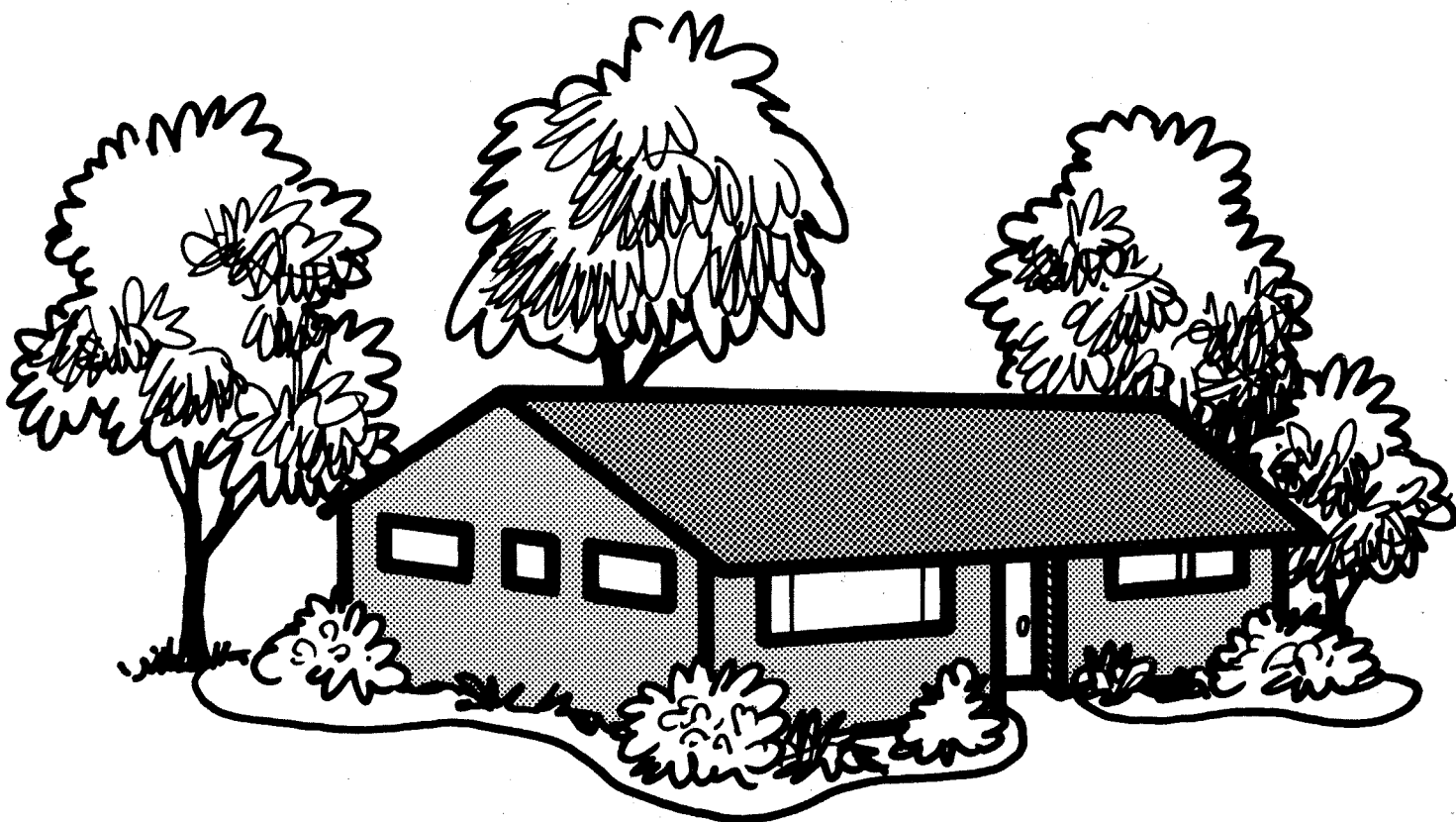


LANDSCAPE IDEAS

For North Dakota Homeowners

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Introduction:

North Dakotans have an increasing awareness of and desire for the benefits of residential and farmsite landscaping. This realization is derived in part from the pleasure and increased value a well-designed, implemented, and maintained landscape scheme brings to the property. Today, landscaping goes beyond mere aesthetics: It provides recreational opportunities, family time and, in many cases, an excellent investment.

Successful design is a communication of ideas, functions and feelings. This communication is brought together by using principles of design in scale, proportion, repetition, rhythm and balance. These principles are expressed via the elements of line, form, texture and color. This simply means determining what is desired and not desired in design. It will not come easily or automatically, but through an analysis of the property, the needs and desires of the family and of course, the budget.

Where to start? The turf area should be developed first by either seeding or sodding. With seeding, a mixture of Kentucky bluegrass, creeping red fescue and perennial ryegrass is the usual recommendation for most lawns in North Dakota. Sodding provides an "instant" effect, something desired by many new homeowners today. Sod is often one elite cultivar of bluegrass or a blend of Kentucky bluegrass cultivars. Sod should be selected carefully, as a poor turf can distract and greatly devalue an otherwise good landscape.

Pick a location – north, south, east or west and work on that side, taking into consideration the microclimate, soil conditions and how it is to be viewed. Then work around the house and property until the entire landscaping is completed to satisfaction. From a sequential standpoint, because of the time until maturity, trees are usually planted after the lawn has

been put in, to provide shade, control wind, provide some privacy or for framing. Finally, the planting areas or beds for the shrubs, vines and flowers can then be cut out and the plantings begun.

To keep everything cohesive, choose a color scheme. Textural impressions and functional purposes must be kept in mind when making plant selections and placements. This happens best from a planting plan.

Many common mistakes can be easily avoided, including:

- * Improper preplant preparation
- * Selecting non-hardy or borderline adapted plants
- * Overcrowding the plantings
- * Improper postplant care and maintenance
- * Planting too wide a species range

At this point you may wish to employ the services of a landscape designer or landscape architect. Either one can help you with layout and plant selection. If grading or construction work is required or desired, a landscape architect might be a better choice.

Both the landscape designer and landscape architect will work with your budget considerations and may serve by simply being a consultant on a one-time basis. Or, either or these professionals may provide a full, turn-key operation – from design to completion. Depending on what the intent is, landscape designers and landscape architects can be found at some garden centers, with landscape contracting companies, or in their own design firms.

This publication, while not a substitute for either one of these services, is directed at providing some ideas, encouragement and basic information. When coupled with a fertile imagination and common sense, a desirable landscape should be the result.

Plan the development of your landscape around a personal or family theme, considering the entire property initially. If budget prevents doing the total construction at once, then a determination of project phases is needed.

Landscaping for Suburb and Rural Sites:

All landscape designs should be first thought out on paper, and even in three-dimensional model form, to avoid costly mistakes. This applies to both suburban and rural homesites. A site plan for the property to be landscaped can easily be developed using a measuring tape at least 50 feet long, some grid paper and some number 2 pencils. Additional equipment might be a triangle, circle template, French curve and possibly a T-square.

Begin by locating all known points on the property. This includes but is not limited to:

- Property lines
- House, garage, patio, windows and doors
- Drives and walks
- Utility poles and lines
- Views onto and off the site
- Existing trees and shrubs
- Sharp topographic changes, rock outcrops
- NSEW exposures

If necessary, obtain a survey of the property if surveyor's corners or stakes are not evident. Accuracy is important! Inaccuracy at this point usually results in a poorly executed landscape.

Use the process of triangulation to locate building corners, trees and other objects (Figure 1). In determining which scale to use, the size of the area to be landscaped should be considered. Very small areas such as patios or backyards could use

a 1/4 inch or 1/8 inch scale; larger areas such as farmsteads may require a 1:20 scale. Using a grid paper, assign a scale value to each grid and draw the area in, over the grid markings. If the property or area to be landscaped is very large, several drawings at a 1:20 scale would be better than going to a scale which would shrink the property too much, such as a 1:40. At greater than 1:20 scale, some detail is lost or difficult to discern (Figure 2).

Once all the present features or inventory of the property have been completed on the drawing, the next step would be to identify the use areas of the property and

who the "users" would be: husband, wife, children, live-in relatives, pets and birds (Figure 3).

Some examples of concerns may be the suburbanite with two teenage children who have their own cars. The wife and husband

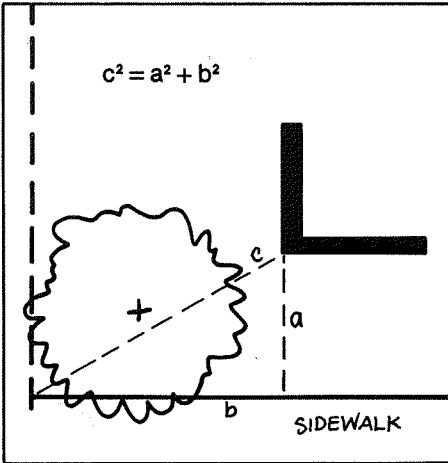


Figure 1

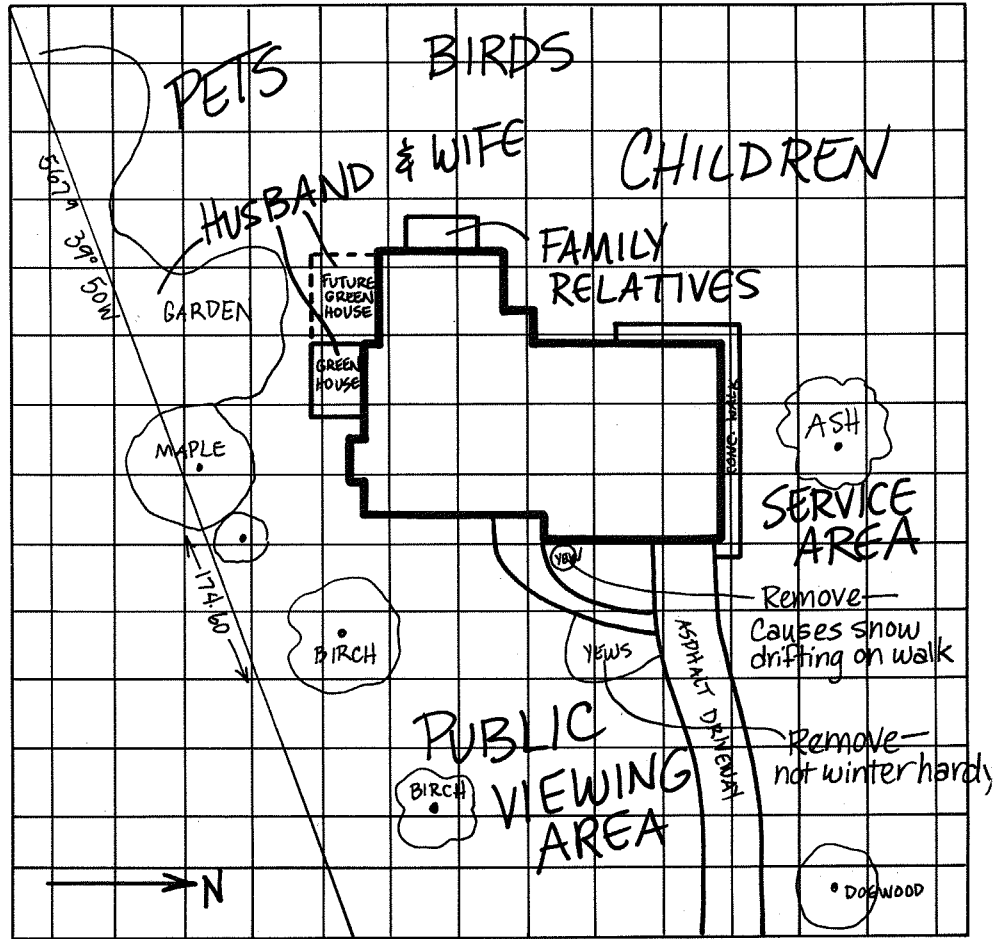


Figure 3

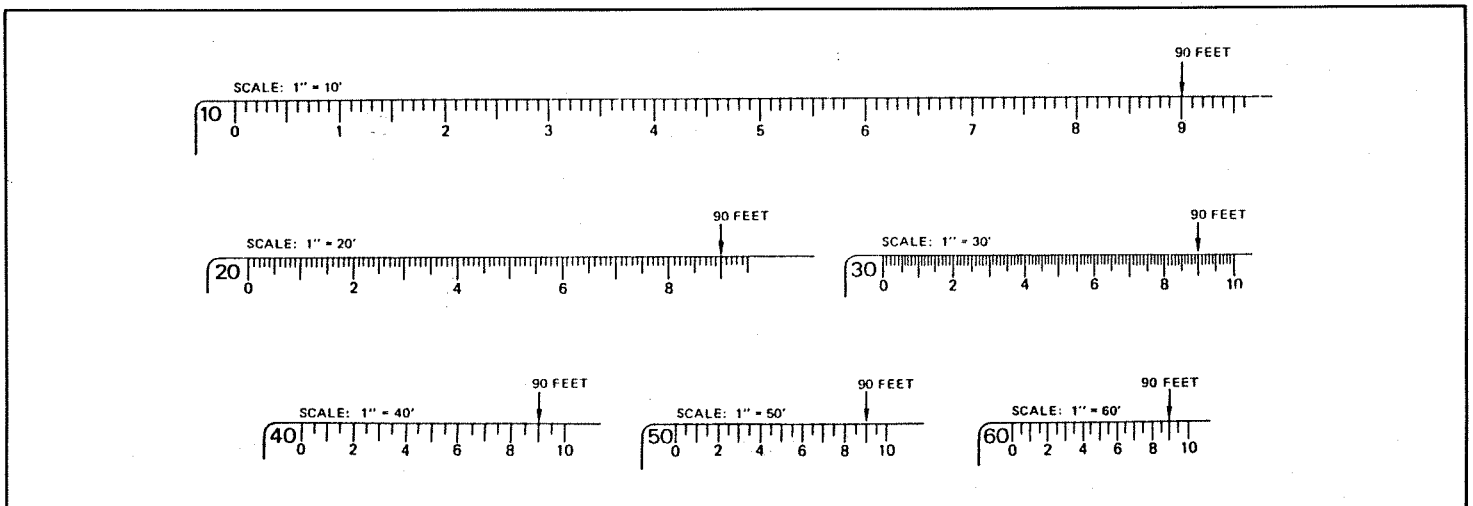


Figure 2. Reading the scale. The six views show where one measurement (90 feet) appears on each side of the scale instrument. (Individual foot units are not shown in the scales on the bottom line.)

are working and the house has only a two-car garage. Where and what to do with the extra vehicles? Perhaps some additional concrete needs to be poured, or simple concrete pavers added, adjacent to the driveway to accommodate the extra cars without blocking the drive (Figure 4).

An example of a concern with rural dwellers might be to screen the homesite from the worksite; barn, silo and tractors. In this instance, a screen planting of attractive shrubs or small trees might be desired and could offer an excellent backdrop for the house and its landscape development.

Other considerations that need to be articulated by the homeowner are:

Hobbies—gardening for flowers, for vegetables to eat fresh or produce to preserve?
 Birdfeeding and watching?

Entertaining—daylight or evening hours? Mosquitoes a problem?
 Lighting needed?

Children—play areas as they grow?
 Sandboxes, swings, waterslides, gymnastics? Will shade be needed? A fence?

Pets—dog run required?
 Doghouse?

Services—trash collection – firewood storage – clothes line? Recreational and leisure equipment storage?

Once lists such as these have been developed and the questions answered, these use or functional areas of the property should be visualized by placing markers in the lawn or yard. This is especially good for planting areas, patios and utility or service areas (Figure 5). On the drawing, these areas can be designated by putting large circles or bubbles around the drawing, once the dimensions and locations are agreed upon.

From here, it is suggested that several thumbnail, freehand sketches be developed as ideas to synthesize into the final drawing. For example, a

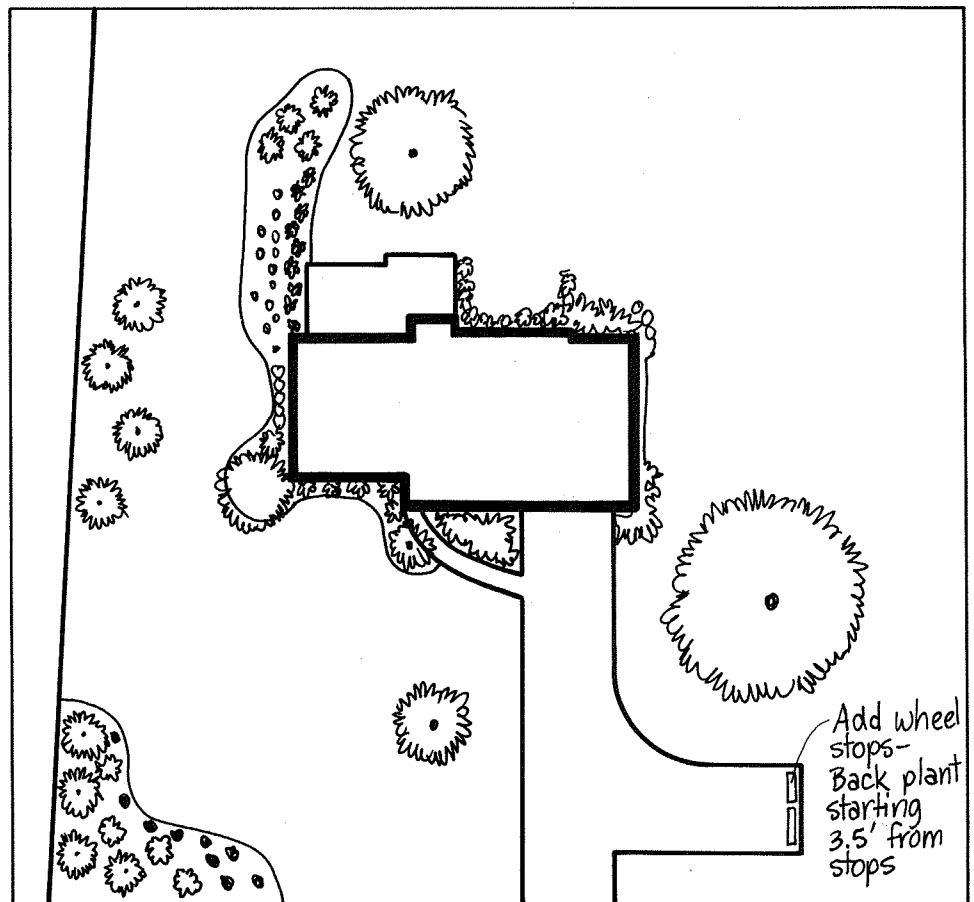
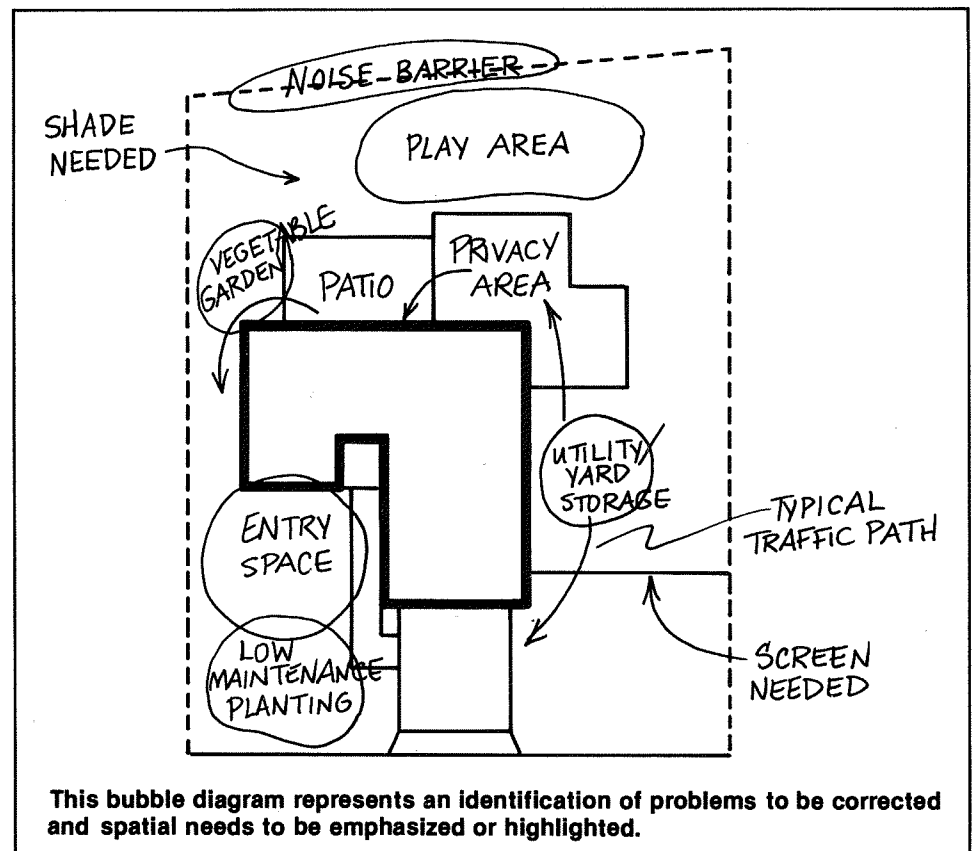


Figure 4



This bubble diagram represents an identification of problems to be corrected and spatial needs to be emphasized or highlighted.

Figure 5

screening on the east side of the house might be accomplished with a fence or plant material or a combination of both (Figure 6). The south side receives the most direct sunlight, so the homeowner wants an ornamental shade tree planted. The homeowner should develop as many thumbnail sketches as needed to arrive at a satisfactory solution to the design objective.

The Final Working Drawing:

Going back to the first basic plot plan, lay a sheet of tracing paper over it and re-trace the original property features. Referring to figure 6, placing the plant material around the homesite to accomplish the particular design objectives.

Selecting Specific Plants Hardiness Factor:

North Dakota is mostly in hardiness zone number 3. The southwest corner - roughly Bowman, Slope, Adams and Hettinger counties - is in hardiness zone 4. A north portion, Rolette and Bottineau counties, is in hardiness zone 2. Complicating these simple zonal designations

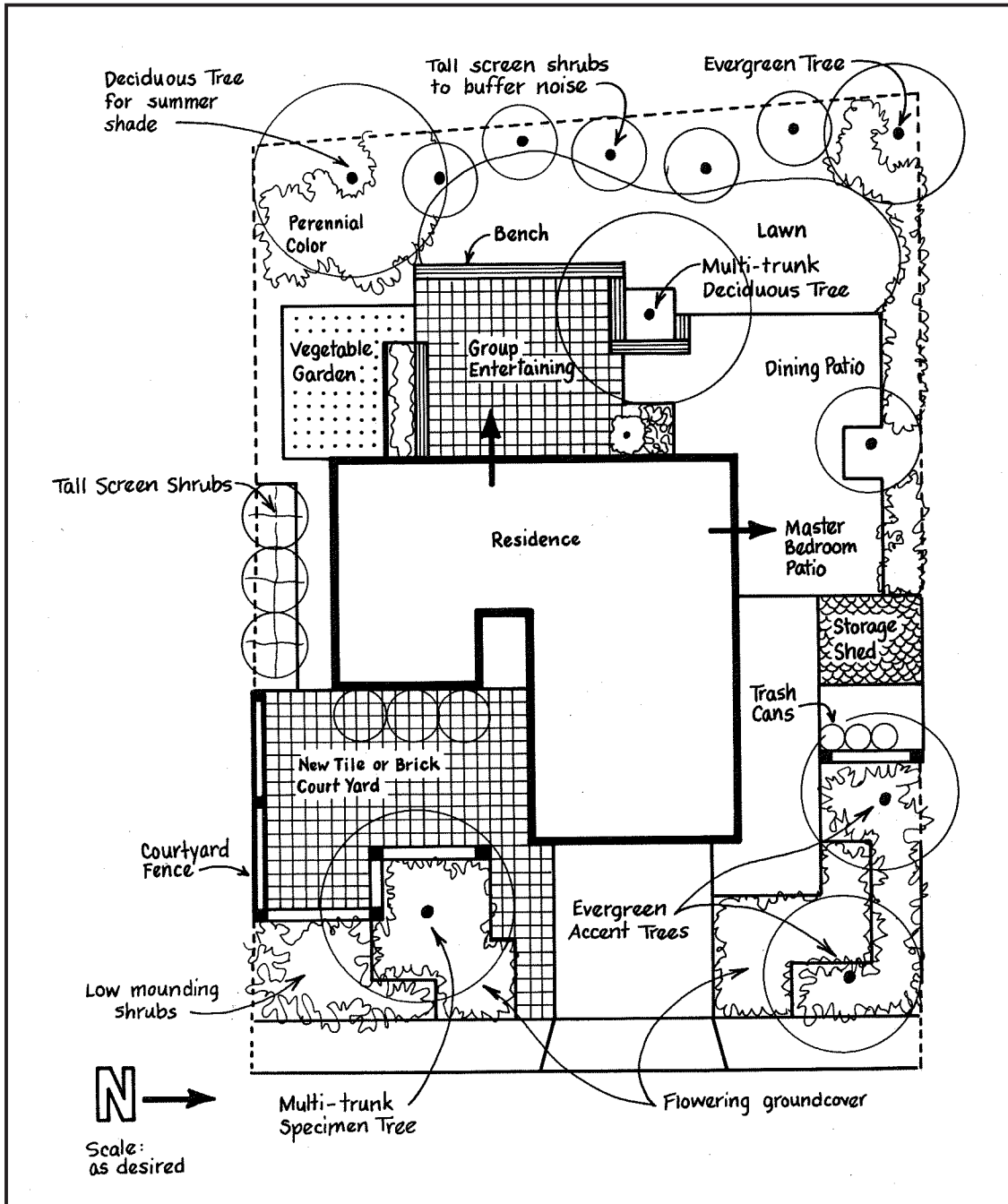


Figure 6

is the rainfall distribution in areas throughout the state, salt content of groundwater and the soil type. The counties in zone 4 have the highest average temperatures, but the fact that their precipitation is so low and the salt content of their irrigation water is high often makes this part of the state the most challenging for landscape development.

North Dakota is not a homogenous state weather-wise. Certain plants may grow lushly east of us, but may struggle in

North Dakota because of reduced precipitation, high soil pH or excessive winds.

The wind is a significant factor in everyday life, and definitely plays a role in landscape development. Those planning farmsites will need to consider shelterbelt plant selections and their establishment before settling into any permanent landscaping.

Winds in Bismarck prevail from the WNW and have annual mean

speed of 11 mph with a top speed of over 70 mph. At these wind speeds, many otherwise potentially usable plants are physically destroyed from shifting and debris striking them. Generally the fastest wind speeds are the same in winter as summer, except that in winter they will often last several hours. During the summer months, the duration of strong winds is usually on the order of a few minutes.

Table 1. A selection of woody plants intended for shelterbelt plantings in North Dakota.

Name	Deciduous Trees
Shrubs 6-12 feet height	18 to 45 feet height
Silver Buffaloberry (<i>Shepherdia argentea</i>)	Green Ash (<i>Fraxinus pennsylvanica</i>)
Chokecherry (<i>Prunus virginiana</i>)	Robusta Cottonwood (<i>Populus x robusta</i>)
Currants, golden and clove (<i>Ribes aureum</i> , <i>R. odoratum</i>)	Common Hackberry (<i>Celtis occidentalis</i>)
Common Lilac (<i>Syringa vulgaris</i>)	Russian Olive (<i>Elaeagnus angustifolia</i>)
Siberian Peashrub (<i>Caragana arborescens</i>)	White Poplar (<i>Populus alba</i>)
Scented Sumac (<i>Rhus trilobata</i>)	Redstem Willow (<i>Salix alba</i> 'Cheresina')
Dwarf Arctic Willow (<i>Silax purpurea</i> 'Nana')	Golden Willow (<i>Salix alba</i> 'Vitellina')
Red Osier Dogwood (<i>Cornus sericea</i> or <i>C. stolonifera</i>)	Amur Maple (<i>Acer ginnala</i>)
Arnold Red Honeysuckle (<i>Lonicera tatarica</i> 'Arnold Red')	Siberian Crabapple (<i>Malus baccata</i>)
Juneberry (<i>Amelanchier alnifolia</i>)	Imperial Poplar (<i>Populus</i> 'Imperial')
Late Lilac (<i>Syringa villosa</i>)	Siouxland Cottonwood (<i>Populus deltoides</i> 'Siouxland')
Evergreens - 15 to 12 feet height	
Rocky Mountain Juniper (<i>Juniperus scopulorum</i>)	
Ponderosa Pine (<i>Pinus ponderosa</i>)	
Scotch Pine (<i>Pinus sylvestris</i>)	
Colorado Spruce (<i>Picea pungens</i>)	
Black Hills Spruce (<i>Picea glauca</i> var. <i>densata</i>)	
Eastern Red Cedar (<i>Juniperus virginiana</i>)	

*Heights are approximate for dryland establishment over 20 years, assuming annual precipitation between 10-20 inches. Heights would be greater under irrigated conditions. Assistance in the development of this and other plant lists came from Dr. Dale Herman, Horticulturist, Department of Horticulture and Forestry, NDSU. His time and suggestions are greatly appreciated.

Plant Selections:

With North Dakota climatic conditions in proper perspective, plant selections for the suburban house and farm homesite can now be considered.

Farm Homesite Plants:

Shelterbelt Species:

An example of a proper farmstead windbreak layout is depicted in Figure 7. The planting scheme should contain a combination of dense shrubs, medium and tall evergreens and medium to tall trees.

If the windbreak planting is the first order of business, be sure to not overcrowd:

- * Leave plenty of room for cultivation practices - at least 2 feet on either side of the implement.
- * Provide ample room for trees, evergreen and deciduous, to put on new growth.
- * Avoid wind whipping damage to trees in adjacent rows by staking for the first year or two and careful pruning thereafter.
- * Do not plant evergreens between deciduous rows where overtopping ruins their leader growth.

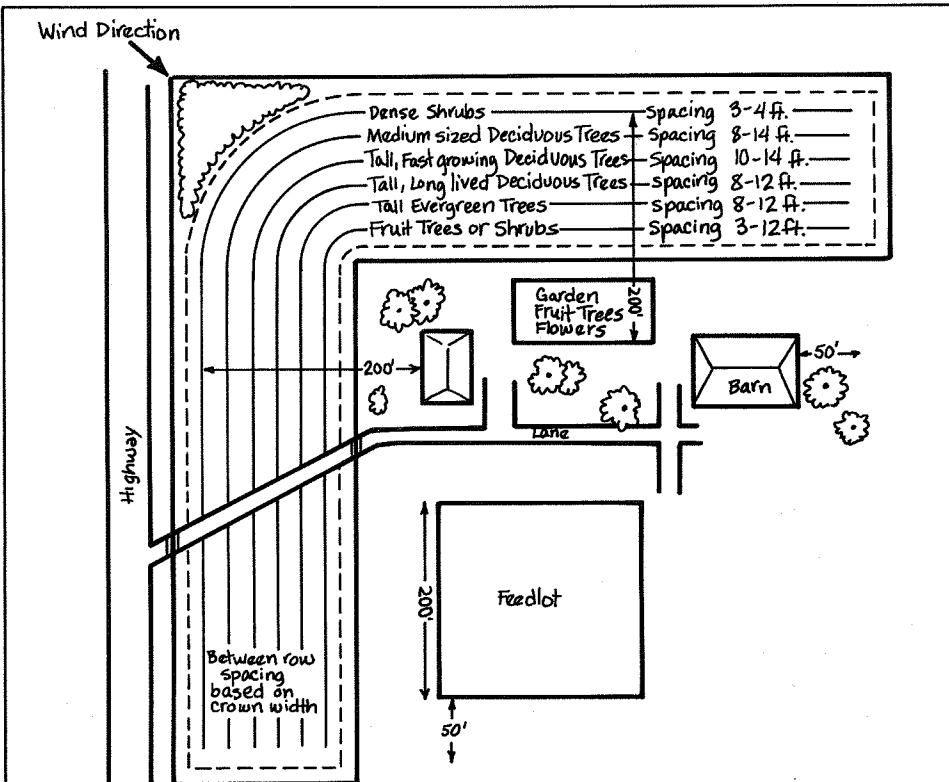
Spacing would vary with species, soil type and whether or

not irrigation will be provided. Within the row, spacing should be between 3 and 4 feet. Many plant closer initially to attain a faster windbreak effect, then thin to proper spacing in three to five years. Between-row spacing should be predicated on cultivation equipment size, but generally varies between 16 and 30 feet (Figure 7).

Around the Home:

With the shelterbelt on its way to being established at the farmsite and with the suburban home in need of landscaping, selecting the right species of plants for each situation is quite important. The previous plan development has involved placement of plants and

identifying them simply as evergreen or deciduous plants. Now some names need to be assigned to the various plant selections (Figure 8). The plants are assigned numbers and a listing of ornamentals which could be used in that position. The list is by no means inclusive, and the homeowner is encouraged to experiment with hardy plants from other than our region to encourage diversity and interest (Table 2).



An example of the proper way to lay out a farmstead windbreak to maximize protection for gardens, orchards and buildings.

Changing Environment:

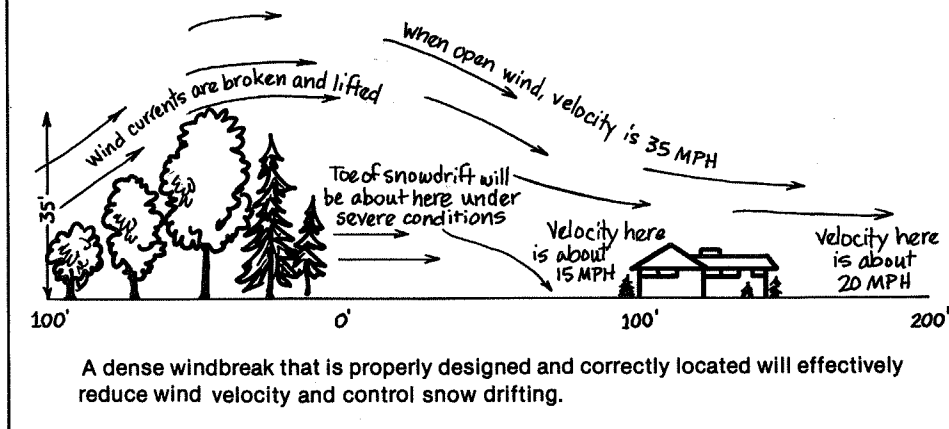
Keep in mind that as all plantings mature, microclimates change. For example, more shade is cast, wind movement is disrupted, humidity is increased and generally more wildlife is attracted. This necessitates continuous changes in management of the property. When fruit trees begin bearing, spraying schedules compatible with fruit harvest may be needed. As shade trees mature and the turf beneath thins, alternative ground covers may be desired. Certainly pruning chores will be at least an annual occurrence.

Personal interests and capabilities change with time as well. Everything has a life. When the landscape or property becomes too much to manage, change it to meet the new lifestyles, interests or desires.

The country is filled with homes of architectural grace and beauty surrounded by diminished, overgrown or outdated landscaping.

Appreciation of Beauty and Value to Property:

None of us have identical tastes in landscaping, and from the standpoint of aesthetics and design concept, just about anything goes. From a functional approach, plants are selected



A dense windbreak that is properly designed and correctly located will effectively reduce wind velocity and control snow drifting.

Figure 7

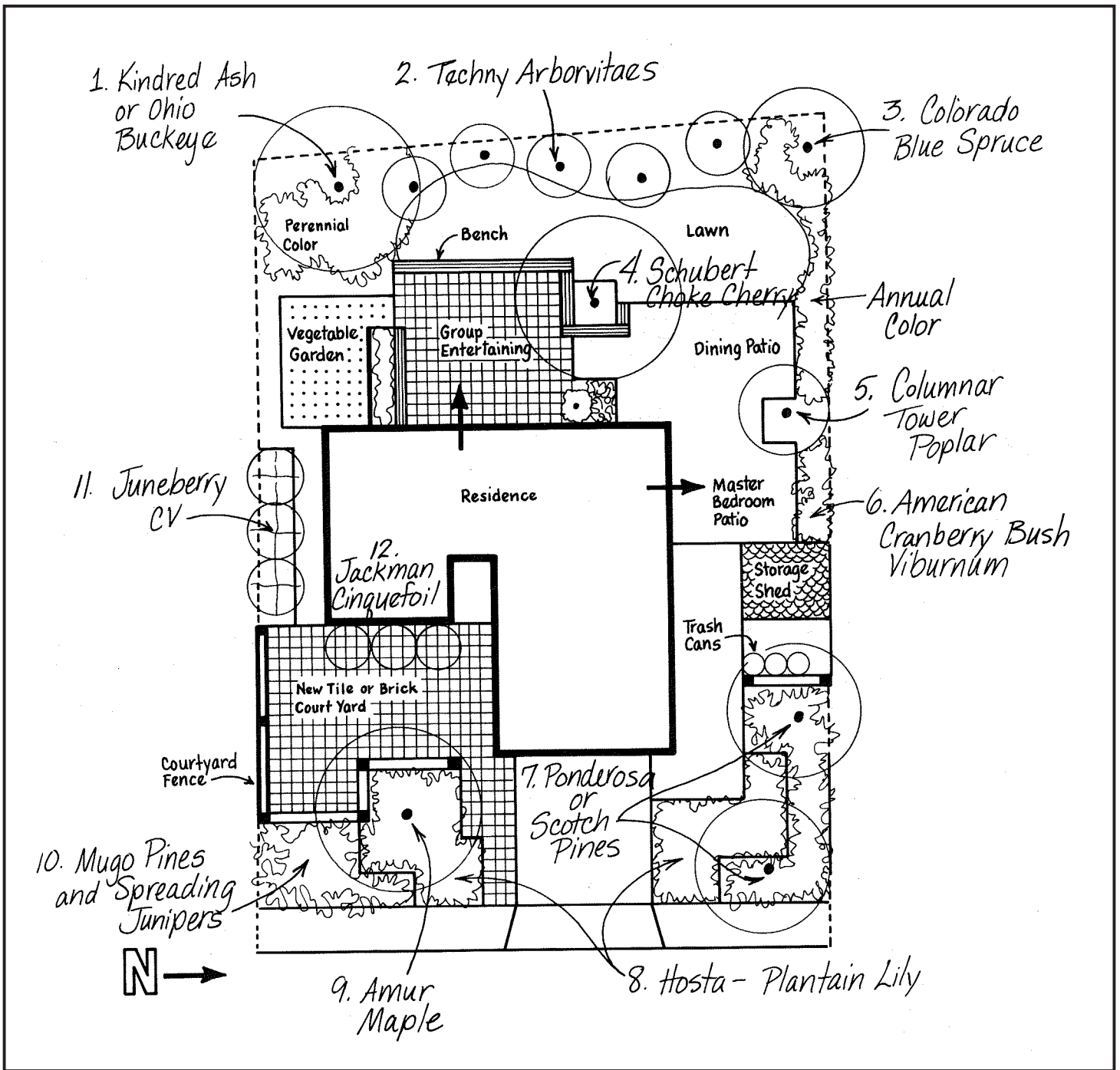


Figure 8

Table 2. Possible Alternative Plants for Landscaping Figure 8.

Plant Number	Alternatives	Characteristics
1.	Bur Oak (<i>Quercus macrocarpa</i>) Common Hackberry (<i>Celtis occidentalis</i>) Silver Maple (<i>Acer saccharinum</i>)	Slow growth Structural strength Rapid growth
2.	Brandon Arborvitae (<i>Thuja occidentalis</i> 'Brandon') Medora Juniper (<i>Juniperus scopulorum</i> 'Medora')	Hardy Staminate (no fruit)
3.	Black Hills Spruce (<i>Picea glauca densata</i>) Larch (<i>Larix decidua</i>)	Faster growing than Colorado spruce Fall color good
4.	Paper Birch (clump) (<i>Betula papyrifera</i>) Spring Snow Crabapple (<i>Malus</i> 'Spring Snow')	Graceful No messy fruit, white flowers
5.	Columnar European Aspen (<i>Populus tremula</i> 'Erecta') Lombardy poplar (<i>Populus nigra</i> 'Italica')	Rare in trade Weak wood
6.	Viburnums (<i>V. lentago</i>) (<i>V. lantana</i>) (<i>V. dentatum</i>)	Dependable, different fruit colors; growth and texture vary
7.	White Pine (<i>Pinus strobus</i>) Limber Pine (<i>Pinus flexilis</i>)	Use only in eastern sector of N.D. Use in western N.D.
8.	Carpet Bugleweed (<i>Ajuga reptans</i>) Bergenia	Plant close in weed-free bed Many variable colors
9.	Amur Tree Lilac (<i>Syringa amurensis japonica</i>) Hawthorn (<i>Crataegus x mordenensis</i> 'Toba') (<i>Crataegus arnoldiana</i>)	Intolerant of poor drainage Attractive spring flowers; thorns; cedar-apple rust
10.	Globe Arborvitae (<i>Thuja occidentalis</i> 'Woodwardii') Maney Juniper (<i>Juniperus chinensis</i> 'Maneyi')	Winter protection needed Irregular habit may need controlling
11.	Viburnum - select an alternate from number 6 above European Red Elder (<i>Sambucus racemosa</i> 'Redman')	Susceptible to wilt; needs moisture
12.	Pygmy Peashrub (<i>Caragana pygmaea</i>) Dwarf Pink Spirea (<i>Spirea bumalda</i>)	Exceptional drought winter hardiness Chlorotic in high pH soils

which can best meet those functional purposes.

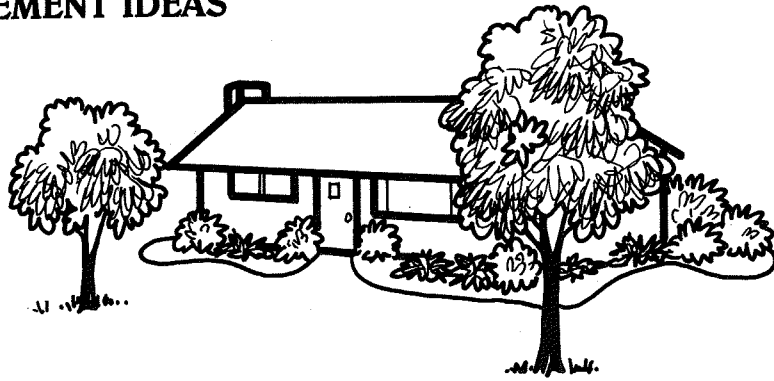
Plant foliage, flowers, fruit, branching character winter and summer, background color and texture all contribute to the dynamic nature of landscape setting. If the design concept is one of formality and control, then messy flowers and fallen fruits and twigs would be inappropriate. In a natural landscape, such a setting would be desirable to attract wildlife.

Any landscaping that is well planned, executed and maintained will add value to the property over time. With well landscaped properties, the value of houses - suburban and rural - increases 7% or more, according to a survey of realtors. Well maintained, landscaped properties not only add value, they aid in completing sales of homes.

APPENDIX OF PLANT PLACEMENT IDEAS

Trees Frame the Landscape Scene

One or two trees properly placed in the front lawn frame the house and create a landscape scene.



Trees Provide Background in the Landscape

Trees in the rear yard provide shade and background in the landscape.

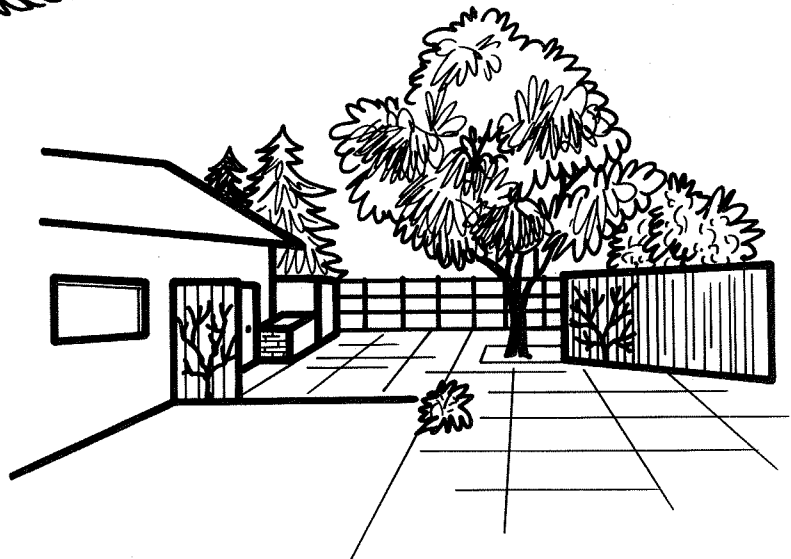


Enframement of a distant view or screening of an undesirable view can also be accomplished with trees.



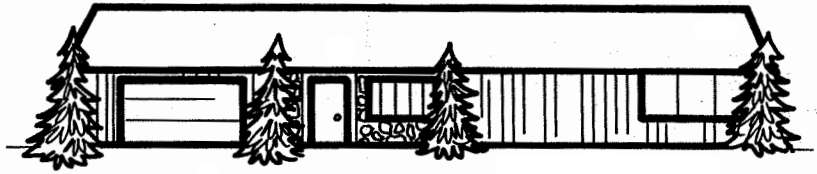
Enclosure Adds Beauty and Comfort to the Landscape Scene

Trees used for enclosure of a patio area often can be planted within the patio. A striking effect can be achieved if a tree with unusual bark characteristics or an attractive flowering habit is used in this manner. Locate the tree no closer than ten feet from the house. A distance of twenty feet is maximum.

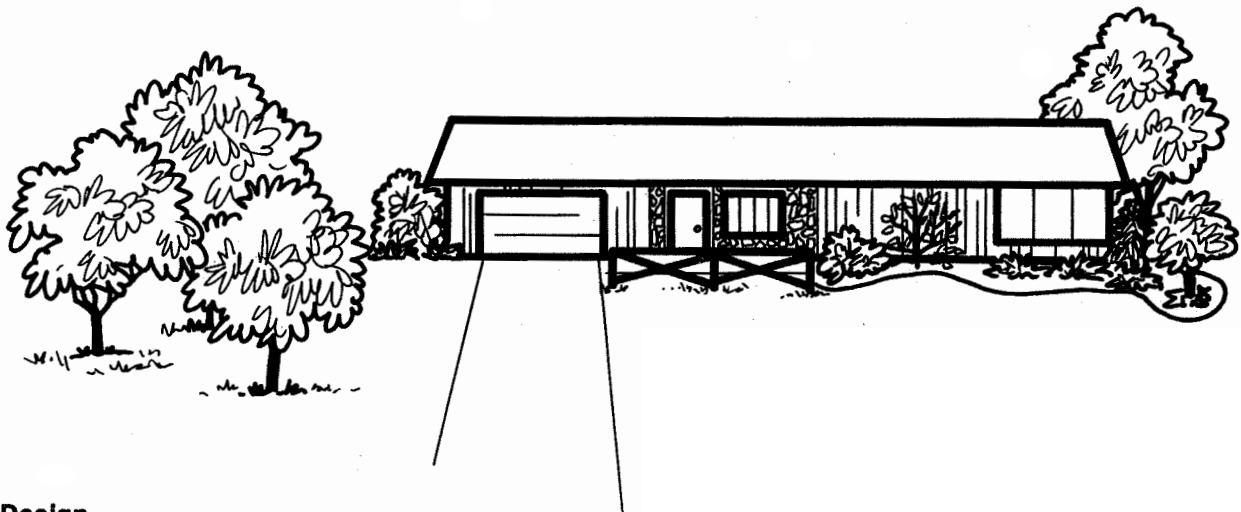
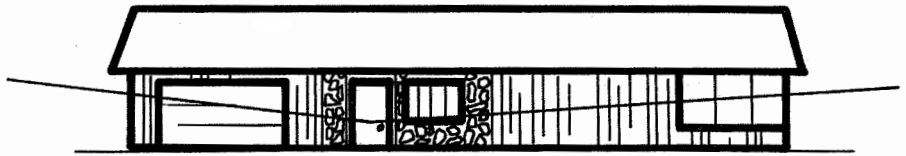


Poor Design

Plants accent the harsh vertical lines of the house rather than blending the house with the surrounding landscape.



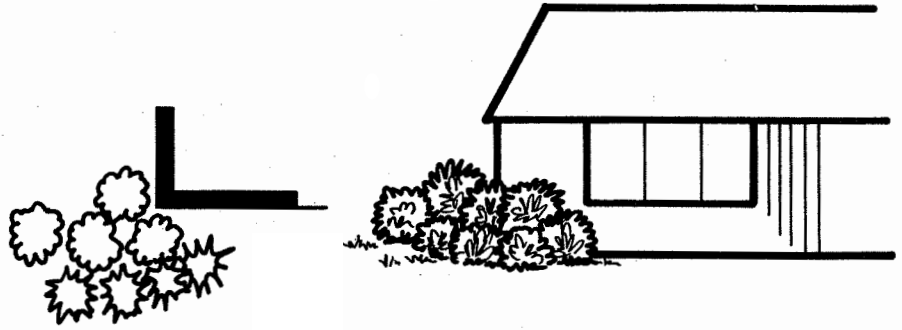
Plants at the corners of the house should be taller than those near the entrance. An imaginary line drawn from the center of the front door to a point on the corner of the house located $\frac{1}{2}$ to $\frac{2}{3}$ the height from the ground indicates the approximate height plants should be in front of the house.



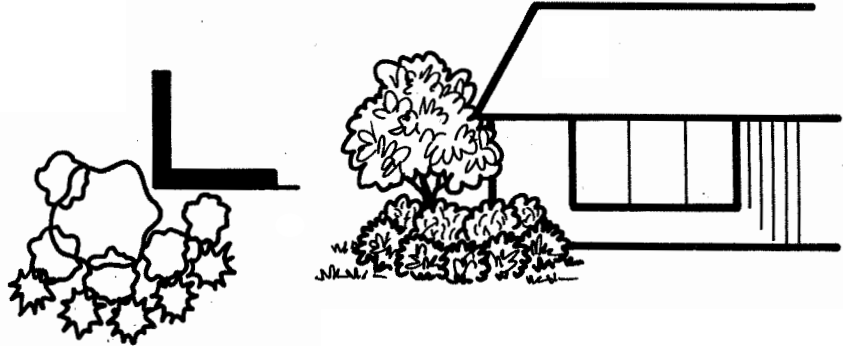
Good Design

Plants are arranged to soften the harsh architectural lines of the house.

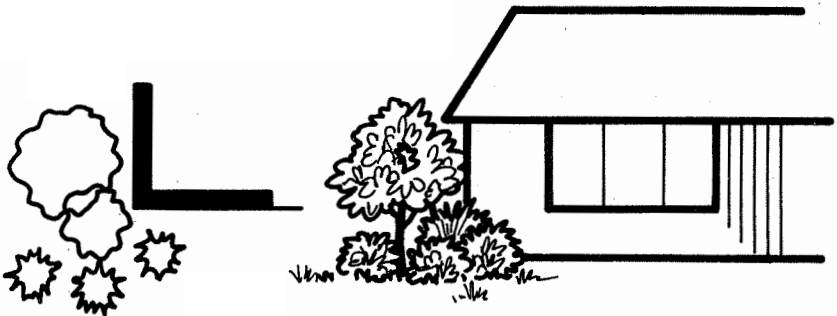
Planting suitable for a small low house where a tall corner planting would be too massive.



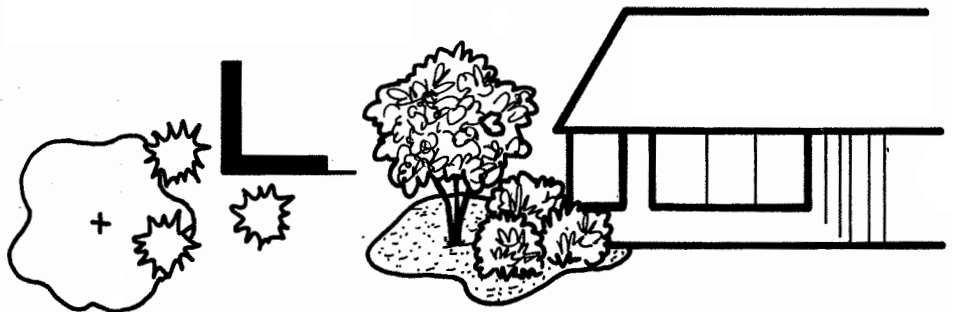
Planting which combines taller shrubs used with lower growing types.



A planting which can be used when space between the side of the property line and the house is limited.



A planting which is designed for a house with a wrap-around corner window.



For more information on this and other topics, see: www.ag.ndsu.edu

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