farm grounds.

Location of Farm Units. With the approximate location of the house decided upon, the barnyard and other

areas should be planned with consideration for the prevailing winds which, in most parts of Kansas, are from the south and southwest during the summer, and from the north and northwest during the winter months. The new barnyard may be located, then, to the northeast, east, or southeast in most localities. This is a consideration of more importance on those farms devoted to the raising of livestock.

Poultry. The poultry yard should always be easily accessible from the dwelling, but it should be at least one hundred feet distant. Even though this feature is utilitarian in function, it may be pleasing in appearance. The poultry yard may consist of a nicely painted building with well-planted poultry runs which are attractive as well as healthful places for the poultry to live. Too often the poultry yard is an area that is poorly kept, however, successful poultry raisers have attractive buildings and well shaded areas for their poultry. Attractive poultry yards have been found to be more satisfactory than the old junk-laden place for economic as well as aesthetic reasons.

Vegetable Garden. The vegetable garden should be

near the house and accessible from the kitchen in the service area. It may be a part of the flower garden or it may be developed separately. In either case it should be attractive. Ample sunshine and good fertile soil are important factors in choosing the location; they should not be forgotten. Since rows running from north to south best foster plant development, and since straight rows insure less labor and better success with garden tools, haphazard planting, or any informal arrangement, will be undesirable in the usual garden. Where the place is extensive, and garages and other service buildings have their place in the scheme of things, the vegetable section must bear its proper relation to them.

Laundry Area. The laundry area should afford a segregated space for drying clothes and is a necessity where there is much drying to be done. There are many devices upon the market upon which to hang clothes and which can be removed from the yard when not in use. Many of the devices are impractical on the farm where a large amount of laundering must be done. At least two hundred feet of line space is needed on the average farm. The posts should be vertical and they should be substantial enough to keep the lines taut. This area should be en-

closed or set off from the other parts of the yard by the use of shrubs or a vine covered fence. The area should be in the service area accessible from the house.

Location of Well. Another important feature on the farm that must be given a great deal of attention is the location of the well and supply tank. The well must be placed where there is an ample supply of fresh, pure water. It should be located as near both the house and barn as possible but not near the stable yards. The storage tank should be located as near the well as possible. The water lines must be located under ground far enough to be below the frost line to assure free passage of water during the winter months. If the water is pumped by the use of a windmill, planting of large shade trees near by will be forbidden as they shut out too much wind. Careful planning is necessary to locate this feature in proper relation to the other areas.

Enclosure. The fence or enclosure is an essential part of beautifying the farm grounds. It serves several purposes, such as protecting the plantings from stock and setting the boundary of the area to be landscaped. Fences should be constructed substantially and attractively, and located properly in relation to the house, driveway, and highway. The size of the area enclosed by the fence often

determines the success or failure in the project. Too small an area, such as thirty or forty feet left in front of the house and ten or twenty feet left on the sides, cannot be successfully treated. On the other hand, if too much space is included in the lawn area, it is highly probable that it will not receive proper care. About one-half to three-fourths acre is usually recommended for the average yard.

The following dimensions will enclose approximately three-fourths acre: front yard--highway or fence to front of house--seventy-five feet; back yard--barn lot to rear of house--fifty to seventy-five feet; service side yard--driveway to side of house--twenty-five to fifty feet; private side yard--fence to other side of house-- fifty to seventy-five feet. This area is large enough to give ample room for a pleasing development of the average farm home and it is small enough that it can be cared for without difficulty.

The enclosure itself should be well constructed if it is a wall or fence and well cared for if it is made up of plantings. The gates and gateways should agree in character with the fence. The whole should be in unity with the whole landscape composition.

Walks and Drives. Walks and drives are elements of utility rather than of beauty in the development of the farm home grounds. They are more expensive to construct and maintain, if done properly, than the same area in lawns or plantings and are not as pleasing in appearance. They also tend to break the unity of the area through which they pass. Therefore, their extent should be confined to the actual needs of the grounds.

Walks and drives should be designed to lead in a convenient, apparently direct way to the most common points of destination. They are the directing lines for traffic upon the grounds. In addition to being the most reasonable lines to follow, they should be pleasing in their development and should be harmonious with the landscape effect of the grounds.

The entrance to the farmstead from the public road should be so located as to facilitate direct and easy access to both house and barn and make the approach seem natural and easy, while appearing to lead primarily to the house. It should be direct, but usually not straight toward any of the buildings. Where the buildings are near the highway, a good plan is to have a single road enter the grounds, then divide, one branch going directly to the barn

and the other past the side of the house, passing near the main entrance door, then near the kitchen entrance, rejoining the road to the barn in such a way that the traffic may conveniently pass to the barn or return to the highway (Plate VIII, Figures 1, 2, 3). This arrangement of a circular drive permits traffic to reach the barn without passing close to the house, while not greatly increasing the extent of road surface. The entrance drive should enter the property at right angles to the highway usually near one of the corners of the home grounds to avoid breaking into the center of the large open area in front of the house.

Usually as farm houses are designed and as farm drives are laid out, the main entrance to the house is in front while the entrance drive is along the side of the house. Under these conditions, the main entrance to the house is not conveniently accessible from the entrance drive and is, therefore, seldom used. Visitors enter the back door and enter the kitchen instead of the front door. Likewise, the front walk leading directly from the highway to the front door is inconvenient and seldom used. A more logical location for the main entrance to the house is upon the side adjacent to the entrance drive rather than upon the

front facing the public highway. Likewise, the entrance walk should be laid out from the main entrance of the house to the nearest or most convenient point of access along the entrance drive (Plate VIII, Figures 1, 2, 3).

All roads and walks should be so located as to give the feeling of leading to their destination without unnecessary turns. This does not mean that they must be straight. They might be slightly curved and yet give the impression of leading to the desired end. Where the distance is not too short, a curved walk or drive usually gives a more pleasing effect than a straight one. The amount of curve need not be great; often a deviation of the width of the walk or drive will suffice, while one and one-half times its width is ample. On the other hand, curves should not be too abrupt, and there should appear to be a reason for each. Appropriate plantings can often be made to supply this reason by locating them at the beginning of the curve. In rolling or hilly country, the topography determines the curves in the drives and can be used as an excuse for them.

The entrance from the highway should largely reflect and suggest the character of the farmstead. The less formality there is in the farmstead the less there should be in the entrance. Some special treatment is necessary,

however, to attract attention to it and set it apart from the rest of the boundary and to invite entrance. The character of this treatment should depend on the character of the farmstead and must so nearly correspond with the treatment of the grounds around the farmstead that it can be united with it without an abrupt change of style.

Plants can be much more easily arranged to emphasize an entrance without overdoing it than can architectural features. Entrance plantings may either be formal such as hedges or regularly placed specimens or clumps or they may be altogether informal and irregular. As with all other details of the farmstead, development at the entrance, whether primarily of plants or of other material, must be appropriate in size, shape, and kind.

The location of walks and minor drives should receive careful attention and consideration. Walks are very necessary, especially on farms where mud is common during the rainy season. The poultry yard, stable yard, service yard, driveway and usually the garage should be reached from the kitchen by good walks just as imperatively as the driveway must be reached from the front door by good walks. The coal or wood chute must be accessible from the driveway by a minor drive to guard against the necessity

of breaking through the lawn when a supply of fuel is needed. Walks around the house should be at least five feet from the foundation to allow for an appropriate foundation planting. The main walks should be at least four feet wide. If the walk is usually used by persons walking alone, three feet is sufficient width; if often used by couples, a walk four feet wide should be provided. Service walks may be made two feet wide or wider, depending on their use. The drives should have a minimum width of eight feet when the distance to the main road is only slight and there is to be no passing on the drive; however, a width of nine or ten feet is better. If cars are likely to pass on the drive, it should be not less than fourteen feet, preferably sixteen feet. Curved drives must be wider than straight drives because automobiles do not track in turning.

In laying out the turn around, it must be remembered that the minimum turning radius of a car is twenty-nine feet which means that the turn around must of necessity have an outside diameter of at least fifty-eight to sixty feet, with an inside radius of eighteen feet (Plate VIII, Fig. 4). This allows a drive width of eleven or twelve feet on the curve which is the minimum width that should

be used. The width depends largely on the use to which the drive is put. If the entrance drive is used for moving farm machinery, naturally the drive must be wide enough to be of use.

As a rule, farm roads are made of the natural soil; they should be well crowned and provided with liberal outlets. Drives are more satisfactory when they are constructed with materials such as concrete, gravel, crushed limestone, brick, or slag. Since walks and drives are more or less permanent features, they should be constructed carefully.

Windbreaks. Any body of trees which gives protection to buildings or crops may be called a windbreak. The influence of a timber windbreak upon air currents is purely mechanical. Its effectiveness depends, therefore, upon how nearly impenetrable it is. The greatest benefit derived from a good windbreak is the protection it affords the farmhouse, farm buildings, and feed lots. A house protected by a windbreak is more comfortable in winter and is less expensive to heat. This protection makes barns and feed sheds warmer in winter, the livestock suffer less from severe storms, and the effect of cold winds on the farmer while working in the farmyard is reduced.

A well-planned windbreak adds beauty and color, and often a background to the farm house. A protected farmstead can be more successfully planted with flowers, shrubs, and ornamental trees. The windbreak also stops drifting snow and prevents the blocking of walks and drives.

Once established, the windbreak will use the land for a long time, and protect a very definite section of the farm yard. Hence, it is important to select the site carefully. Of first importance are its location with reference to prevailing winds, and the distance of the windbreak from the objects to be protected. The distance from farm buildings may be governed somewhat by the development and use of the land.

Our most severe winter storms are driven, most generally, by north and northwest winds. Such winds also are accompanied by lower temperatures in winter. To break the force of such winds, then, and to reduce the blowing and drifting of snow, the windbreak should, preferably, be to the north and west of the farmstead. In some parts of the state the prevailing wind is from the south and southwest, in this case broad leaved trees should be planted to the south side of the farmstead in addition to the north and west.

The windbreak should be at least fifty feet, and preferably one hundred feet, away from the principal area or buildings to be protected. A windbreak has an influence for a horizontal distance equal to fifteen or twenty times the height of the break. For example, trees thirty feet in height influence the force of the wind four hundred fifty to six hundred feet on the level. Planting trees one hundred feet from the nearest building then is well within the range of protection.

On the leeward or protected side of a windbreak, for a distance of ten to thirty feet, there is a zone of calm where large drifts of snow accumulate during the wind-driven snow storms. For this reason, it is necessary to plant from fifteen to thirty feet back from the farm buildings.

The length of the windbreak will be determined by the size of the group of buildings. It should extend at least fifty feet beyond the last building or area to be protected.

Wherever possible, the north and west sides of the windbreak should have five rows of trees. Evergreen windbreaks with three rows are satisfactory in sections of the state where evergreens grow favorably. A spacing of

twelve to fifteen feet is a satisfactory distance between rows. The distance between trees in the row should be ten feet. If the trees in adjacent rows are staggered, the wind will be prevented from sweeping between the trees.

The most effective windbreak consists of a mixture of broad leaved deciduous and evergreen trees. Evergreens retain their foliage in winter when protection is most needed, however, they are more difficult to start in unprotected areas than broad leaved species. The taller trees should be planted in the center row with medium height trees on either side to give the best effect.

Broad leaved seedlings one year old are large enough for windbreak planting. The stock should have vigorous root development, and most species will be from eighteen to twenty-four inches high when purchased as seedlings. Evergreen trees should be at least three years old from seed and be transplanted once during this period.

Planning the Urban Home Grounds

Fundamental Factors. The average modern home in towns and cities of Kansas today is on a small area, and the arrangement of parts and the allotment of space for such

demand very careful consideration, for correct planning at this point means a simplification of all later steps. Planning for space is the chief consideration in small city homes. The landscape development of small properties needs the attention of persons of good taste, and above all, should be executed with restraint. If there is any place where too little is better than too much, it is in small yards. It must be understood that a small place cannot be a large estate in miniature. The small yard must be simple. The size of human beings does not differ greatly, neither does the size of things they use. The furniture in a small living room has about the same dimensions as that in a large room; only there is less of it, each piece being in scale with man. Thus it becomes a fundamental consideration of small property designs that they contain fewer features than larger places, but that each detail shall be in scale.

In some respects, the design of small lots is different from that of larger home grounds, for the necessary parts, such as driveway, garage, drying yard, and vegetable plot, take a much greater proportion of space. Small places, then, need even more careful planning than large ones for the best results: they are to be compared

to small houses in which not an inch can be wasted. There, the living rooms are given the maximum amount of space, the kitchen and sleeping quarters being reduced to a minimum; here, the necessary drives and service area will be made as small as possible in order to give all the ground gained by planning to recreational or outdoor living room use. Spaciousness is the effect one tries to produce on the small property.

The problem of the small property is mainly one of planning, not planting. Planning should start even before the lot is purchased. Persons usually have fairly definite ideas about the style of house they will build. If they already own a lot, the house must be made to fit it in size and shape; if the house is chosen first, then a lot must be found suitable in type and shape. Ideally, both selections should go on together.

The exposure of the site is an important consideration in choosing a lot. Plenty of sunlight makes a dwelling bright and cheerful and may be beneficial to the health of those living there. Sunshine is especially important during the winter months. A good exposure to the south is preferable if the living room and dining room are to receive plenty of sunlight during the winter

season. Protection during the winter from the north and west winds is important in the city as well as on the farm.

The position of the house, as well as its general dimensions, and the location of the garage determine the size and location of the front, side, and rear areas (Plates IX, X, XI). Both house and garage are often placed without thought as to how they will affect the design of the yard. House plans are many times selected for interior convenience only, when in reality the convenience between inside rooms and their corresponding outdoor areas is fully as important. Surely, if home owners realized the possibilities of greater use and enjoyment which can be obtained, they would plan the house and grounds together.

Too often the landscape development is left to the man who buys the house. He later finds himself handicapped by such conditions as the house in the middle of a seventy-five foot lot, a garage at the rear of the property, no place for the drying area except in the rear lawn, a coal window on the opposite side from the driveway, a house with the foundation too high above ground to look well, and no connection between the living rooms and the rear lawn--the future garden. These are inexcusable mistakes that can be

avoided if a bit of planning is done ahead of time.

Location of House. The position of the house on the lot is of primary importance. In many cities, a minimum building line is established for each street; in others, conformity to custom has created a line. Where there is no standard already established, the setback is generally one-third to one-half the lot width. Deep lawns will not improve a street unless it is very wide; deep lawns along a narrow street only emphasize its narrowness. The front yard which is wider than deep makes a lot appear wider than it really is; the deep narrow yard makes it look narrower. Enough space is needed in front of every building to present one architectural unit, but beyond that, land is wasted.

Front Area. The front yard's function is that of a foreground and a setting to the house. The depth should vary with the surroundings--greater in suburban districts and smaller where congestion occurs. The house should be located back far enough so the whole house can be seen as one unit without moving the head. The horizontal angle of vision for close-up objects is about forty-five degrees, consequently, one should be about the same distance from a house as it is wide, to see it well. The angle of vision

vertically is less than horizontally; tall buildings, then, need deeper foregrounds than low buildings.

Living Area. It seems to be a convention to put the house squarely on the center line of the lot. This is unfortunate and often means a great deal of waste space, because there is not a sufficient area on either side to be used for the development of a garden or expanse of lawn. If the house is placed to one side, however, there will still be room enough for an automobile drive on the narrow side, while on the other side an expansive and pleasing effect can be worked out because of the additional room (Plate IX). This space is generally utilized by a small formal garden or it may be an extension of the outdoor living room area.

When the area available for an outdoor living room is small, a formal treatment is especially desirable (Plate IX). Such an area might be developed adjacent to the living room and sun porch, making the boundaries an extension of the house lines. If room permits, an informal area can be developed (Plate X). This is usually more satisfactory, especially when children occupy the area part of the time.

Service Area. The service portion of the property

embraces the garage, vegetable gardens, laundry yard, drive, and all other outdoor working parts. The service area should be screened both from the street and the living portion of the house and grounds. The service area should be easily reached from the street and should be accessible to the kitchen entrance and to the entrance leading to the basement of the home. The drive is usually located close to the lot line on the kitchen or service side of the house so it can be used as a service drive as well as a private drive to the garage, which is located to the back and service side of the house (Plate IX).

The laundry area should afford a segregated space for drying clothes. If stationary lines are constructed, they are usually placed along the side of the lot to the back of the garage or along the other side of the lot. In either case, it should be screened from the living area. There are many devices on the market upon which to hang clothes, and which can be removed from the yard when not in use. When a removable post is used, it is not necessary to have a separate and screened laundry yard when the use of the grounds for drying purposes is required only one day a week.

Most home plots have a vegetable garden. It is

usually located in the service area, but it may be very pleasing in appearance. It should be arranged in a formal manner for ease of cultivation as well as for beauty. It should, of course, be placed where it has a maximum amount of sun and good soil and still be easily accessible from the kitchen.

Other features that belong in the service area are garbage cans, trash cans, and incinerators. These items are necessary equipment to have in keeping the grounds clean and tidy, therefore, every home should provide some area for them. The exact location would depend on the city ordinance. Some cities provide trucks or wagons to pick up garbage daily. In that case, the garbage can must be located near the alley to assure disposal of the garbage.

Walks and Drives. The location of the driveway entrance in the city place is determined by the lay of the land, the location of the garage, and the necessary point of contact with the house. The driveway and walks should enter the property at right angles to the street, but in some cases where there is a preponderance of traffic from one direction, the entrance to the drive can be planned to favor that direction. If the lot is a corner one, the driveway or walk should not enter at the corner, but a few

feet from the corner.

The walks and drives should be as direct as possible. Often, especially upon a small place, a straight drive will be the most desirable. When the driveway is placed close to one side of the property and parallel to it, a straight drive would be most desirable, for it thus becomes a part of the border arrangement and does not interfere with the lawn space. When a curve seems desirable, every effort should be made to secure a pleasing one and one that will take care of every demand made upon it.

A small city lot usually does not allow a turn around for the automobile, but instead the car must be backed into the street from the garage. This is usually the most satisfactory, if the lot is narrow.

An area for a car to turn in must be at least sixty feet in diameter, which is a rather large space to be given over for this purpose alone upon the city place. For this reason, the problem is handled in many other ways and a turn around is seldom enjoyed except as a part of the service portion of the grounds.

Unless there is a turn table in the garage and a turning space is desired, some scheme for backing and turning is necessary. This backing space for the car is secured in

several ways: by paving an area sufficiently large enough for the car to back out, without a definite track for the car to follow being defined, and by a spur which is planned to conform with the turn made by the car in backing out (Plate XI, Figures 1, 2, 3, 4). The radius of the curve in either case must be thirty feet. Often when the area in which to back out the car is limited, a scheme for backing more than once would be advisable.

Planting Considerations for Both Farm and Urban Home Grounds

Although the discussion of planting is left until last, it is not because it is of less importance in the development of an attractive home grounds, but rather to make clearer its true function. There is a widespread lack of appreciation of the importance of good design. Too often people think that no matter how poorly arranged and designed a place may be, it can be made beautiful by a few flower beds properly located. This idea of the ability of plants to beautify is not entirely erroneous, but it is certainly exaggerated. Although they can greatly moderate the very evident faults, they cannot hide them entirely.

While even a well-designed home grounds is bare and unattractive until properly united by plantings, on the other hand, plants may be so poorly arranged that they detract from the appearance more than they add.

It is extremely important that the greatest care be taken in planting a property. In every case certain elements or parts; namely, a house and several auxiliary buildings, drives, walks, and lawns, are used as working units. In order to unite these several disconnected elements into one complete harmonious composition, trees, shrubs, flowers, and grass are used. The realization of the fact that one is not so much concerned with the beauty of individual plants as with their relationship to the picture as a whole, is an important step in mastering the principles which govern planting.

Plantings when properly utilized will emphasize certain elements in the picture, and at the same time subdue or even conceal certain others. For example, certain lines of the house, a beautifully designed window, or an entrance may be emphasized; or again, a beautiful lawn with a border and background of shrubbery and trees will assume special significance. On the other hand, there are always some elements which may be considered as defects in the picture

and, in such a case, the function of plantings is to conceal. Such views as the garage, service yard, poultry house, and those beyond the grounds that are unsightly should be concealed.

In order that plantings may be utilized to the best advantage in the composition, the relation of the units to each other must be as follows: first, there must be unity; second, there must be balance; third, there must be a judicious arrangement of light and shade in order to bring out the real value of various objects; fourth, there must be harmony of shapes, sizes, and colors; fifth, there must be a moderate amount of contrast and variety; sixth, there must be repetition. All of these rules of composition must be kept in mind in the arrangement of plants; in addition to these, a few rules of common practice should be observed. Plantings should be made in groups rather than by individual specimens. A large group of one variety makes a more pleasing appearance than a group made up of many different kinds of shrubs or trees. Straight lines should be avoided as much as possible, except in the case of formal plantings. Plants do not grow in straight lines naturally; therefore, man-made naturalistic areas should not be planted in straight rows. Plantings should

be massed about the base of buildings, grouped about the junctions or curves in the walks, massed along the boundaries and corners of the property, but usually not along the front boundary of the property. When arranged in this way, an open lawn bounded with naturalistic plantings of shrubbery and trees will give the desired effect.

These plantings may perform other desirable functions also. They may be arranged to shelter the house from the winter storms and the summer heat or to enframe desirable vistas and thus accentuate their attractiveness. Masses of shrubs may be used to replace an undesirable fence or hedge. They may be planted to prevent people from wearing paths across the lawns and to unite the walks, buildings, and other elements of the grounds into one harmonious design.

Lawns. Lawns are the background or foundation against which all the details of the home are viewed. From an artistic point of view, the lawn corresponds to the canvas on which a picture is painted. It is the foreground and background that holds together the parts of the whole design. Small lawns broken up by scattered shrubs and flowers of the horse and buggy days have given way to large open lawn areas, which are more beautiful and far

more practical.

A good sod keeps the soil from washing away; it keeps down the dust and glare; it keeps the yard from becoming muddy and full of weeds. It reduces the summer temperature about the house through evaporation and lessened reflection. There is no doubt that wind blowing over a lawn, alfalfa field, or pasture is cooler and more pleasant than hot winds that blow over a stubble field or barren piece of land. A lawn requires less work to keep neat when it has become established, than any other form of yard arrangement.

The lawn should be as extensive as possible and should be framed with trees and shrubs around its borders. The feeling of spaciousness should never be marred by unrelated plantings of trees and shrubs or by the planting of flower beds. Since the lawn plays such an important part in the landscape picture, its construction and maintenance demand particular consideration.

Trees. Trees are of great importance in giving an attractive appearance to the home as well as in making it a more comfortable place in which to live. They should be planted with this twofold purpose clearly in mind. In most parts of the state, there is a need of protection from the

cold northwest winds of winter and also of shade on the buildings and lawn in summer. To meet the former requirement, when a windbreak is not advisable, groups or clumps of trees should be so located that they break the force of the winter wind. Where shelter is needed, it should be so located with respect to the buildings that the trees will not only give the needed protection but also form a background or setting for the buildings from as many points as possible. In addition to the trees providing the shelter, smaller flowering trees can be used in front to give added interest. In other large areas, particularly in the western part of the state, where protection is needed from drying southwest winds, a similar use can be made of shelter plantings.

Shade trees should be located first with an eye to their value as a setting for the building and then to the points at which shade would be desirable, since the trees will provide shade wherever they are set, but will make a good setting only when properly placed. A sufficient number of trees should be used, however, to make enough shade to invite outdoor life near the house. They should not be placed directly in front, but somewhat to each side so as to make a frame through which a view of a portion of the

front is obtained, and so that when they are grown they will partially shade the house without entirely covering the front (Plate XII, Fig. 1). A common fault is to plant too many trees and plant them so close that they keep out too much sunshine and air. For this reason, as well as for the sake of appearance, they should be planted far enough apart and far enough from any building that when the trees reach maturity their branches will not meet in front of the house or rub on the building.

It is usually desirable to plant a large shade tree or trees near the southwest corner of the house to give protection from the mid-afternoon sun. This may bring them to the rear of the house as a background, instead of as a screen in front. Trees should be planted behind the house to soften or accent the architecture, to shut out an objectionable view, or to give the house the appearance of being nestled in foliage (Plate XII, Fig. 2). Trees planted as close to the house as practicable is desirable, but the larger growing trees should be at least twenty-five feet from the nearest point where the branches might touch the roof of the house.

Not only should a portion of the front be seen from the principal view point, but there should be an open lawn

as a foreground. This lawn may be bordered on either side by plantings of trees or shrubs, or both, depending on the size and character of the development. If the lawn extends to the road or street, this side may also have trees, under the branches of which one may view the house.

A few trees and shrubs judiciously planted around the barns to partly hide objectionable views, and others to partially enframe them, modify the appearance of the farm house greatly. It must be recognized, however, that this is not as easy to accomplish without interfering with other vital considerations as in planting around the house. Small amounts of shade in the feed lots are very desirable but planting must be done with discretion. Shade trees interspersed at intervals in the livestock pastures are very desirable from both the aesthetic and economic standpoints.

Frequently trees are planted too close together. When planted, the ordinary tree looks so small it seems that it can never fill the space provided. Often trees are planted with the expectation of removing some of them, but when the time comes the homemakers have become so attached to them that the inclination to remove them is past; the permanent trees are ruined, and still the temporary trees

remain.

Small trees are more useful than the average home owner thinks. Small trees should have a dominant place on small home lots, for the large trees are often out of scale with the development. Small trees may be used for specimen trees if they are unusual, or they may be used for transition from larger trees to shrub masses (Plate XII, Fig. 3). Frequently they may be used to accent border plantings and for shade for garden features such as narrow walks, garden seats, bird baths, and pools. Many small trees bloom profusely even before leaves appear and they therefore add color to the garden in early spring as well as color and beauty in winter. Small trees should be used much more than they are.

Shrubs. Home grounds planted with trees without the addition of shrubs and flowers will still appear bare and unfinished. Trees provide the large masses of foliage but shrubs are needed to fill in the detail plantings. Shrubs should be selected and used for definite useful and ornamental reasons. The general uses of shrub plantings are: to harmonize the house with the planting around it; to mark the boundaries of the grounds; to emphasize views to and from the house; to develop an interesting skyline; to

supply a background for flower borders; to give seasonable beauty of flower, leaf, fruit, and twig; to screen unsightly objects; and to give privacy in the grounds.

Besides having a part of their framework hidden by foliage, the buildings also need to have part of their foundation hidden. The lines of a building are mostly straight and formal. To make these a part of an informal picture, it is necessary to have the straight lines broken and softened as much as possible. This is accomplished by using shrubs of varying heights and growing habits at the corners and angles of the house (Plate XII, Fig. 4). Plants are set at the corners in groups of three, five, or seven, to blend the upright straight line formed by the corners with the horizontal line of the earth. The front entrance likewise is planted so that it becomes the outstanding feature of the front of the house. Not only must the arrangement and grouping of the shrubs be pleasing to the eye, but the plants chosen must be adapted to the situation. Plants that will tolerate shade must be chosen for north exposures, and those that tolerate hot dry situations will be chosen for south exposures. High or taller growing shrubs are placed at the corners and often within the angles of the house. These should not be so large as to make the house seem small. Low shrubs should

be chosen for beneath the windows and at the corners of low porches, low steps, or terraces. Continuous groups of plantings should be avoided; portions of the foundation should be left exposed, and the lawn should be carried directly to these so the building will appear to be supported (Plate XII, Fig. 5).

Only a few different kinds of shrubs, well placed and spaced, are necessary around the average home foundation. The tendency is usually to have too many kinds. With a large and massive house, six or seven different kinds of shrubs may be arranged in a pleasing manner, but if the house is small, a fewer number should be used.

Frequently shrubs are planted too near the foundation to develop properly. Small shrubs should be kept at least two feet from the foundation. If large shrubs are planted, they must be planted three or four feet away to give them sufficient room to develop to maturity. Straight rows should be avoided in foundation planting as well as in border planting. This effect can be avoided by planting in a zigzag manner (Plate XIII, Fig. 1).

Shrubs in border plantings should be arranged in informal groups which make up a series of interesting bays and promontories, with enough variation in the height of

the various shrubs to make an interesting and pleasing skyline (Plate XIII, Figures 2, 3). The texture of foliage, color, and form of the shrubs all determine largely the effect that will be given by the whole composition, so it is of primary importance to study these characters in choosing shrubs for planting. Shrubs with foliage of relatively fine texture should not be intermingled with shrubs having coarse foliage. A gradual change from coarse to fine is necessary.

The importance of an enclosure or screen planting cannot be overemphasized. The service area should be screened from the view of the passer-by. This screen can be planned in combination with the shrub border or it may be more or less formal by the use of a clipped or unclipped hedge or vine-covered fence. Shrubs may be used to form the enclosure and background for the outdoor living area.

There are many native trees and shrubs available in Kansas which can be used in ornamental plantings. They are better adapted to Kansas climate and soil conditions than many cultivated shrubs that are on the market, and they are often more beautiful. Exotic plants should be avoided as much as possible as they are foreign in appearance and do not work into the natural landscape.

Flowers. Good flower color in either the flower border or the formal flower garden is one of the essentials of a complete home landscape. Proper relationship between the flower beds, whether formal or informal, and the rest of the planting is necessary if a harmonious development is to be the result. Flowers grown in the central lawn area are not in good taste and detract from the landscape effect. The flower border needs to be combined with some more permanent feature of the home grounds, the fence line, border planting, or foundation planting (Plate XIII, Figures 4, 5, 6). A formal garden must have a setting of its own, and should be enclosed by either fence, hedge, or shrub border (Plate IX).

Usually flowers are selected for their color, soil adaptability, hardiness, and, most important, their ability to provide a succession of bloom from early spring to late fall. For the flower border, some plants which will give a pleasing foliage effect after they are through blooming are chosen. Perennials which die back to the ground after blooming should be so placed in the flower border that other plants will take their places when they are through flowering. Sometimes annuals which are not too vigorous in their growth may be used in these places. Annual flow-

ers may also be used to follow spring-blooming bulbs. Annuals are good for cutting during the summer and will provide flowers for the table until late fall if the border is planned and cared for properly.

Special Purpose Gardens. Rose gardens, rock gardens, lily pools, and wild gardens each have their place in the development of the grounds, but too often they are improperly located.

There are many home grounds where there are no suitable locations for a rock garden. The purpose of the rock garden is not to display rocks or borders, but to provide a suitable place to grow plants which can be grown more successfully under conditions made possible by the presence of rocks. The site for a rock garden should be one which naturally suggests rock formations, or it should be so carefully designed and enclosed with shrubs as to give a feeling of naturalness. Unless one has a real love for rock plants, knows or learns their cultural requirements, has considerable time to spend on a hobby, and has a location requiring rock work, it is probably best not to build a rock garden.

Water gardening has grown in popularity very rapidly during recent years. This is the only type of garden that

is not affected by droughts. Pools are easily maintained and the popular sentiment is that they give more pleasure for the amount of labor involved than any other phase of gardening. Water lends interest in any garden, whether formal or informal. The formal pool has its natural location in a formal garden while the informal pool is at home in the outdoor living room or in some naturalistic area.

Of all flowers, the rose is the universal favorite, and of all special gardens, the rose garden always will be a leader. The modern rose is the result of centuries of development and its beauty is such that it is loved by all.

It should be remembered that roses are more effective when grown in beds or borders wide enough for at least three rows of plants. They should usually be grown in the formal garden.

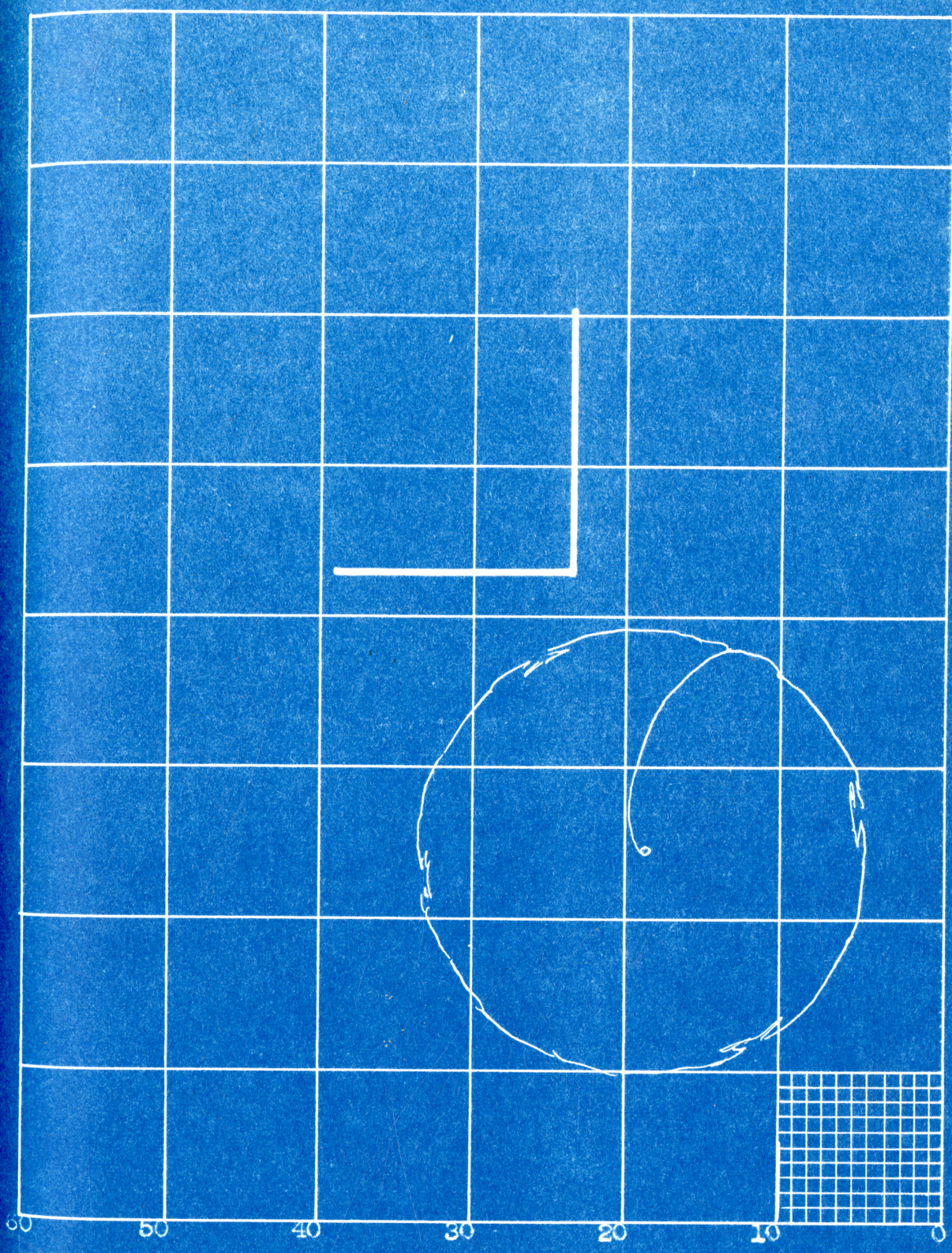
There are four classes of roses widely grown in America. These include the wild rose types, hybrid perpetuals, hybrid teas, and the hardy climbers. All of these are valuable in any rose garden, however, the hybrid teas are the most profuse bloomers from early spring until frost. Roses need careful attention in order for them to do well.

PLATES

Explanation of Plate I

The use of coordinate paper is very helpful in transferring measurements to paper. The accompanying sketch illustrates the process of making coordinate paper at a scale of one inch equals ten feet. The objects can be located by measuring the distance at right angles from the house, and can be transferred to the map directly by counting the unit number of squares in each direction.

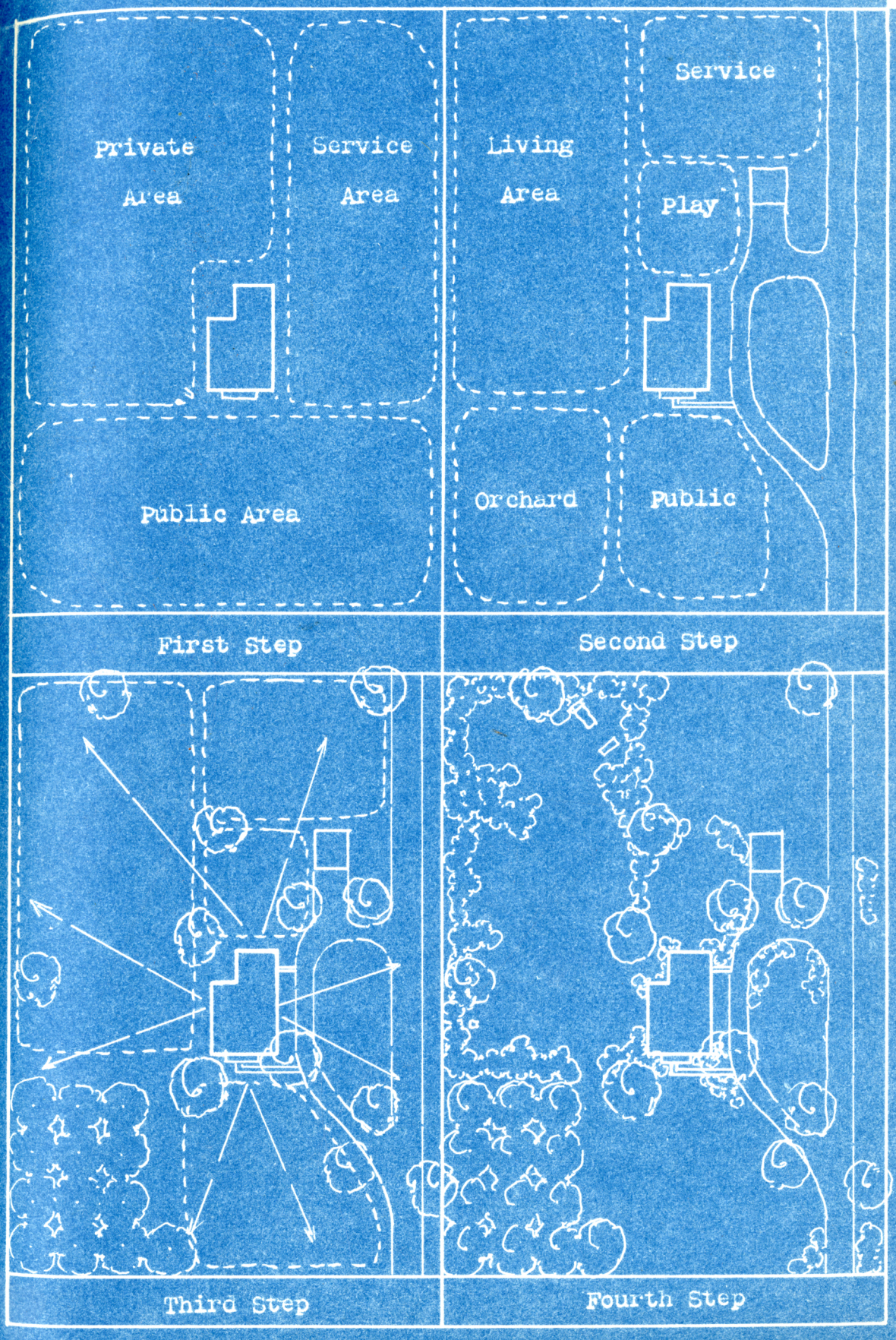
Plate I



Explanation of Plate II

The illustration shows the four steps to be taken in making the landscape plan. The first step shows the division of the grounds into three general areas. The second step shows a further division of the areas. The third step shows the plan as it is taking form. It shows the intended views and the trees that make up the larger plantings. The fourth step illustrates the final arrangement which has taken a definite form as outlined by the use of shrubs.

Plate II


Private Area
Service Area
Public Area
Living Area
Service
Play
Orchard
Public
First Step
Second Step
Third Step
Fourth Step

Explanation of Plate III

Methods of Grading

Fig. 1. The illustration is a good arrangement of a house on the same level as the street. The area should be graded so the lawn slopes away from the street and then rises gradually to the house.

Fig. 2. This shows the proper arrangement of a house located considerably lower than the street. The lowest point in the lawn should be some distance away from the house to make drainage possible.

Fig. 3. This illustrates the proper arrangement of the area when the house is located above the level of the street. An ogee curve from the street to the house is very satisfactory.

Plate III

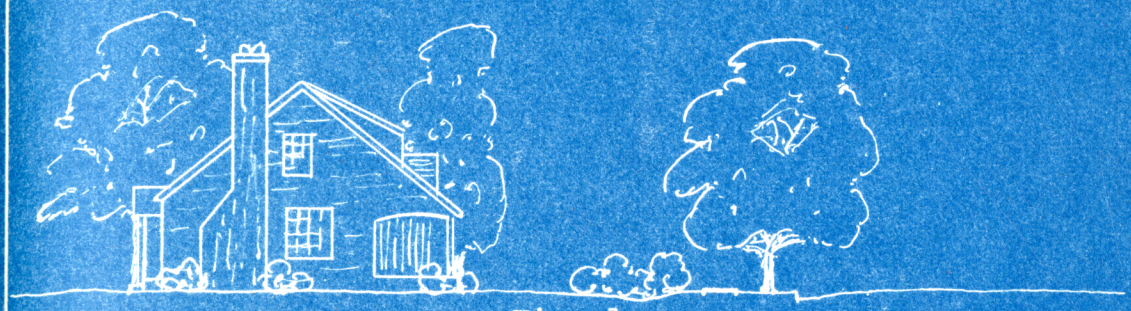


Fig. 1



Fig. 2

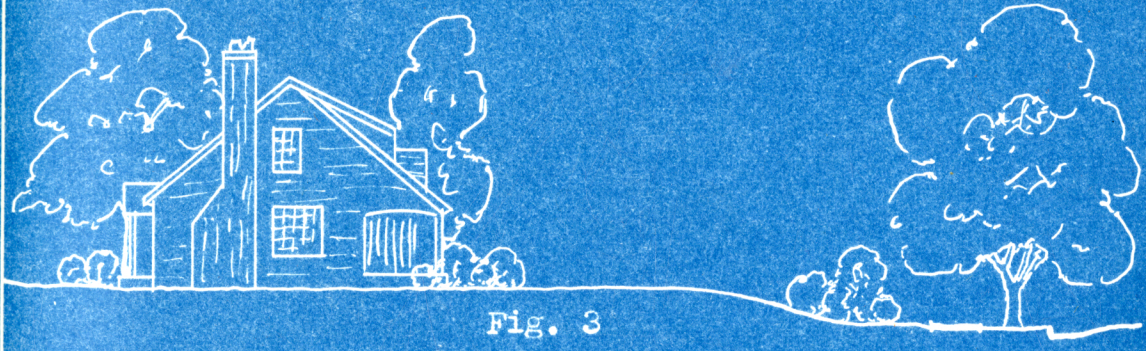


Fig. 3

Explanation of Plate IV

Methods of Grading

Fig. 1. The use of a convex surface is unsatisfactory and displeasing to the eye.

Fig. 2. The use of a retaining wall is necessary if the difference in grade is great. The house is located higher than the highway with the area rising sharply from the rear. The dotted line indicates the original grade while the solid line indicates the finished grade.

Fig. 3. The house is located below the highway with the grade falling sharply to the rear. The dotted line indicates the original grade. The use of the retaining wall gives the house a substantial feeling.

Plate IV

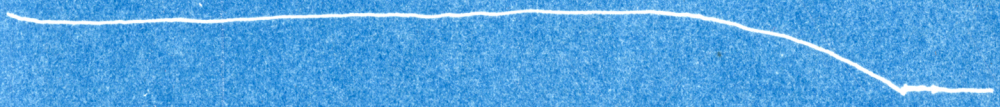


Fig. 1



Fig. 2



Fig. 3

Explanation of Plate V

Steps and Stepping Stones

Fig. 1. The illustration shows steps that are used chiefly by adults. The riser is six to seven and one-half inches while the tread is twelve or more inches. The product of the riser and tread should approximate seventy-five, while the sum of the tread and two risers should approximate twenty-seven.

Fig. 2. The steps used chiefly by children should have five and one-half to six inch risers and fourteen inch treads.

Fig. 3. The use of flagstone walks, properly laid, is very satisfactory. Flat field stones may be used for this purpose if they are laid flat on the ground.

Fig. 4. Stepping stones are simple, efficient, and highly desirable for walks that are not used frequently. They should be set not less than twenty inches apart from center to center; the most desirable distance for vigorous walking is approximately twenty-six inches from center to center.

Plate V

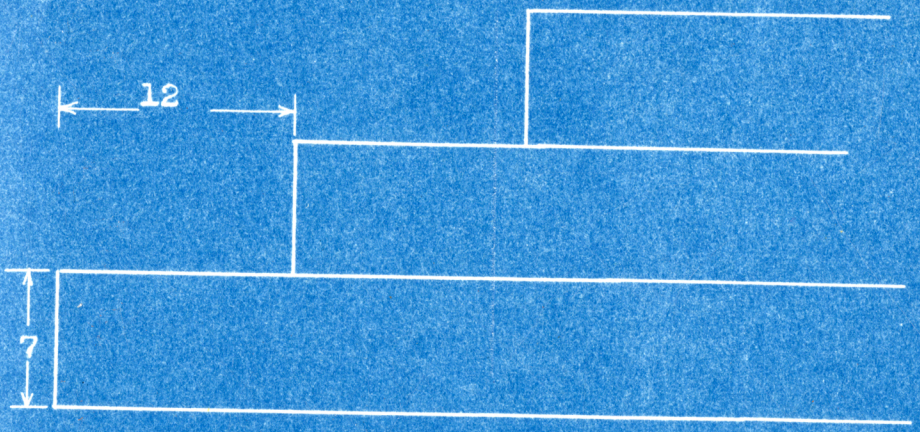


Fig. 1

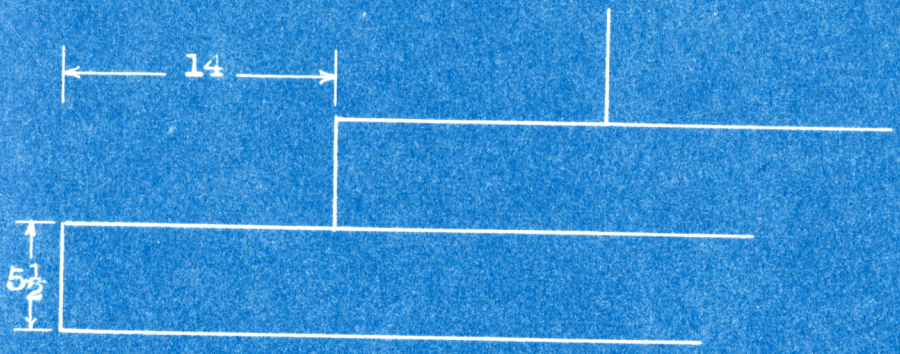


Fig. 2

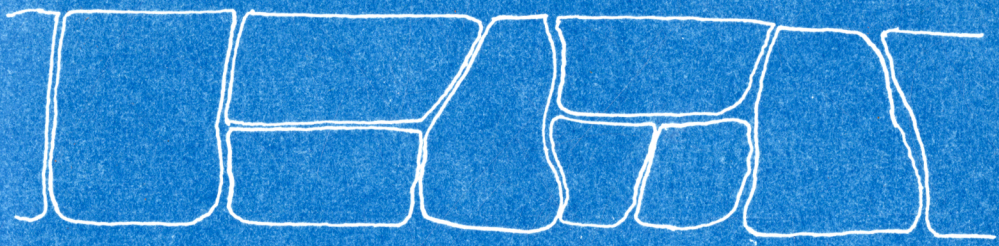


Fig. 3

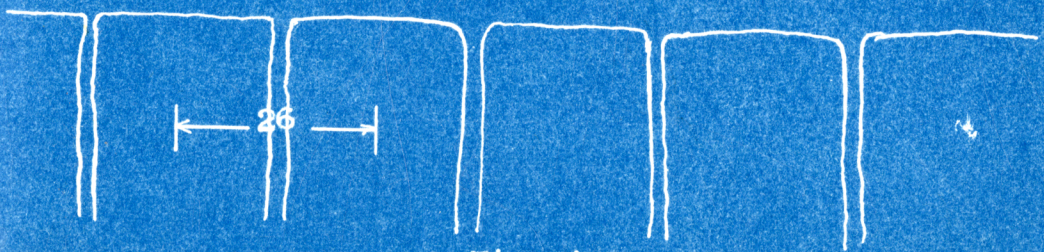
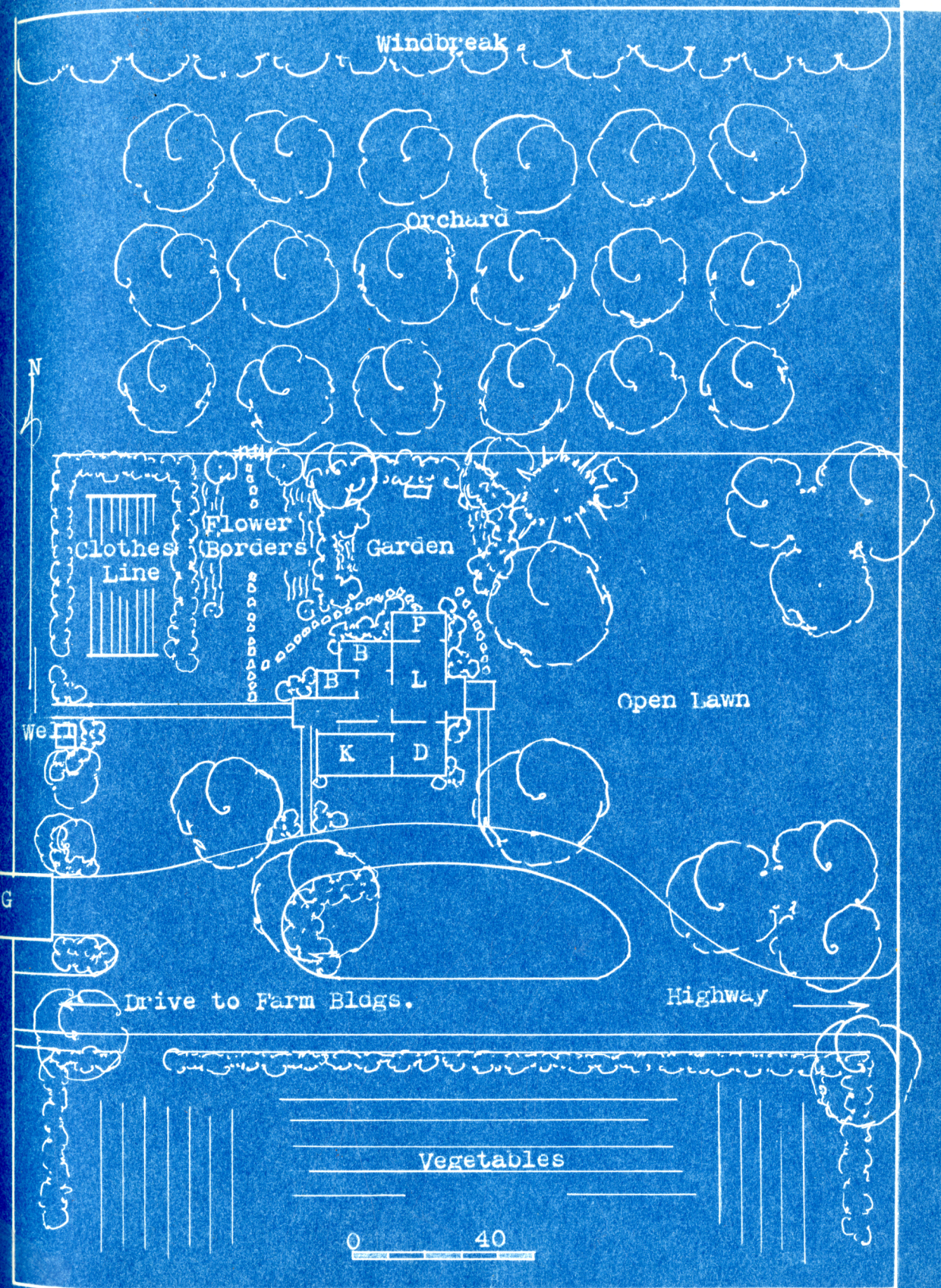


Fig. 4

Explanation of Plate VI

The planting design of farm grounds located west of the highway shows a well designed entrance drive, a systematic arrangement of areas, and a general arrangement of trees and shrubs to develop sightly home grounds. A straight drive from the highway to the farm buildings is very satisfactory to assure ease of moving farm implements. The curved drive leading to the house and garage isolates the house from the service drive. The arrangement of trees and shrubs offer excellent opportunities for the use of the small private area with flower borders. The large open lawn gives a proper setting for the house as seen from the highway. The windbreak and orchard to the north give a feeling of warmth in the winter. The location of the drying area, the well, and the vegetable garden afford the proper use of the service features of the grounds.

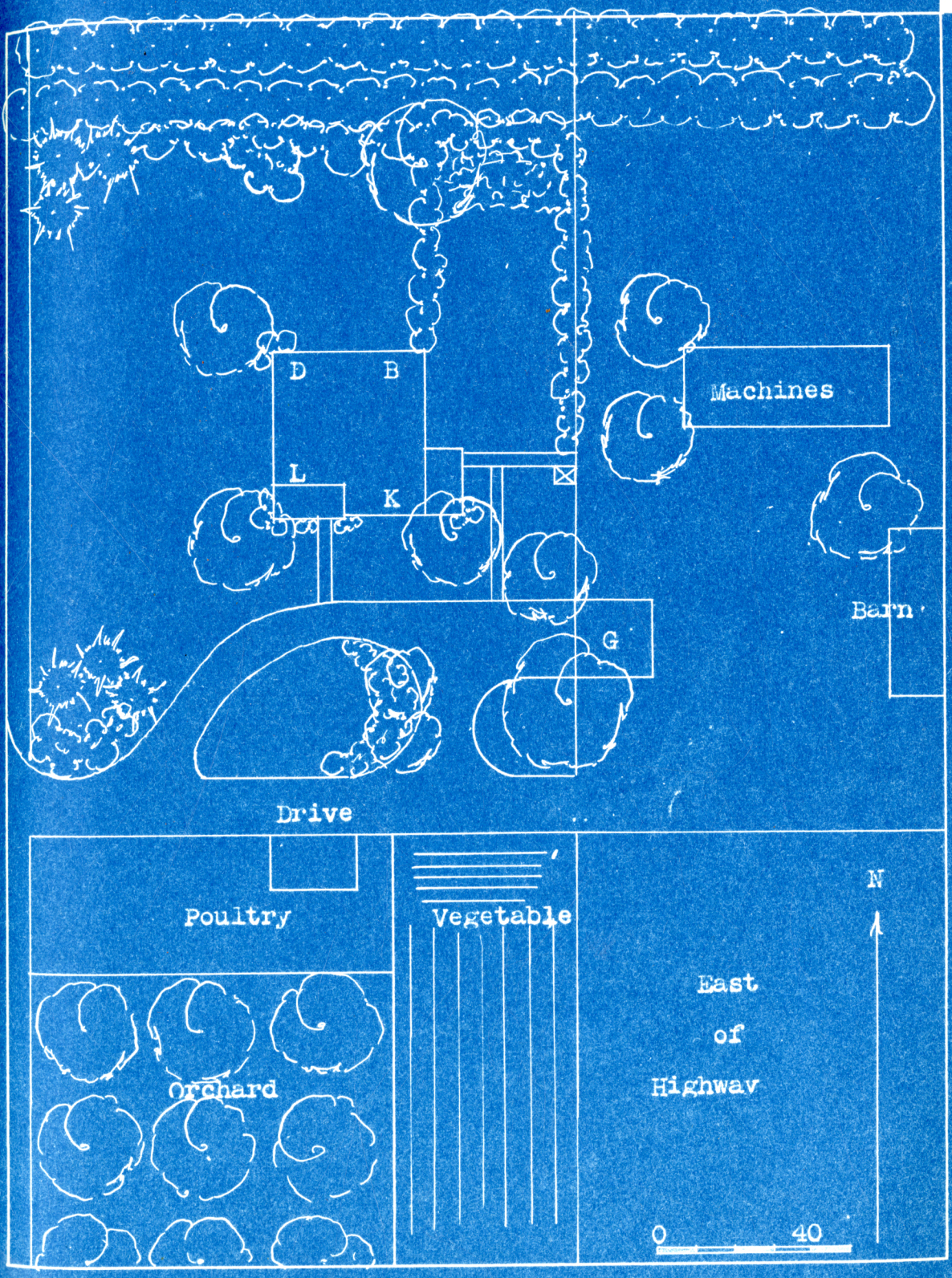
Plate VI


Windbreak
Orchard
N
Clothes Line
Flower Borders
Garden
P
B
B
L
K
D
Open Lawn
We
G
Drive to Farm Bldgs.
Highway
Vegetables
0
40

Explanation of Plate VII

The design of the farm grounds east of the highway shows an arrangement which spells simplicity in its fullest extent. The areas, although simple, are well defined and well located in relation to their respective uses. The windbreak to the north provides shelter for the house and barn areas during the winter. The large open lawn area and the enframing trees give the house a proper setting from the highway.

Plate VII


D
B
L
K
Machines
Barn
G
Drive
Poultry
Vegetable
Orchard
East
of
Highway
N
0
40

Explanation of Plate VIII

The Design of Farm Drives

Fig. 1. The entrance drive should be as direct as possible. Where space permits, this turn-drive is an attractive and useful addition to the farm home. It gives privacy to the house and direct access to the farm buildings.

Fig. 2. The circular drive gives excellent opportunity for variation when the drive to the farm buildings need not be straight. The walk from the front door to the drive is a necessity.

Fig. 3. Where space is limited, the drive may be widened at the walk intersection to allow parking of a car. The location of the shrubs gives a good setting for the drive.

Fig. 4. The use of a turn around is occasionally a necessity. It requires a large amount of space, and therefore is used only occasionally.

Plate VIII

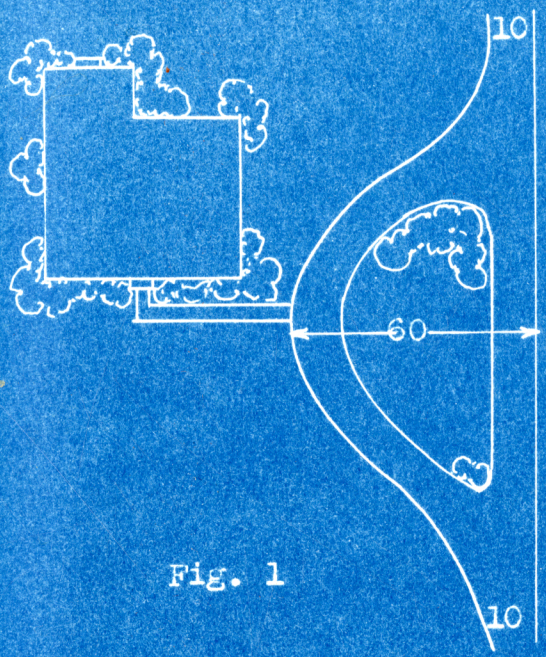


Fig. 1

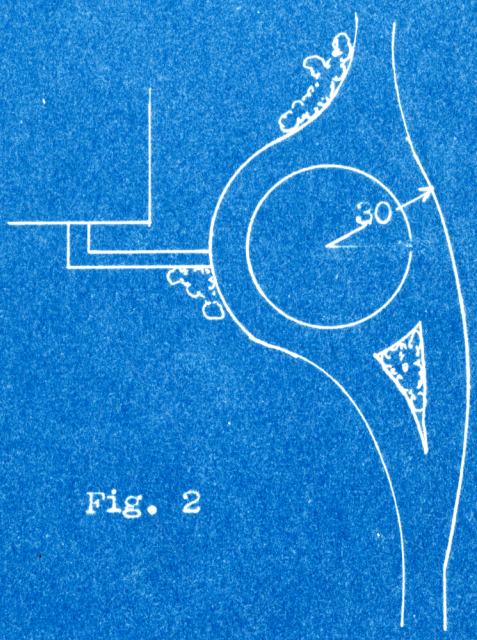


Fig. 2

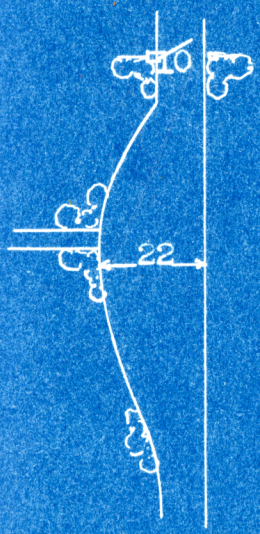


Fig. 3

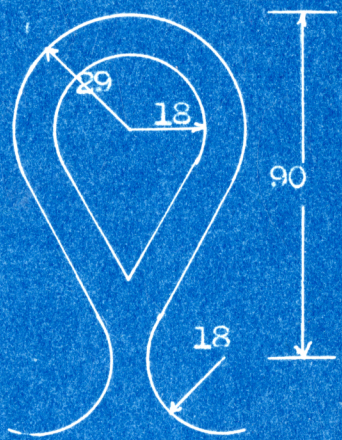


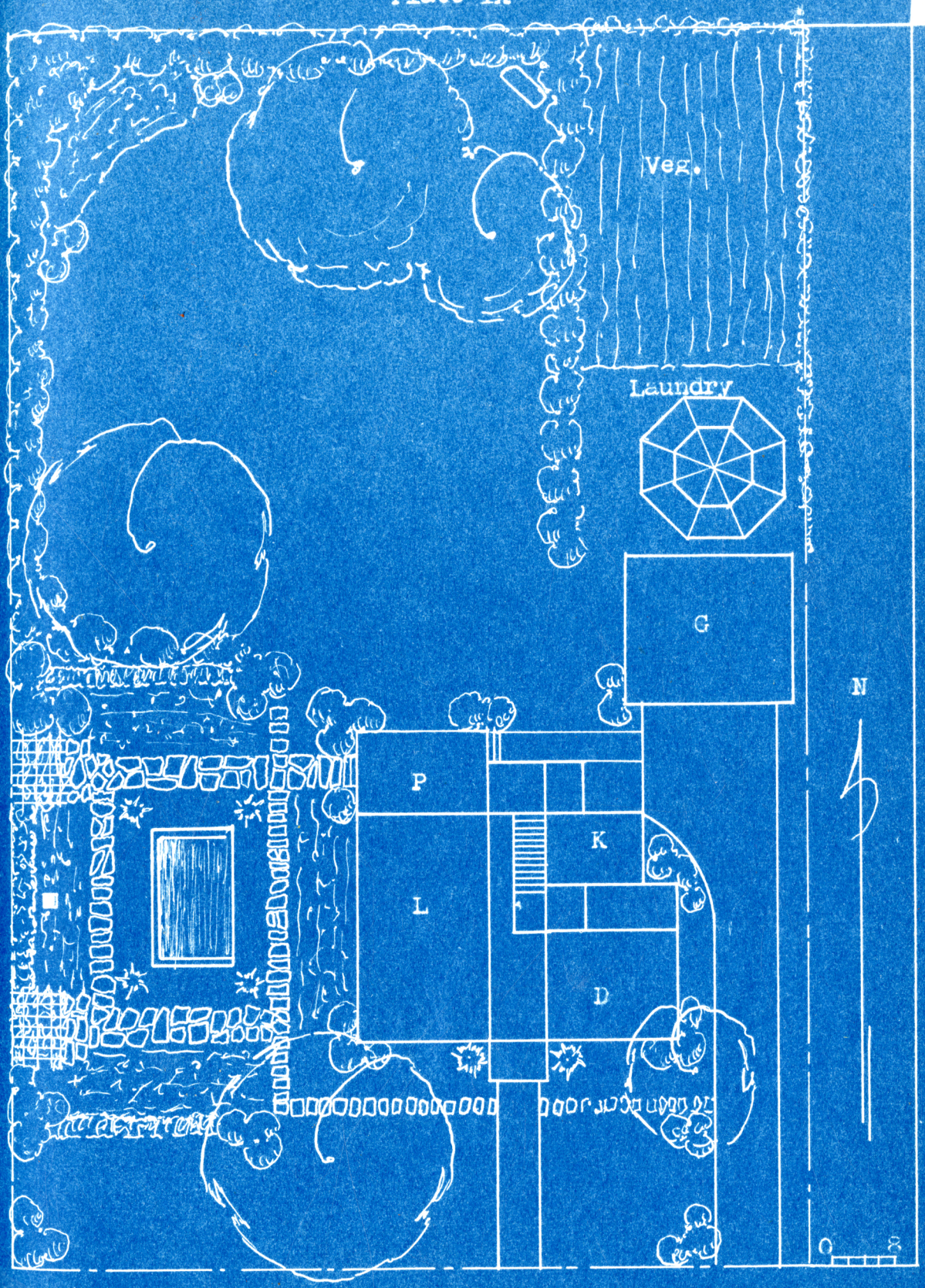
Fig. 4

0 50

Explanation of Plate IX

The medium city lot which is 100 feet by 150 feet gives excellent opportunity for the use of both formal and informal gardens. The garage and drive are located to one side of the property; this offers possibilities for using a single drive for both the service drive and garage drive. This arrangement allows room on the living side of the grounds for a pleasing formal garden with a reflecting pool. The arbors provide a place for rest or possibly an entrance to the neighbor's garden. The small figure adds to the interesting view from the living room. The large semi-formal area to the rear gives excellent opportunity for family enjoyment. The laundry and vegetable areas are well located and screened from the living areas. The movable clothes reel is an excellent addition to many city homes.

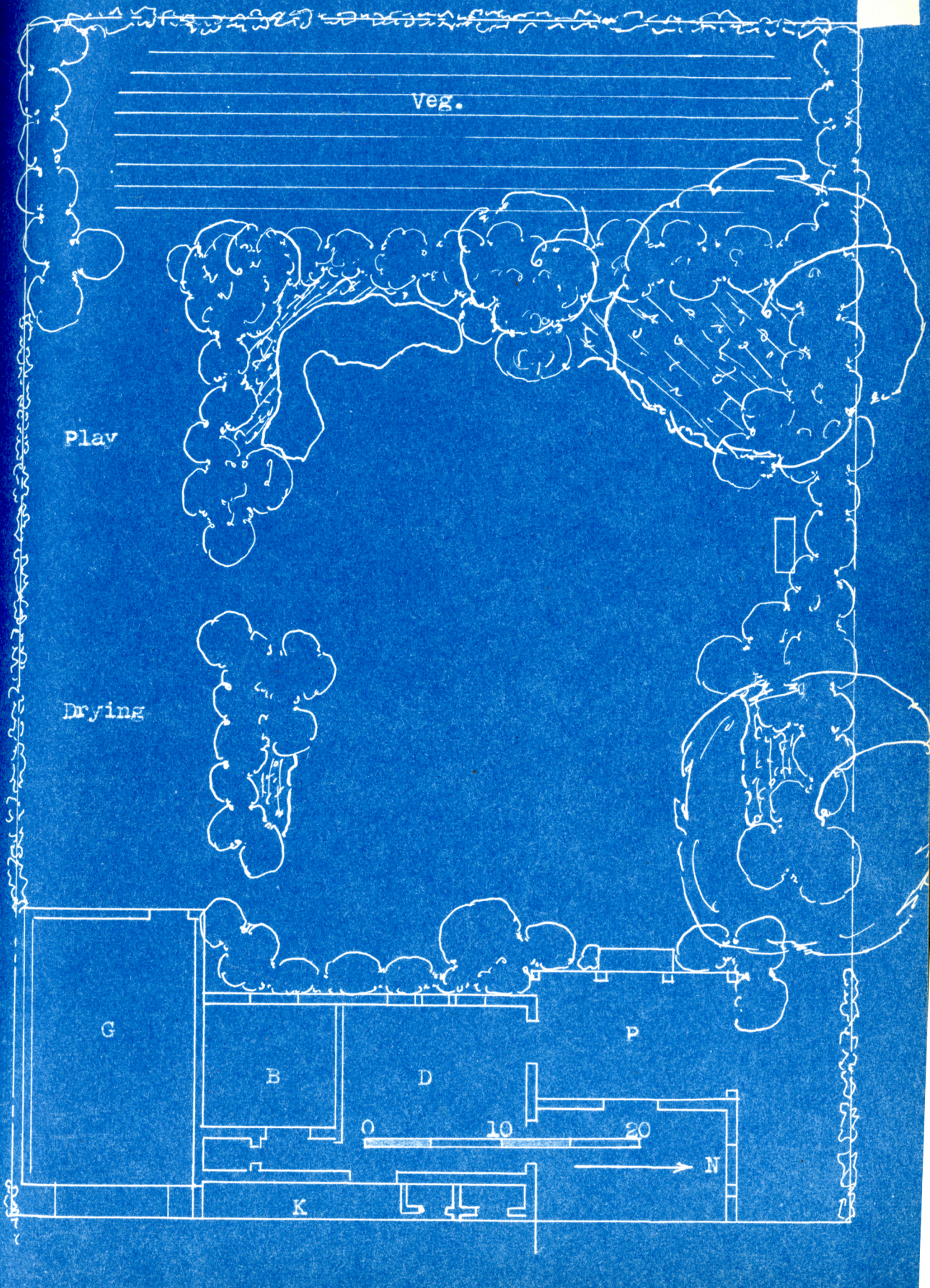
Plate IX



Explanation of Plate X

The development of an informal area in the private area is pleasing. It offers possibilities that are lacking in any formal development. The small flower borders and the informal pool provide enjoyment for the family. The drive is straight from the street. It is used as a service drive as well as a garage drive.

Plate X



Explanation of Plate XI

Four Types of Drives Affording Convenient Backing Space

Fig. 1. The Y-turn court is a satisfactory means of turning where space is limited. The spur must be designed to conform to the turning radius of the car. The ten feet straight drive is necessary to permit the car to straighten out enough to make the next turn. The dimensions given in the illustration are usually considered the minimum turning radii.

Fig. 2. This is a Y-turn which has been given a slightly different treatment.

Fig. 3. Often when the area in which the car is backed is limited, a scheme for backing more than once would be advisable. The narrow lines show the tracks followed by the car in backing.

Fig. 4. The square court is frequently used when the garage does not face the street. The dotted line shows the track of the car when it leaves the garage and court while the solid line shows the track followed upon entering the court and garage.

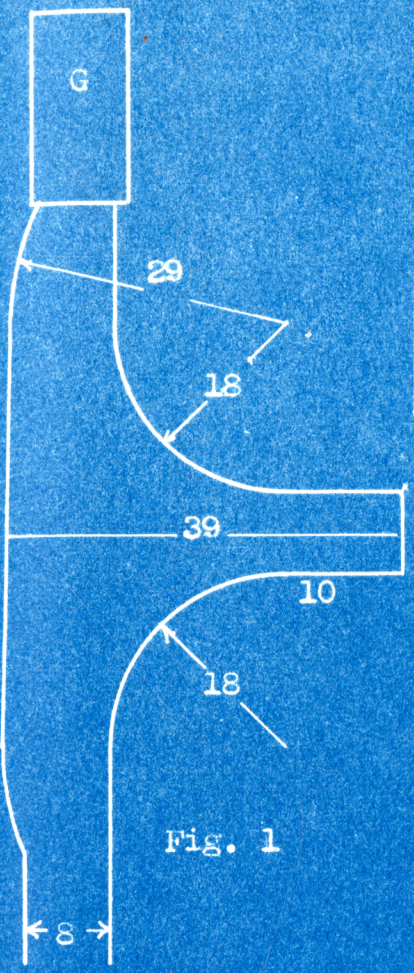


Fig. 1

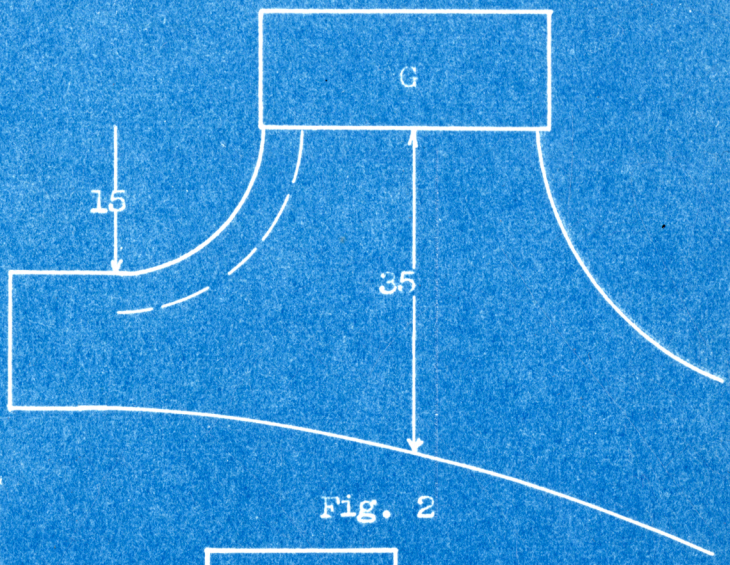


Fig. 2

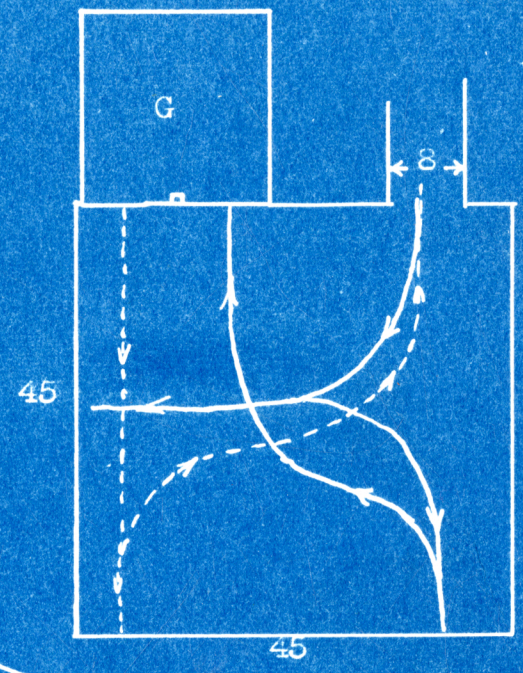


Fig. 4

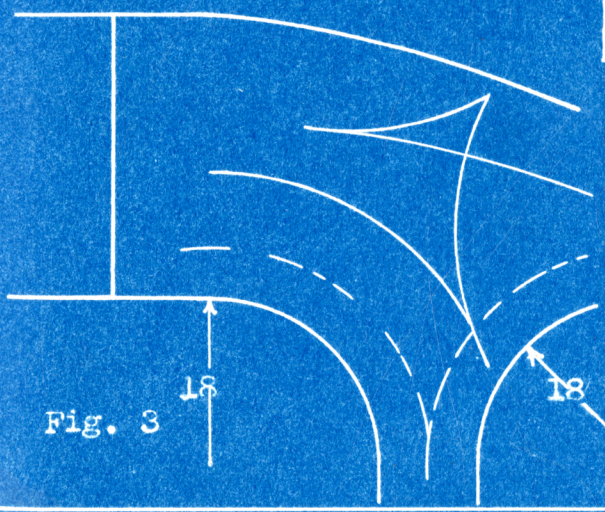


Fig. 3



Explanation of Plate XII

Fig. 1. Enframement by trees adds greatly to the appearance of the house.

Fig. 2. A background of trees planted behind a house gives contrast to the house and accentuates the architecture.

Fig. 3. The transition from trees to shrubs is important. Tall growing shrubs should be faced down with those of lower growth.

Fig. 4. Foundation plantings improve the appearance of the house by softening the straight, hard lines. Shrubs of varying heights and growing habits used at the corners and angles of the house tie the house to the remainder of the landscape picture.

Fig. 5. Continuous groups of plantings should be avoided. A more pleasing picture is made when portions of the foundation may be seen.

Plate XII



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5

Explanation of Plate XIII

Fig. 1. The arrangement of shrubs in straight rows should be avoided. Shrubs should be planted in a zigzag manner as illustrated. The larger shrubs should be planted farther apart than the smaller ones.

Fig. 2. The grouping of trees, shrubs, and flowers must be studied in plan to estimate the distance of planting and the shape of the areas.

Fig. 3. Plants must be studied in elevation to determine the relation of one shape to another. The composition must be pleasing in elevation as well as in plan.

Fig. 4. Shrubs may be used as a screen to hide undesirable objects or as a background for features such as pools.

Fig. 5. Shrubs may be planted along fence rows surrounding the house. The tall shrubs are placed in the corner with low shrubs immediately in front and medium shrubs to either side. The shrubs serve as a background for the flower border.

Fig. 6. Fence rows afford an excellent location for flower borders. Vines on the fence give a good background. Shrubs at the ends enframe the border.

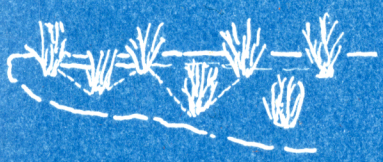


Fig. 1

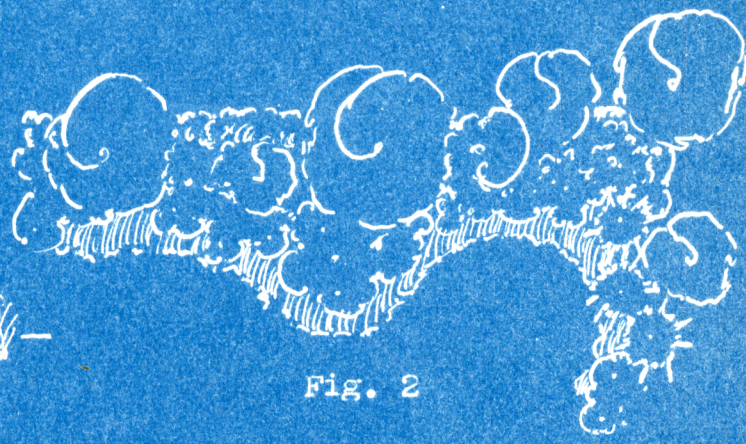


Fig. 2

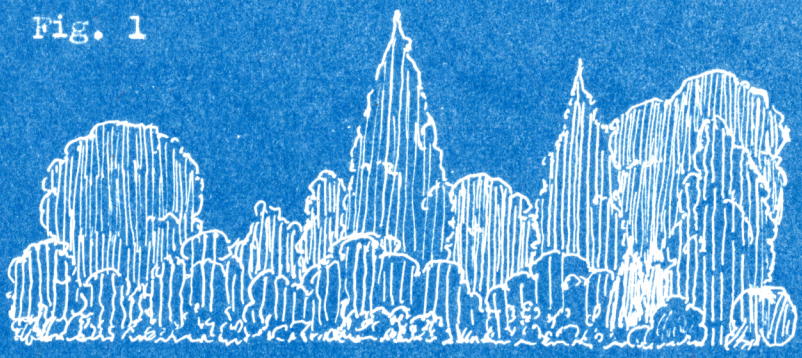


Fig. 3



Fig. 4

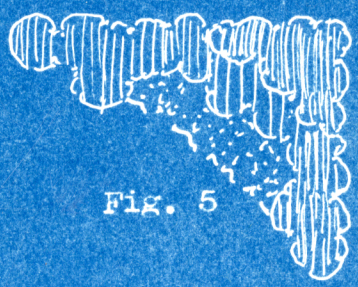


Fig. 5

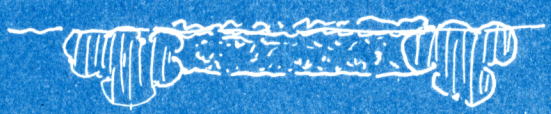


Fig. 6

ORNAMENTAL PLANTS SUITABLE FOR KANSAS

Plants grow from year to year and change with the seasons. Persons who use plants should know their individuality, because their nature, size, and shape are not shown by the small specimens in the nursery.

To many home owners the choice of plants seems less important and less difficult than the design of the grounds and the plant arrangement. Yet it must be borne in mind that poor choice of plants may mar the effect of a good design. Advice in choosing plants is difficult to give because so many local conditions influence the choice. The home-owner will be forced to use his judgment in the choice of the size and shape of plants that are wanted in each position. The lists of plants include information which will aid in the choice of hardy and adapted plants for each section of the state.

In the lists that follow, information about plants is classified to assist the home-owner. No attempt is made to include all species of plants useful in landscape planting, but only those which the author thinks are best suited to home development under Kansas conditions.

The following abbreviations are found in the plant lists:

* - plants native to Kansas

Section of state
- W - west third
- C - central third
- E - east third

Exposure
- p - partial
- sh - shade

Use
- B - border
- C - cutting
- E - edging
- F - foundation
- G - group
- H - hedge
- R - rock garden
- Sc - screen
- Sh - shade
- Sp - specimen
- Wg - wild garden
- W - windbreak

Some Shrubs Adapted to Kansas

Botanical name	Common name	Height feet	Soil	Exposure	Blooming Color	Blooming Time	Use	Section of state	Distance to plant
Acanthopanax pentaphyllum	(Five-leaved Aralia)	5-7	any	sun,p.sh	-----	-----	H.B.	CE	3-4
*Aesculus arguta	Texas Buckeye	5-7	moist	sun	yl. gr.	4-5	B.Sc.	WCE	3-4
*Amorpha canescens	Leadplant	1-2	dry	sun	bl. purp.	5-6	B.F.G.	WCE	1-2
*Amorpha fruticosa	Indigobush	5-8	good	sun	purple	5-6	B.Sc.	WCE	3-4
Aralia spinosa	Devils-walkingstick	10-20	good	sun	white	8	Sc.	CE	5-6
(Berberis mentorensis)	(Mentor Barberry)	3-4	good	sun,p.sh	yellow	4	B.F.H.	WCE	2-3
Berberis thunbergi	Japanese Barberry	3-4	good	p. shade	yellow	4	B.F.H.	CE	2-3
*Berberis vulgaris	European Barberry	6-8	good	sun,shade	yellow	4-5	B.H.	CE	4-5
Buddleia davidi	Orange-eye Butterflybush	5-8	dry	sun	purple	6-8	B.F.	CE	3-4
Calycanthus floridus	Common Sweetshrub	4-6	moist	sun,shade	red-brown	4-5	B.F.	CE	3-4
Caragana arborescens	Siberian Pea-tree	6-12	dry	sun	yellow	5-6	B.H.F.Sc.	WCE	5-6
Caryopteris incana	Common Bluebeard	3-4	dry	sun	blue	8-11	B.F.	CE	2-3
*Ceanothus americana	Jersey-tea	2-4	dry	sun	white	5-6	B.	WCE	2-3
*Cephalanthus occidentalis	Common Buttonbush	5-6	moist	sun,shade	cr.white	6-7	B.	CE	3-4
Cornus mas	Cornelian-cherry	8-10	moist	sun,shade	yellow	3-4	B.Sc.	CE	5-6
*Cornus paniculata	Gray Dogwood	6-10	good	sun,shade	white	5-6	B.Sc.F.	WCE	4-5
*Cornus stolonifera	Red-osier Dogwood	6-8	moist	p.shade	white	5	B.Sc.F.	CE	4-5
Cotoneaster acutifolia	Peking Cotoneaster	5-10	dry	sun	pink	5-6	B.Sc.	WCE	4-5
Cydonia japonica	Flowering Quince	5-6	good	sun	scarlet	3-4	B.Sc.H.	CE	4-5
Deutzia gracilis	Slender Deutzia	2-3	good	sun	white	5-6	B.F.	E	2-3
Deutzia scabra	Fuzzy Deutzia	5-6	good	sun	white	5-6	B.F.	CE	3-4
Elaeagnus angustifolia	Russian-olive	15-30	good	sun	yellow	5	B.	WCE	8-10
Euonymus alatus	Winged Euonymus	5-7	good	shade	yellow	4-5	B.F.Sc.	CE	3-4
*Euonymus atropurpureus	Wahoo	6-10	good	p.shade	purple	4-5	B.Sc.	CE	4-5
Euonymus patens	Spreading Euonymus	3-5	good	sun,shade	white	5-6	B.F.	CE	3-4
Exochorda grandiflora	Common Pearlbush	6-8	good	sun,shade	white	4-5	B.Sc.F.	CE	5-6
Forsythia intermedia	Border Forsythia	6-8	good	sun,shade	yellow	3-4	B.Sc.F.	WCE	4-5
Forsythia suspensa	Weeping Forsythia	6-8	good	sun,shade	yellow	3-4	Sc.	WCE	4-5
Forsythia viridissima	Greenstem Forsythia	6-10	good	sun,shade	yellow	3-4	B.Sc.F.	CE	3-4
Hibiscus syriacus	Shrub-althea	8-10	good	sun	white-red	8-9	F.H.B.Sc.	WCE	4-5
Hydrangea arborescens	Smooth Hydrangea	3-4	good	shade	white	6-7	B.	CE	3-4
Hydrangea paniculata	Panicle Hydrangea	6-8	good	sun,shade	white	8-10	B.Sc.	CE	4-5
*Ilex decidua	Possumhaw	6-10	good	sun,shade	white	5-6	B.Sc.	CE	4-5
Kerria japonica	Kerria	4-6	moist	shade	yellow	6-11	B	CE	3-4
Kolkwitzia amabilis	(Beautybush)	5-6	good	sun	pink	5-6	B.F.	CE	3-4
Lespedeza formosa	Purple Bushclover	3-4	dry	sun	lavender	6-7	B.	CE	2-3
Ligustrum amurense	Amur Privet	8-10	good	sun,shade	white	6	B.H.Sc.	WCE	4-5
Ligustrum ibota	Ibota Privet	5-7	good	p.shade	white	5-6	B.Sc.F.H.	WCE	5-6

Ligustrum vulgare	European Privet	6-8	good	p.shade	white	5-6	B.H.Sc.	CE	4-5
Lonicera fragrantissima	Winter Honeysuckle	6-8	good	p.shade	cr.white	3-4	B.Sc.F.	CE	3-4
Lonicera japonica	Japanese Honeysuckle	8-12	good	sun,shade	wh-purple	6-8	Gr.cover	CE	2-3
Lonicera maacki	Amur Honeysuckle	8-15	good	sun	white	5	B.Sc.	WCE	5-6
Lonicera morrowi	Morrow Honeysuckle	5-6	good	sun,shade	wh-yl	4	B.Sc.F.	WCE	3-4
Lonicera tatarica	Tatarian Honeysuckle	8-10	good	sun,shade	pk-white	4	B.Sc.F.	WCE	5-6
Mahonia aquifolium	Oregon Hollygrape	3-5	good	p.shade	yellow	4	B.F.	CE	2-3
Nandina domestica	Nandina	3-5	moist	sun,shade	white	5-6	B.Sc.	CE	2-3
Philadelphus coronarius	Sweet Mockorange	8-10	good	sun	cr.white	5-6	B.F.Sc.	WCE	4-5
Philadelphus grandiflorus	Big Scentless Mockorange	10-12	good	sun	white	5	B.F.Sc.	WCE	5-6
Physocarpus opulifolius	Common Ninebark	6-8	good	sun	wh-pk	5-6	B.Sc.	WCE	4-5
Prunus glandulosa	(Flowering Almond)	4-5	good	sun	pk-white	4-5	B.	CE	3-4
Prunus tomentosa	Nanking Cherry	6-8	good	sun,p.shade	white	4	B.	CE	4-5
Rhamnus cathartica	Common Buckthorn	8-12	good	sun,p.shade	yl-green	4-6	B.H.Sc.	WCE	6-8
Rhodotypos kerrioides	Jetbead	4-5	good	p.shade	white	4-5	B.Sc.F.	CE	3-4
*Rhus canadensis	Fragrant Sumac	3-5	any	sun,shade	yellow	4	B.Sc.	WCE	3-4
Rhus cotinus	Common Smoketree	8-12	good	p.shade	purple	5	B.Sc.	CE	5-6
*Rhus glabra	SmoothSumac	8-15	good	sun,shade	green	5	B.Sc.	WCE	3-4
Rhus typhina	Staghorn Sumac	10-15	good	sun	green	5	B.Sc.	WCE	3-4
Ribes aureum	Slender Golden Currant	4-6	good	sun	yellow	4	B.	WCE	3-4
*Ribes missouriense	Missouri Gooseberry	3-6	good	sun,shade	yellow	4	B.	WCE	2-3
Robinia hispida	Rose-acacia	4-6	good	sun	rose	5	B.Sc.	CE	3-4
Rosa hugonis	Hugonis Rose	5-6	good	sun,shade	yellow	5	B.Sc.	WCE	4-5
Rosa rugosa	Rugosa Rose	5-6	good	sun,shade	pur-wh	5-9	B.Sc.	WCE	3-4
*Rosa setigera	Prairie Rose	5-6	good	sun	rose	5-6	B.	WCE	3-4
Salix discolor	Pussy Willow	8-15	good	sun,p.shade	yellow	3-4	B.Sc.	CE	6-8
*Sambucus canadensis	American Elder	6-8	good	sun,shade	white	5-6	B.Sc.	WCE	4-5
(Spiraea arguta)	Garland Spirea	4-6	good	sun	white	3-4	B.F.H.	CE	3-4
(Spiraea billiardi)	Billiard Spirea	4-5	good	sun	rose	6-10	B.F.	CE	3-4
(Spiraea bumalda)	Bumalda Spirea	2-3	good	sun,shade	red	6-10	B.F	WCE	2-3
Spiraea prunifolia	Bridalwreath	4-6	good	sun,shade	white	3-4	B.F.	WCE	3-4
Spiraea thunbergi	Thunberg Spirea	3-4	good	sun,shade	white	3-4	B.F.	CE	2-3
(Spiraea vanhouttei)	Vanhoutte Spirea	5-7	good	sun,shade	white	4-5	B.F.Sc.H	WCE	3-4
*Staphylea trifolia	American Bladdernut	4-8	good	sun,shade	white	4-5	B.Sc.	WCE	3-4
(Symphoricarpos chenaulti)	(Chenault Snowberry)	2-3	good-	sun,shade	pink	6-7	B.F.	WCE	2-3
Symphoricarpos racemosus	Common Snowberry	2-3	good	sun,shade	pink	5-6	B.F.	WCE	2-3
*Symphoricarpos vulgaris	Coralberry	2-3	good	sun,shade	pink	5-6	B.F.	WCE	2-3
Syringa chinensis	Chinese Lilac	6-8	good	sun	pur-red	4-5	B.Sc.	WCE	4-5
Syringa japonica	Japanese Tree Lilac	10-20	good	sun	white	5	B.Sc.	CE	8-10
Syringa persica	Persian Lilac	6-8	good	sun	lilac	4-5	B.Sc.	WCE	5-6
Syringa vulgaris	Common Lilac	8-10	good	sun	various	4-5	B.Sc.	WCE	5-6
Tamarix odessana	Odessa Tamarix	10-15	dry	sun	pink	4-5	Sc.	WCE	6-8

Botanical name	Common name	Height feet	Soil	Exposure	Blooming Color	Blooming Time	Use	Section of state	Distance to plant
Tamarix parvifolia	(African Tamarix)	12-18	dry	sun	pink	4-5	Sc.	WCE	6-8
Viburnum dentatum	Arrowwood	6-8	moist	sun, shade	white	5-6	B.Sc.F.	CE	4-5
*Viburnum lentago	Nannyberry	10-15	moist	shade	white	5	B.Sc.	CE	6-8
Viburnum opulus	European Cranberrybush	6-8	good	sun, shade	white	4-5	B.Sc.	WCE	4-5
*Viburnum prunifolium	Blackhaw	8-12	good	p.shade	white	4-5	B.Sc.	CE	6-8
Viburnum tomentosum	Doublefile Viburnum	6-8	good	sun	white	4-5	B.Sc.	CE	4-5
Vitex agnus-castus	Lilac Chaste-tree	5-7	good	sun	lilac	6-9	B.	WCE	3-4
Weigela rosea	Pink Weigela	5-7	good	shade	rose	4-5	B.F.Sc.	CE	3-4
Yucca filamentosa	Common Yucca	2-4	good	sun	yl-wh	5-6	B.	WCE	2-3

Some Vines Adapted to Kansas

Amelopsis quinquefolia	Virginia Creeper	20-30	good	shade	-	-	walls	CE	6-8
Ampelopsis tricuspidata	Japanese Creeper	20-30	good	shade	-	-	walls	CE	6-8
*Celastrus scandens	American Bittersweet	10-20	good	shade, sun	red fruit	-	wa. fe	WCE	4-6
Clematis jackmani	Jackman Clematis	8-10	good	shade, sun	purple	6-11	trellis	CE	4-6
Clematis paniculata	Sweet Autumn Clematis	10-15	good	sun	white	8-9	arbor	WCE	4-6
Euonymus radicans	Wintercreeper	10-20	good	shade	gr,wh	-	wa. gr	CE	3-5
Hedera helix	English Ivy	8-15	moist	shade	-	-	wall,ro	CE	3-5
Lonicera sempervirens	Trumpet Honeysuckle	15-20	good	shade, sun	red, or	5	wa. fe	CE	4-6
Lycium chinense	Chinese Matrimony-vine	12-15	good	sun	purple	5-6	trellis	WCE	4-6
Polygonum auberti	China Fleecevine	10-12	moist	shade, sun	white		trellis	WCE	3-5
Wisteria sinensis	Chinese Wisteria	20-30	good	p.shade	bl-vi	4-5	pergola	WCE	4-6

Some Deciduous Trees for Kansas

Botanical Name	Common name	Height feet	Soil	Growth	Use	Section of Kansas
*Acer dasycarpum	Silver Maple	60-80	moist	rapid	Sp G Sh	WCE
* Acer negundo	Boxelder	25-75	moist	rapid	G Sh	WCE
Acer platanoides	Norway Maple	40-50	good	slow	Sp G Sh H	CE
*Acer saccharum	Sugar Maple	70-90	moist	slow	Sp G Sh	CE
*Aesculus glabra	Ohio Buckeye	15-30	moist	medium	Sp G Sh	CE
Aesculus hippocastanum	Horsechestnut	40-60	moist	medium	Sp G Sh	CE
*Asimina triloba	Pawpaw	15-25	moist	medium	G	CE
*Betula nigra	River Birch	50-90	moist	slow	G	CE
Catalpa speciosa	Western Catalpa	50-60	good	rapid	Sp G	CE
*Celtis occidentalis	Hackberry	80-100	good	rapid	Sp G Sh W	WCE
*Cercis canadensis	American Redbud	10-20	good	slow	Sp G	WCE
Cladrastis lutea	Yellow-wood	40-50	good	rapid	Sp G	WCE
*Crataegus crusgalli	Cockspur Thorn	12-25	good	slow	Sp G	WCE
Crataegus mollis	Downy Hawthorn	15-25	good	slow	Sp G	WCE
*Diospyros virginiana	Common Persimmon	30-40	good	slow	G	WCE
*Fraxinus americana	White Ash	60-120	good	medium	Sp G Sh W	CE
*Fraxinus lanceolata	Green Ash	60-70	good	rapid	Sp G Sh	CE
Ginkgo biloba	Maidenhair-tree	30-80	good	medium	Sp G	E
*Gleditsia triacanthos	Common Honeylocust	40-80	good	medium	Sp G H Sh W	WCE
*Gymnocladus dioica	Kentucky Coffeetree	40-50	moist	slow	Sp Sh	WCE
Hicoria ovata	Shagbark Hickory	50-75-	good	slow	Sp G	CE
*Hicoria pecan	Pecan	80-165	good	slow	Sp	CE
*Juglans nigra	Black Walnut	60-80	good	slow	Sp G	WCE
Koelreuteria paniculata	Goldrenrain-tree	20-30	good	slow	Sp G Sh	CE
Liriodendron tulipifera	Tuliptree	70-90	good	rapid	Sp Sh	CE
*Maclura pomifera	Osage-orange	30-40	good	rapid	H W	WC
*Malus ioensis	Prairie Crab	20-30	good	medium	Sp G	CE
*Morus rubra	Red Mulberry	50-60	good	rapid	G W	WCE
*Ostrya virginiana	American Hophornbeam	20-30	good	slow	Sp G W	CE
*Platanus occidentalis	American Planetree	50-60	moist	rapid	Sp G	CE
*Populus deltoides	Southern Cottonwood	30-50	moist	rapid	Sp G W	WCE

Botanical name	Common name	Height feet	Soil	Growth	Use	Section of Kansas
*Prunus americana	American Plum	20-30	good	slow	G	WCE
*Prunus sertina	Black Cherry	30-40	good	rapid	G	CE
*Prunus virginiana	Common Chokecherry	15-25	good	rapid	G W	WCE
*Quercus alba	White Oak	50-70	good	slow	Sp G Sh	WCE
*Quercus imbricaria	Shingle Oak	50-60	good	slow	Sp G Sh	CE
*Quercus mascrocarpa	Mossycup Oak (Bur)	80-120	good	slow	Sp G Sh W	WCE
*Quercus marilandica	Blackjack Oak	20-30	good	slow	G	E
*Quercus muhlenbergi	Chinquapin Oak	40-60	good	slow	Sp G	CE
*Quercus palustris	Pin Oak	60-90	moist	slow	Sp G Sh	CE
*Quercus rubra	Common Red Oak	40-80	good	medium	Sp G Sh	CE
*Robinia pseudoacacia	Common Locust	30-80	good	medium	Sp G	WCE
Sapindus drummondi	Western Soapberry	30-40	good	medium	Sp G	CE
*Tilia americana	American Linden	50-80	good	rapid	G	CE
*Ulmus americana	American Elm	70-120	good	medium	Sp G Sh W	WCE
*Ulmus fulva	Slippery Elm	40-60	good	rapid	Sp G W	WCE
Ulmus parvifolia	Chinese Elm	40-60	good	slow	G	WCE
Ulmus pumila	Dwarf Asiatic Elm	40-50	good	rapid	G W	CE

Some Evergreens for Kansas

Botanical name	Common name	Height in feet	Growth	Use	Section of Kansas
Juniperus chinensis pyrimidalis	Column Chinese Juniper	10	rapid	F Sp	CE
Juniperus chinensis pfitzeriana	Pfitzer	4	rapid	F G	WCE
Juniperus communis	Common Juniper	10-40	slow	F G	CE
Juniperus horizantalis	Creeping Juniper	3-4	rapid	F G	CE
Juniperus sabina	Savin Juniper	6	medium	F G Sp	E
Juniperus scopulorun	Colorado Juniper	40	rapid	F H G Sp	WCE
*Juniperus virginiana	Redcedar	30-40	medium	F H G Sp	WCE
Juniperus virginiana cannarti	Cannart Redcedar	6-15	medium	F G Sp	WCE
Juniperus virginiana schotti	Schott Redcedar	6-15	medium	F G Sp	WCE
Picea canadensis-albertiana	Black Hills Spruce	50-70	slow	H G Sp	CE
Picea excesa	Norway Spruce	50-65	medium	H G	CE
Picea pungeus	Colorado Spruce	30-40	slow	Sp G	CE
Pinus banksiana	Jack Pine	30-75	medium	G	E
Pinus montana mughus	Mugho Pine	8	slow	F Sp G	CE
Pinus nigra	Austrian Pine	35-50	rapid	Sp G	WCE

Botanical name	Common name	Height in feet	Growth	Use	Section of Kansas
Pinus ponderosa	Western Yellow Pine	50-75	rapid	Sp G	WC
Pinus strobus	White Pine	50-65	medium	Sp G	E
Pinus sylvestris	Scotch Pine	50-65	rapid	Sp G	WCE
Pseudotsuga douglasi	Douglas-fir	50-70	medium	Sp G	CE
Thuja orientalis	Oriental Arborvitae	6-25	rapid	Sp G H F	CE

Some Annuals For Kansas

Botanical name	Common name	Height in in.	Blooming Date	Blooming Color	Plant. D. inches	Use	Exposure
Ageratum houstonianum	Mexican Ageratum	18-24	7-10	lav,bl,wh	8-10	E B	sun
Alyssum maritimum	Sweet Alyssum	6-12	6-10	white	6-8	E R	sun,p.sh
Anagallis arvensis caerulea	Common Pimpernel	6-12	5-10	blue	8-10	E B	sun
Antirrhinum majus	Common Snapdragon	12-30	6-10	various	10-12	B C	sun,p.sh
Arctotis grandis	Bushy Arctotis	15-30	6-9	wh-blue	12-18	B C	sun
Brachycome iberidifolia	Swan-river-daisy	6-16	6-9	blue,rose	5-6	E C	sun
Calendula officinalis	Calendula	12-18	6-10	yellow	12-15	B C	sun
Callistephus chinensis	China-aster	12-30	8-11	various	12-15	B C	sun,p.sh
Centaurea cyanus	Cornflower	12-24	6-11	pink,blue	6-8	B C	sun
Coreopsis tinctoria	Calliopsis	12-30	7-10	yellow	8-10	B C	sun
Cosmos bipinnatus	Common Cosmos	30-60	7-10	various	24-30	B C	sun
Cosmos sulphureus	Yellow Cosmos	30-72	6-10	yellow	24-26	B C	sun
Dianthus caryophyllus	Carnation	8-12	8-10	red	8-12	B C	sun
Dianthus chinensis	Chinese Pink	10-12	7-9	white-red	8-10	E B C	sun
Eschscholtzia californica	Common California-poppy	12-18	4-10	yellow	8-10	B C	sun
Gaillardia pulchella picta	Painted Gaillardia	18	6-10	yellow-red	12	B C	sun
Gomphrena globosa	Globe Amaranth	12-18	7-8	various	6-8	B C	sun
Gypsophila elegans	Common Gypsophila	18	5-6	white,rose	8	B C	sun
Helichrysum bracteatum	Strawflower	24	7-10	various	12-18	B C	sun
Hunnemania fumariaefolia	Goldencup	24	7-10	yellow	8-10	B C	sun
Impatiens balsamina	Garden Balsam	12-24	6-9	various	10-18	B	sun
Lathyrus odoratus	Sweet Pea	24-40	6-9	wh-purple	3-6	C	sun,p.sh
Linum grandiflorum	Flowering Flax	12-18	5-10	red	8-12	B C	sun
Lobelia erinus	Edging Lobelia	4-5	6-10	blue	6-8	E B	sun,p.sh
Nicotiana alata	Winged Tobacco	24-36	6-11	white,red	24	B	sun
Nigella damascena	Love-in-a-mist	12-18	6-11	white,blue	8-12	B	sun
Petunia hybrida	Common Petunia	12	6-11	white-purple	10-12	B C	sun,p.sh

Botanical name	Common name	Height in in.	Blooming Date	Blooming Color	Plant. D. inches	Use	Exposure
Phlox drummondi	Drummond Phlox	6-18	4-10	wh,red,purp	8	B C	sun
Portulaca grandiflora	Common Portulaca	3-6	3-11	various	4-6	E	sun
Reseda odorata	Common Mignonette	12-18	6-9	yellow-wh	8	B C	sun,p.sh
Salpiglossis sinuata	Scalloped Salpiglossis	18-24	6-10	yellow-black	6-10	B C	sun
Salvia splendens	Scarlet Sage	18-24	6-9	red,wh,bl	12	B	sun
Sanvitalia procumbens	Common Sanvitalia	6	6-10	yellow	6-8	B E R	sun
Scabiosa atropurpurea	Sweet Scabiosa	24-30	7-10	wh,red,purp	8-10	B C	sun
Tagetes erecta	Aztec Marigold	30	6-10	yellow	8-10	B C	sun
Tagetes signata	Striped Marigold	12	6-10	yellow	8-10	B C	sun
Tropaeolum majus	Common Nasturtium	8-10	6-10	various	12	B C	sun
Verbena hortensis	Verbena	12	6-10	various	12	B C E	sun
Vinca rosea	Madagascar Periwinkle	12-24	6-10	white,red	12	B C	sun
Zinnia elegans	Common Zinnia	12-36	6-10	various	12	B C	sun

Some Perennials For Kansas

Botanical name	Common name	Height inches	Blooming color	Blooming date	Exposure	Use
*Achillea millefolium	Common Yarrow	12-18	white, red	5-8	sun	B Wg C
Achillea ptarmica	Sneezewort	12-18	white	5-9	sun	B C
Ajuga reptans	Carpet Bugle	3-6	v blue	5-6	shade, p.sh	E R
Althea rosea	Hollyhock	60-70	various	6-10	sun	B
Alyssum saxatile	Goldentuft	12	yellow	3-4	sun	E R
Anchusa italica	Italian Bugloss	30-48	blue	6-9	sun, p.sh	B C
Anchusa myosotidiflora	Siberian Bugloss	12-18	blue	5-6	sun, p.sh	B
*Anemone canadensis	Meadow Anemone	12-24	white	6-7	sun, p.sh	B Wg
Anemone japonica	Japanese anemone	24-36	white pk pur	9-11	p. shade	B C
*Aquilegia canadensis	American Columbine	12-24	yellow red	3-6	sun, p.sh	B Wg C
(Aquilegia hybrida)	(Hybrid Columbine)	30	various	4-5	p. shade	B C
Aquilegia vulgaris	European Columbine	36-48	violet blue	4-5	p. shade	B
Arabis albida	Wallcress	6-8	white	3-5	sun, p.sh	E R
*Asclepias tuberosa	Butterflyweed	18-30	orange	6-7	sun	B Wg C
*Aster concolor	Red Aster	12-30	red	8-10	sun	B Wg C
*Aster drummondi	Drummond Aster	12-48	white	9-10	sun	B Wg C
*Aster kumleini	(Wild Aster)	12	purple	8-10	sun	B Wg C
Aster novae-angliae	New England Aster	30-40	rose	9-10	p. shade	B C
*Aster turbinellus	Prairie Aster	40-70	purple blue	10-11	sun	B Wg C
*Baptisia australis	Blue Wild-indigo	24-48	dark blue	5-6	sun	B Wg C
*Boltonia asteroides	White Boltonia	50-70	white	7-9	sun, p.sh	B Wg
*Callirhoe involucrata	Low Poppy-mallow	9-12	rose	5-9	sun	Wg
Campanula medium	Canterbury-bells	24-36	various	6-7	sun	B C
Campanula persicifolia	Peachleaf Bellflower	24-36	blue violet	5-7	sun, p.sh	B C
Centaurea montana	Mountain-bluet	12-24	purple	5-9	sun	B R C
Centranthus ruber	Jupitersbeard	12-18	crimson	6-9	sun	B C
Cerastium tomentosum	Snow-in-summer	4-6	white	5-6	sun	E R
Ceratostigma plumbaginoides	Larpenta Plumbago	8-12	blue	7-10	sun	E R
Chrysanthemum coccineum	Painted Lady	18	pink white	5-6	sun, p.sh	B C
Chrysanthemum maximum	Pyrenees Chrysanthemum (Shasta Daisy)	24	white	6-8	sun	B C
Colchicum autumnale	Autumn Crocus	4	various	9	sun, p.sh	B R
Convallaria majalis	Lily-of-the-valley	6-8	white	4-5	shade	C
Coreopsis grandiflora	Big Coreopsis	24	yellow	5-8	sun	B C
Coreopsis lanceolata	Lance Coreopsis	24-36	yellow	5-8	sun	B C
Crocus vernus	Common Crocus	5	purple white	4	sun, p.sh	E
Daphne cneorum	Rose Daphne	10-18	rose pink	3-9	sun	B R
Delphinium hybridum	Mountain Larkspur	36-48	blue	4-8	sun	B C
Dianthus barbatus	Sweet William	12-18	various	5-7	sun	B C

Dianthus deltoides	Maiden Pink	4-6	red	5-7	sun	E R
Dianthus plumarius	Grass Pink	6-8	various	4-6	sun	E R C
Dicentra spectabilis	Bleedingheart	12-24	rose	3-5	p. shade	B
Dictamnus albus	Gasplant	24-30	white	6	sun	B C
Echinacea purpurea	Hedgehog-coneflower	24-36	rose	6-10	sun	B Wg C
Gaillardia aristata	Common Perennial Gaillardia	12-24	yellow red	5-9	sun	B Wg C
Gypsophila paniculata	Babysbreath	24-30	white	6-8	sun	B C
Gypsophila repens	Creeping Gypsophila	4-6	white	5-7	sun	E R
Helianthemum chamaecistus	Common Sunrose	10-12	yellow	6-7	sun	E R
Helianthus decapetalus	Thinleaf Sunflower	36-48	yellow	8-9	sun	B Wg C
Hemerocallis flava	Lemon Daylily	20-30	yellow	5-7	sun, shade	B C
Hemerocallis fulva	Tawny Daylily	24-36	red-orange	6-8	sun, shade	B Wg C
Heuchera sanguinea	Coral Bells	12-20	red	5-9	sun, p.sh	B R C
Hosta caerulea	Blue Plantainlily	18-24	blue	7-9	p.shade, sh	B
Hosta plantaginea	White Plantainlily	24-30	white	6-9	shade	B
Iberis sempervirens	Evergreen Candytuft	10-12	white	4-6	sun	E R
Iris germanica	German Iris	18-38	various	4-6	sun	B C
Iris pumila	Dwarf Flag	8	yellow, lilac	3-5	sun	E R
Iris sibirica	Siberian Iris	24-30	purple white	5-6	sun	B Wg C
Lathyrus latifolius	Perennial Pea	48-60	rose	7-9	sun	Sc
*Liatris punctata	Dotted Gayfeather	12-24	purple	7-11	sun	B Wg
*Liatris pycnostachya	Cattail Gayfeather	36-40	purple	7-9	sun	B Wg C
*Liatris scariosa	(Button Gayfeather)	24-36	pink	7-9	sun	B Wg C
Lilium candidum	Madonna Lily	24-48	white	6-7	sun	B C
Lilium regale	Royal Lily	36-48	white	6-7	sun	B C
Lilium tigrinum	Tiger Lily	48-60	orange-purple	7	sun	B Wg C
Linum perenne	Perennial Flax	12-24	blue	5-8	sun	B R
Lobelia cardinalis	Cardinalflower	24-30	scarlet	8-9	sun, p.sh	Wg C
*Lobelia siphilitica	Large Blue Lobelia	18-36	blue	7-9	p.shade	Wg B C
Lychnis chalcedonica	Maltese Cross	24-30	scarlet	6-7	sun	B C
Mertensia virginica	Virginia Bluebells	12-18	blue	4-5	sun, p.sh	B R
Muscari botryoides	Common Grape-hyacinth	4-6	blue, white	4	sun	B C
Narcissus jonquilla	Jonquil	8-10	yellow	4-5	sun, p.sh	B C
Narcissus poeticus	Poets Narcissus	6-8	white	4-5	sun, p.sh	B R C
Nepeta mussini	(Mussin's Catnip)	10-18	blue	5-9	sun	E R
*Oenothera missouriensis	Ozark Sundrops	10	yellow	5-9	sun	B R
Paeonia officinalis	Common Peony	24-30	red, white	5-6	sun	B C
Papaver nudicaule	Iceland Poppy	12	yellow	4-8	sun	B R C
Papaver orientale	Oriental Poppy	24-30	scarlet	5-6	sun	B C
Pentstemon barbatus	(Pentstemon)	30-60	red	7-8	sun	B C
Pentstemon cobaea	Cobaea Pentstemon	24	purple	6-7	sun	B Wg C
Pentstemon torreyi	Torrey Pentstemon	28-36	yellow,scarlet	6-8	sun	B C
*Phlox divaricata	Blue Phlox	10-12	lilac pink	4-6	sun, p.sh	B Wg R C

Phlox glaberrima	Smooth Phlox	24-30	white,purple	6-8	sun, p.sh	B C
Phlox paniculata	Garden Phlox	24-36	various	7-10	sun, p.sh	B C
Phlox sublata	Moss Phlox	6-8	pink, pur, wh	3-5	sun, p.sh	E R
*Physostegia virginiana	Virginia False-dragonhead	24-40	pink	7-8	sun	B C
Platycodon grandiflorum	Balloonflower	24-36	blue	6-8	sun	B C
Rudbeckia laciniata	Cutleaf Coneflower	60-70	yellow	7-8	sun	B Wg C
Salvia azurea-grandiflora	Great Azure Salvia	24-30	blue	8-9	sun	B Wg
Sanguinaria canadensis	Bloodroot	6-8	white	3-5	p.shade, sh	E R
Santolina chamaecyparissus	Lavender-cotton	12	yellow	6-7	sun	E R
Saponaria ocymoides	Rock Soapwort	9-10	pink	5-9	sun	E R C
Scilla sibirica	Siberian Squill	4-6	blue	4-5	sun, p.sh	R B
Sedum acre	Goldmoss	4	yellow	5	sun	R
Sedum spectabile	Showy Sedum	12-24	rose	7-9	sun, p.sh	B R
Sempervivum arachnoideum	Spiderweb Houseleek	3-6	red	7	sun, p.sh	R
*Solidago rigida	Stiff Goldenrod	36	gold	7-10	sun	B Wg C
Stokesia laevis	Stokesia	12-18	blue	6-10	sun, p.sh	B C
Thalictrum aquilegifolium	Columbine Meadowrue	30-48	white	5-7	sun, p.sh	B R C
*Tradescantia virginiana	Virginia Spiderwort	18-24	blue-purple	5-8	sun, p.sh	B Wg C
Tunica saxifraga	Saxifrage Tunicflower	6-8	pink	6-9	sun	E R
Veronica spicata	Spike Speedwell	18-24	violet	5-9	sun	B C
Veronica teucrium	Hungarian Speedwell	6-12	blue	5-6	sun, p.sh	B R
Vinca minor	Common Periwinkle	6-8	blue	4-6	sun, p.sh	E
Viola cornuta	Tufted Pansy	5-6	violet, white	4-11	sun, p.sh	E R Wg C
Viola odorata	Sweet Violet	8-10	violet	5-10	p.shade, sh	E R

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