# Landscape Planting Design

Where in the design process should planting design begin?

- Site Measurements
- Plan is drawn to scale
- Functional diagramming, circulation routes
- Design development & schematics done

  (plants are designated only by symbol & size at this stage- not yet named.)

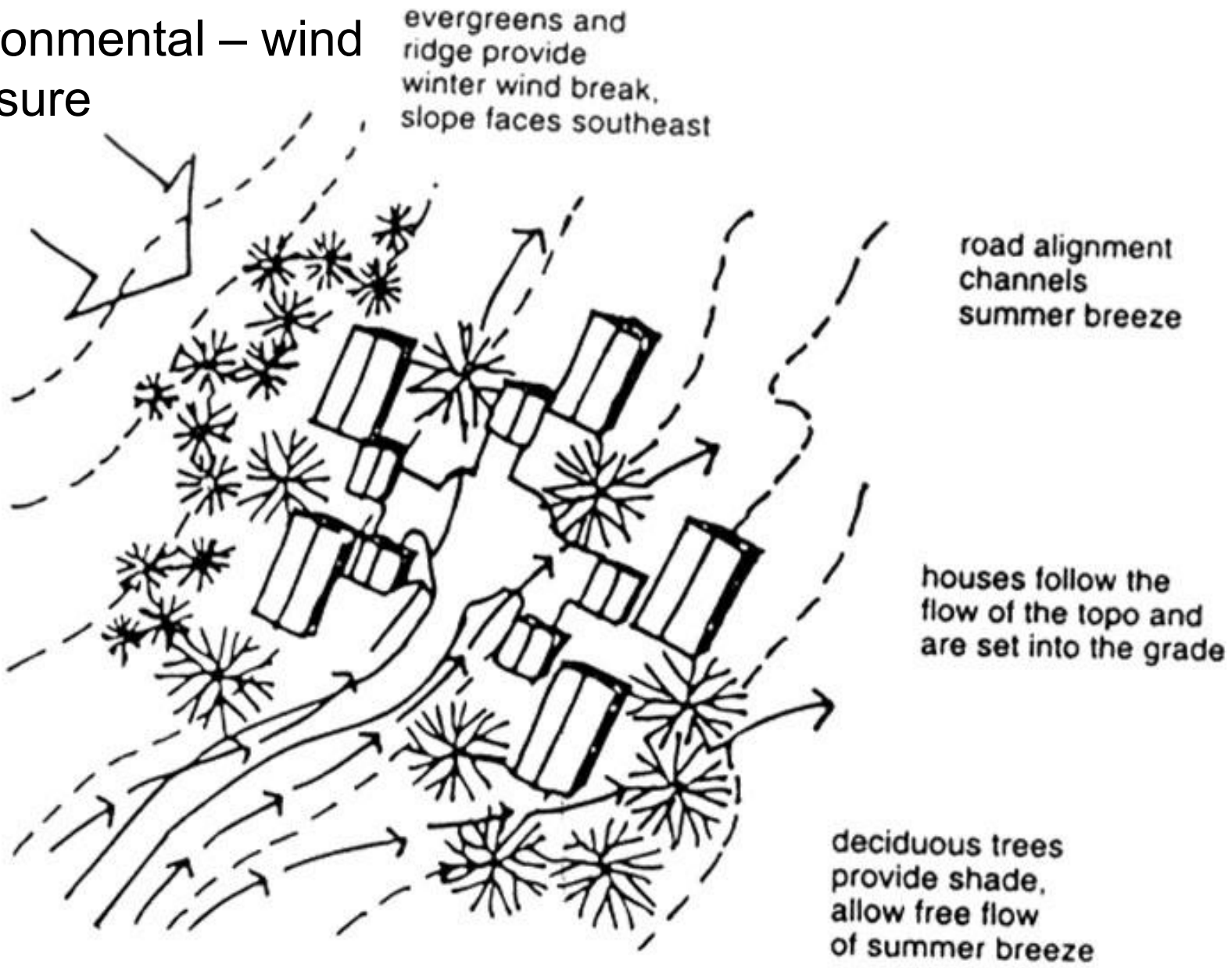
# Planting Design

Plant Choices begin,  based on:

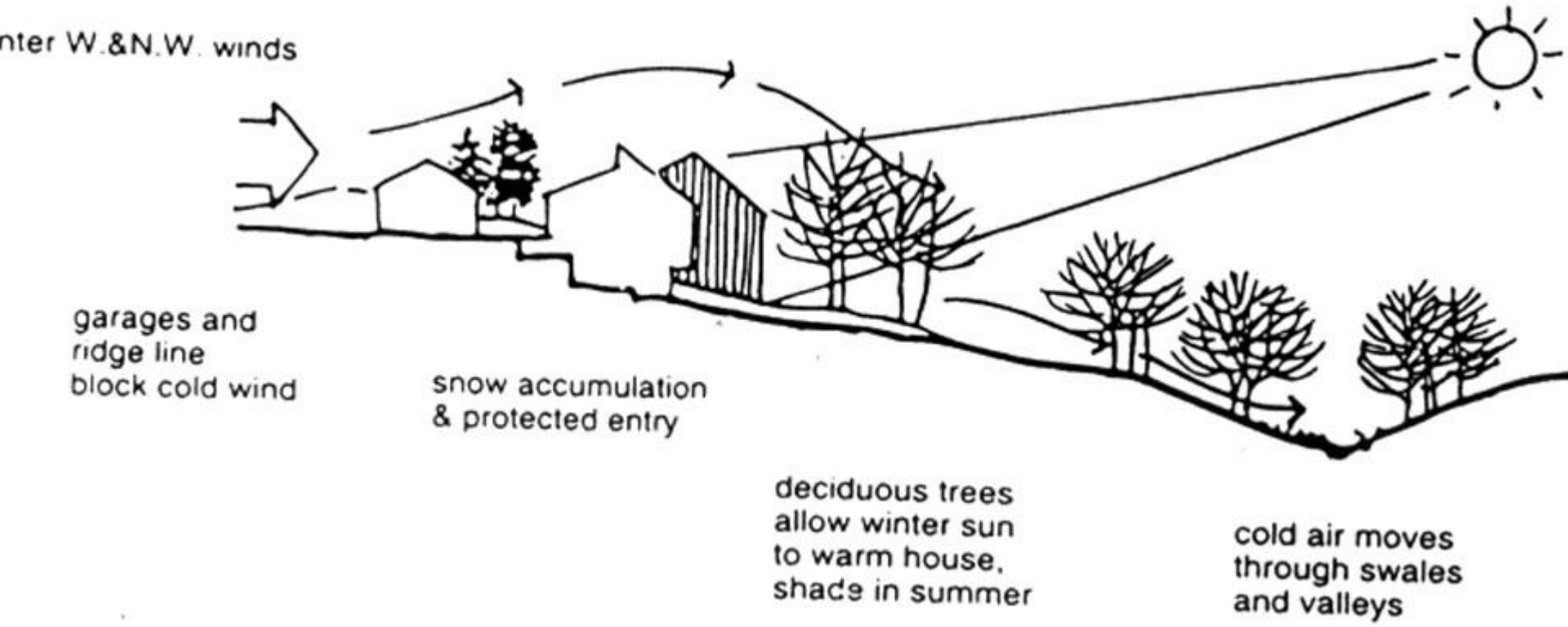
- Reinforcing the physical design of the plan
- Meeting functional needs, screening, cooling, heating
- Creating backdrops
- Strengthening circulation patterns
- Creating focal points,
- Framing views, softening architecture
- Choosing plants based on location and environmental conditions of site  ie. soil types, sun or shade exposure, wind exposure, clients wishes etc.

Function – Windbreak
Environmental – wind exposure

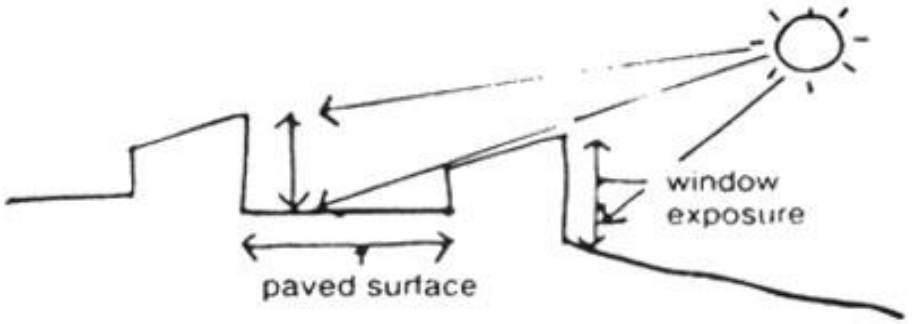




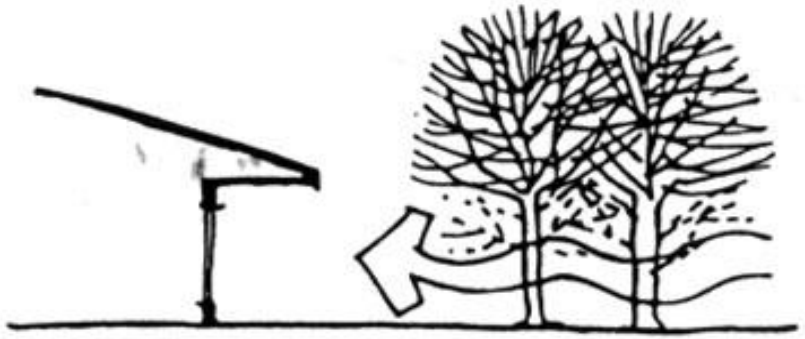
# Function- Sun/Shade for House
# Environmental -Direction of exposure for plant



# Function: Planting to buffer temperatures




**TO MAKE IT WARMER:**



**TO MAKE IT COOLER:**

prune lower growth for increased air circulation

## COOL & TEMPERATE ZONES

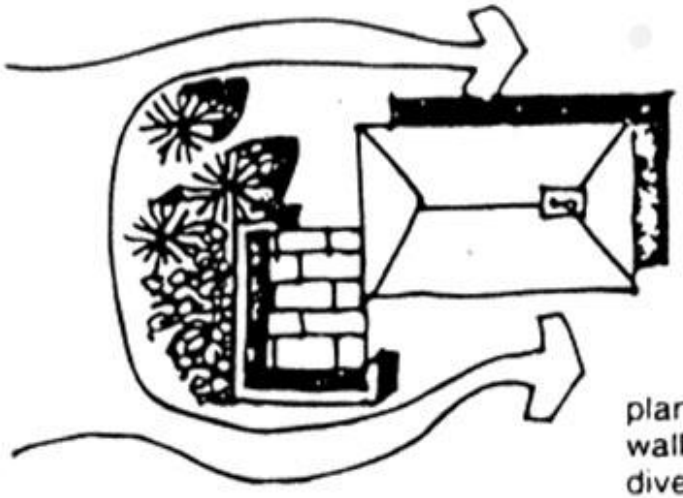
*To make it warmer:*

- Maximum solar exposure
- Paved areas, rock or masonry surfaces, southern slopes for increased absorption of radiation
- Structural or plant "ceilings" to reflect back outgoing radiation at night
- Sun pockets
- Wind breaks and cold air diverters

*To make it colder:*

- Shade trees and vines
- Overhangs, awnings, canopies (cooler in day time, warmer at night)
- Planted ground covers
- Pruning of lower growth for increased air circulation
- Evaporative cooling (sprinklers, pools, ponds and lakes)

# Function/Environmental – Windbreaks

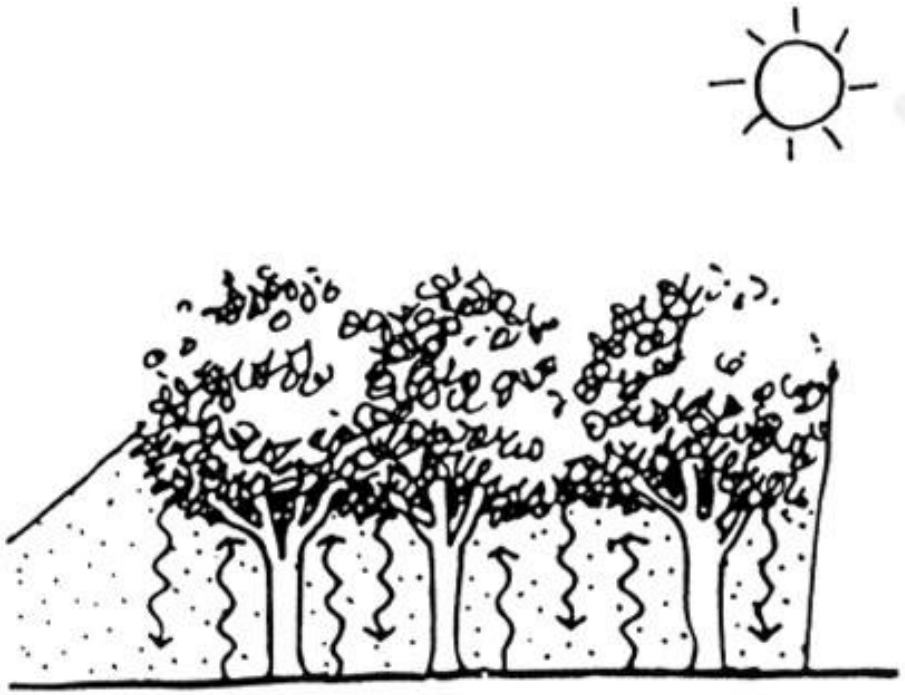


plant material
walls to
divert wind

*To make it less windy:*

- Wind breaks, baffles, diverters (plant material and structures)
- Berms, land form
- Semi-enclosed outdoor living areas

# Environmental – Air Movement, Humidity



overhead planting
slows evaporation
adds transpiration

**TO MAKE IT MORE HUMID:**

*To make it more humid:*

- Overhead planting (slows evaporation and adds transpiration)
- Low windbreaks
- Planted ground covers
- Pools, cascades, sprinklers

*To make it drier:*

- Maximum solar exposure
- Maximum ventilation
- Efficient drainage system
- Paved ground surfaces

# Planting Design Client Criteria

Usual dislikes:

- No prickly or thorny plants
- Plants that *collect* leaves in them
- Plants with large leaves to clean up.
- Plants with messy fruits, pods etc.
- Plants that are floppy - over walks etc.
- Poisonous plants
- Plants that require high maintenance
- Plants that are only semi-hardy
- Plants with specific colors the client dislikes
- Malodorus plants, flowers, leaves or other.

# Planting Design-Client Criteria

Likes:

- Low maintenance plants
- Plants that flower for a long period of time
- Sequential bloom – color in every season or plants with year around interest.
- Favorite colors of plants
- Plants with a lot of fragrance, lilacs, Daphne etc.
- Fast growing or planting more mature sizes for “instant” landscape.
- Sentimental favorites.
- Plants they’ve seen in a book or in another garden

# Planting Design - Site Criteria

- Environmental – sun/shade, wind exposure, hardiness, soil pH, annual rainfall
- Water availability
- Flat or sloped site & direction of exposure
- Traffic & compaction near plants
- Winter snow removal or chloride use
- Pets or not
- Deer vulnerability
- Function of the plant
- Focal point
- Wildlife attractant

# Planting Design
# Physical Properties of Plants

1.) Form
2.) Size
3.) Texture
4.) Color
5.) Value

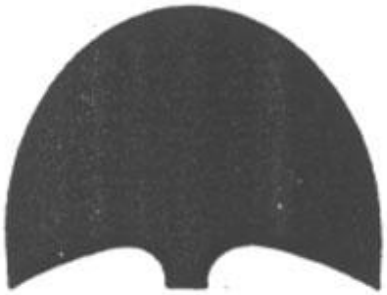
# Planting Design
# Form

*Much of the shape of trees is determined by how the branching structure occurs as branches leave the trunk ie. narrow upright branches have a narrowly angled crotch and more rounded forms have wider angles.*

**Form Types**: Round Oval Columnar
Conical Pyramidal Fastigiate Weeping
Vase-shaped Irregular Horizontal

| Silhouette and Examples | Characteristics | Possible Landscape Uses |
|---|---|---|
| **round**<br>  <br>Shinyleaf magnolia<br>Cornelian cherry dogwood<br>American yellow wood<br>Norway maple | • width and height are nearly equal at maturity<br>• usually dense foliage<br>• if the tree is large, a heavy shade is cast | • lawn trees<br>• mass well to create grove effect<br>• larger growing species may be used for street plantings<br>• smaller growing species can be pruned and used for patio trees |
| **columnar**<br>  <br>Columnar Norway maple<br>Columnar Chinese juniper<br>Fastigiata European birch | • somewhat rigid in appearance<br>• much taller than wide<br>• branching strongly vertical | • useful in formal settings<br>• accent plant<br>• group with less formal shrubs to soften its appearance<br>• frames views and structures |

| Silhouette and Examples | Characteristics | Possible Landscape Uses |
|---|---|---|
| **wide-oval**<br>  <br>Flowering crabapple<br>Silk tree<br>Cockspur hawthorn<br>Flowering dogwood | • spreads to be much wider than it is tall<br>• often a small tree<br>• horizontal branching pattern<br>• branches low to the ground | • focal point plant<br>• works well to frame and screen<br>• can be grouped with spreading shrubs beneath |
| **vase-shaped**<br>  <br>American elm | • high, wide-spreading branches<br>• majestic appearance<br>• usually gives excellent shade<br>• an uncommon tree shape | • excellent street trees<br>• allows human activities underneath<br>• frames structures<br>• use above large shrubs or small trees<br>*note*: the Americal elm is easily killed by Dutch elm disease; this limits its use |
| **pyramidal** | | |

| | | |
|---|---|---|
| **pyramidal**<br>  <br>Pines<br>Spruce<br>Filbert<br>Pin oak<br>Fir<br>Hemlock<br>Sweetgum<br>Sprenger magnolia | • pyramidal evergreen trees are geometric in early years<br>• pyramidal deciduous trees are less geometric<br>• pyramidal shape is less noticeable as the trees mature | • accent plant<br>• large, high-branching trees allow human activity beneath<br>• older trees may be valued for their irregular shapes<br>*note*: avoid planting large trees near small buildings |
| **weeping**<br>  <br>Weeping willow<br>Weeping hemlock<br>Weeping cherry<br>Weeping beech | • very graceful appearance<br>• branching to the ground<br>• easily attracts the eye<br>• grass or other plants cannot be grown beneath them | • focal point plant<br>• screens<br>• attractive lawn trees<br>*note*: avoid grouping with other plants |

| Shrub Silhouette and Examples | Characteristics | Recommended Landscape Uses |
|---|---|---|
| **globular**<br>  <br>Brown's yew<br>Globe arborvitae<br>Burford holly<br>Globosa red cedar | • as wide as it is tall<br>• geometric shape<br>• attracts attention<br>• does not mass very well | • accent plant<br>• use several with a single pyramidal shrub for strong eye attraction<br>• avoid overuse |
| **low and creeping**<br>  <br>Andorra juniper<br>Bar-Harbor juniper<br>Cranberry cotoneaster<br>Prostrate holly | • low growing<br>• much wider than it is tall<br>• masses well<br>• irregular shape<br>• loose, informal shape | • use to edge walks<br>• cascades over walls<br>• controls erosion on banks<br>• grown in front of taller shrubs |

| Shrub Silhouette and Examples | Characteristics | Recommended Landscape Uses |
|---|---|---|
| **pyramidal**<br>  <br>Upright yew<br>Pyramidal junipers<br>False cypress<br>Arborvitae | • taller than it is wide<br>• rigid and stiff<br>• attracts attention<br>• geometric shape<br>• usually evergreen | • accent plant<br>• focal point<br>• use to mark entries and at incurves<br>• group with less formal spreading shrubs |
| **upright and loose**<br>  <br>Lilac<br>Smoke bush<br>Rose of Sharon<br>Rhododendron | • taller than it is wide<br>• loose, informal shape<br>• usually requires pruning to prevent leggy growth | • closely spaced for privacy<br>• use to soften building corners and lines<br>• useful for screening and framing views |

| | | |
|---|---|---|
| **spreading**<br>  <br>Hetz junipers<br>Pfitzer junipers<br>Spreading yew<br>Mugo pine | • wider than it is tall<br>• medium to large shrub<br>• masses well<br>• usually dense foliage | • use at outcurve<br>• place at corners of buildings<br>• useful for screening, privacy, and traffic control |
| **arching**<br>  <br>Forsythia<br>Beautybush<br>Vanhoutte spirea<br>Large cotoneaster | • wider than it is tall<br>• prevents the growth of other plants beneath itself<br>• graceful silhouette<br>• usually requires yearly thinning | • provides screening and dense enclosure<br>• softens building corners and lines<br>• background for flowers, statuary, fountains |
| **columnar**<br>  <br>Hicks yew<br>Italian cypress<br>Arizona cypress | • width is about half the height<br>• geometric, flat topped, and dense | • accent plant<br>• foundation plantings<br>• closely spaced for hedges<br>• mass closely when a solid wall is desired |

# Planting Design - Form

The form of plants in silhouette must be of use functionally ie. for shade, wind protection, screening, enclosure etc.

Don't just pick a plant for its' unusual shape.

In nature, plant forms often reflect the natural terrain around them.

- In the mountains – lots of pyramidal evergreens that repeat the mountaintops.
- On rolling hills – we see a lot of round headed trees or windswept trees.
- On the plains it is common to see horizontal rather flattened trees- also partly sculpted by winds on the open plains

# Planting Design
# Size of Trees

Small Trees – 12’-25’

Medium Trees – 25’-40’

Large or Tall Trees  - 40’-120’

Size of plant is important because one must choose the right plant for the right place.

# Planting Design – Size/Scale of Trees

- Single story house require plants in scale ie. medium or smaller trees
- Double story houses can handle medium to tall trees
- Tall or large trees are best at the back of the house or property or large estates.
- Shade trees are best near the patio, near car parks in the drive and at the front of property for framing the house or on south or west sides of a home to give shade
- Size of important in proximity to sidewalks
- Large trees create a broader canopy of shade
- Large trees are much more expensive to remove
- Large trees generally have a more invasive root system than smaller ones.

# Planting Design -Texture

**Tree texture is found in:**

Stems – coarse, thorny, hairy, fine, glossy

Leaves – coarse vs. small or lacy, foliage density becomes important also.

Bark – flaking, ragged, sluffing off bark, colored barks

Buds – large & fuzzy, fine and glossy

Flowers – large Magnolia vs. small Spirea

Fruit – Sweet Gum balls, pods, beans, osage orange etc.

# Planting Design -Texture

- Patterns of light and shadow are effected by stems, leaf coarseness and bark
- Texture can be felt, not just seen ex. leaves vs. needles
- Texture becomes less obvious at a distance and most defined close up.
- Texture can be used to create distance or closeness
- Texture can be rugged or refined, Catalpa leaves vs. pinnately compound ferns
- Softscape texture can mimic hardscape colors and materials.

# Planting Design - Color

**Foliage colors:**

1. **Cool**
2. **Warm**

**Cool Colors**, blues, grays, variegated whites

- Plants with dark blue-green foliage reflect very little light and are therefore dark.
- Lighter blues to gray foliages give a sense of distance or contrast.
- Variegated foliage green/white, green/yellow tend to “lighten up” an area

# Planting Design - Color

**Cool Colors:**

- Cool colored foliages are more compatible with a natural landscape
- Cool colored foliages are great to create a sense of distance as do fine textured foliages also.
- Cool colored foliages can be used to draw attention away and afar.
- Flowers, fruit bark, and seeds also produce color in the landscape, especially nice in winter landscape

# Planting Design - Color Tips

**Warm Colors**, reds, purples, yellows, orange

- Plants with bright colored foliage reflect a lot of light and also produce lighter shade
- Bright colored foliages can be used to draw attention to the foreground as can large textured foliages.
- Bright colored foliages are best reserved as a focal point where you would like to focus attention or to use as dramatic. contrast.

# Planting Design - Color Tips

**Warm Colors:**

- Bright colored foliages in an *exotic* or *contrived* landscape are more appropriate, as are tropical looking foliages.
- Bright colored foliages in a naturalized landscape usually look out of place
- Bright colored foliages should be used sparingly and in non rhythmic or repetitious ways which become monotonous!
- Bright colored foliages alternated with cool colored foliages as above, can be in bad taste.

# Planting Design - Value

**Value** = weight or heaviness of a plant in the landscape

- Value is more evident and especially important during the winter months
- Value becomes less evident when deciduous trees are leafed out
- Value is predominantly evergreen shrubs and trees both needled or broad-leafed.
- The amount of evergreen mass or size also determines how effective “value” is in the landscape
- Value is used to highlight flowering trees or lighter colored foliages for contrast.

# Planting Design -Value

- Value can create the most decisive visual lines to enclose or define a space.
- Value can be used to strongly reinforce design elements
- Value can complement hardscapes
- Heavy value plants can overpower a landscape – Balance is important – a mix of deciduous and evergreen plants is best.
- Plants with a strong Value can cast a lot of shade/ may not grow grass under them .

# Planting Design
## Broad-leafed Evergreens for the North

- Rhododendrons-  Catawba, PJM's, Yaku's
- Blue Hollies- Ilex Blue Boy/Girl, Emerald Magic
- American Holly
- Southern Magnolia, (hardiness borderline)
- Oregon Grape Holly- Mahonia
- Euonymus-  Manhattan, Spreading, Bigleaf Wintercreeper- Purpleleaf  Wintercreeper
- Viburnums - Prague, Alleghany, Willowway
- Japanese Pieris
- Wm. Penn Barberry
- Daphne's
- Groundcovers/vines - Myrtle, Pachysandra, English ivy, Halls honeysuckle

# Needled Evergreens

- Spruces- Picea,  Colorado, Norway, White Spruce
- Firs – Pseudotsuga,  Douglas, Concolor etc.
- Pines- Pinus,  White, Scotch, Austrian, Table etc.
- Arborvitae – Thuja,  Mission, Western etc.
- False Cypress, Chamaecyparis, many species
- Junipers – Juniperus,  Eastern, Pfitzer, Chinese,
- Yews – Taxus,  Japanese, English, Pyramidal etc.
- Cedars – Cedrus,  Blue Atlas, Lebanon etc.
- Plum Yew – Cephalotaxus
- Hemlock – Tsuga

# Tree Combinations To Maximize Flowers of Trees

- Use evergreens as a backdrop, the darker the better. Pink & white flowering trees show up the most against dark evergreens

  Spring shrubs such as forsythia & Jap. Kerria are also showy used in this way.
- Place flowering trees like Magnolia, Crabs, Pears, Serviceberry, Dogwood etc. close up in the landscape. All are small to medium trees in scale to use in the foreground or middle ground where flowers may be seen from closer up.

# Tree Combinations to Maximize Flowers of Trees

- Place small flowering trees so that a few of the branches protrude into window space
- Plant more than one tree of a variety so that you create a “cloud ” effect. Three to five of the same kind spaced so that the branches interlace at maturity gives depth and mass.
- Repeat the same tree used in one spot in the landscape in one or two other spots for continuity of color throughout property.

# Tree Combinations to Maximize Flowers of Trees

- Choose only those trees with the most reliable and spectacular flowering for your focal points or as a specimen tree in a prominent position in the landscape.
- For a single focal point, one tree that is spectacular, is enough.

# Landscape Planting - Layers

## Layered Trees and Shrubs

- Observe examples of nature
  - layers within the woods or at woods edge
  - thickets or colonies as nature plants them (observe this succession along roadsides)
- Learn what the regional climax forest is
- Arrange shrubs and trees by graduated heights from front to back with shorter plants as the understory
- Remember that understory plants must tolerate shade and competition for moisture & nutrients.

# Planting Design
# **Layering Trees**

- Nature creates "*layers*" naturally in the woods and woods edge. Inside we find tallest trees (climax forest) trees such as Beech/Maple, then medium sized trees like American Hornbeam, Ironwood, Hophornbeam etc. in their shade, and at the woods perimeter, small trees such as Serviceberry, Pin cherry, Chokecherry, Amercian Cranberry Viburnum, Staghorn Sumac etc.

# Planting Design - **Layering Trees**

- We can replicate what nature does using "*layering*" techniques to good effect with hardwoods, then moderately sized trees that tolerate some shade underneath and small flowering or understory trees underneath that again, creating graduated heights.
- Layering creates a "finished" landscape effect in home landscapes.

# Planting Design – Creating Interesting **Shrub Borders**

- Plant in a transition of sizes from shorter or dwarf shrubs at front of border to midsized & taller shrubs at back – *"layered"* . Meander these shrubs in and out of each other so as not to be contrived in a straight line
- Mix both evergreens and deciduous groupings in the same plantings.
- Mix both flowering shrubs and those which may also have twig or special foliage color.

# Planting Design - Creating Interesting Shrub Borders

- Plant groupings of 3 to 5 or more of a kind so that an appropriate mass of one is appreciated before switching to another
- Plant for sequential bloom through spring, summer, fall and seasonal interest as well.
- Plant for more than just flowers. Plant also for fall color, fruit or berries, twig color, interesting bark or seed pod in the winter etc.
- Plant for wildlife to add bird activity in the shrub border.

# Planting Design -Winter Interest

- Trunk interest can be nice when bark is colored or becomes patchy or flakes off.

  Ex.  Birches, Paperbark Maple, Stewartia
- Flowers are a rarity but there are a few that bloom late fall to early spring.

  Ex. Autumn or Spring WitchHazel, Seven Sons Tree in Sept./Oct., Cornelian Cherry in March, Red Maple flowers in February

  Birches and Hazelnuts put out catkins in late winter, Shrubs include spice bush, pussy willow, winter honeysuckle, forsythia etc. as some of the earliest.

# Planting Design - Winter Interest

- Any tree or shrub that holds berries or fruit into winter should be considered for adding color at this drab time of the year.
- Evergreens add much value and color to the landscape in winter.  Broadleafed shrubs are even more interesting than needled evergreens, but are somewhat limited in the north
- Winter twig and branching structure that make interesting silhouettes, are of interest. Ex. Jap. Maple, Contorted Hazel

# Planting Design- Screens/Windbreaks

- Quick growth poplars may be used for “instant” effect and a quick screen, but are short lived.
- Wildlife Conservation packets attract wildlife, using native shrubs, trees, evergreens – but are small & take years to mature.
- An excellent screen/windbreak should include fast growing evergreens such as White Pine, Norway Spruce planted 12’-20’ apart in rows that are staggered.
- Behind the windbreak, plant evergreens with fast, thickly branched, medium to large shrubs, such as Tea or Cranberry Viburnum, Nannyberry, Privet or Autumn Olive

# Screens & Windbreaks

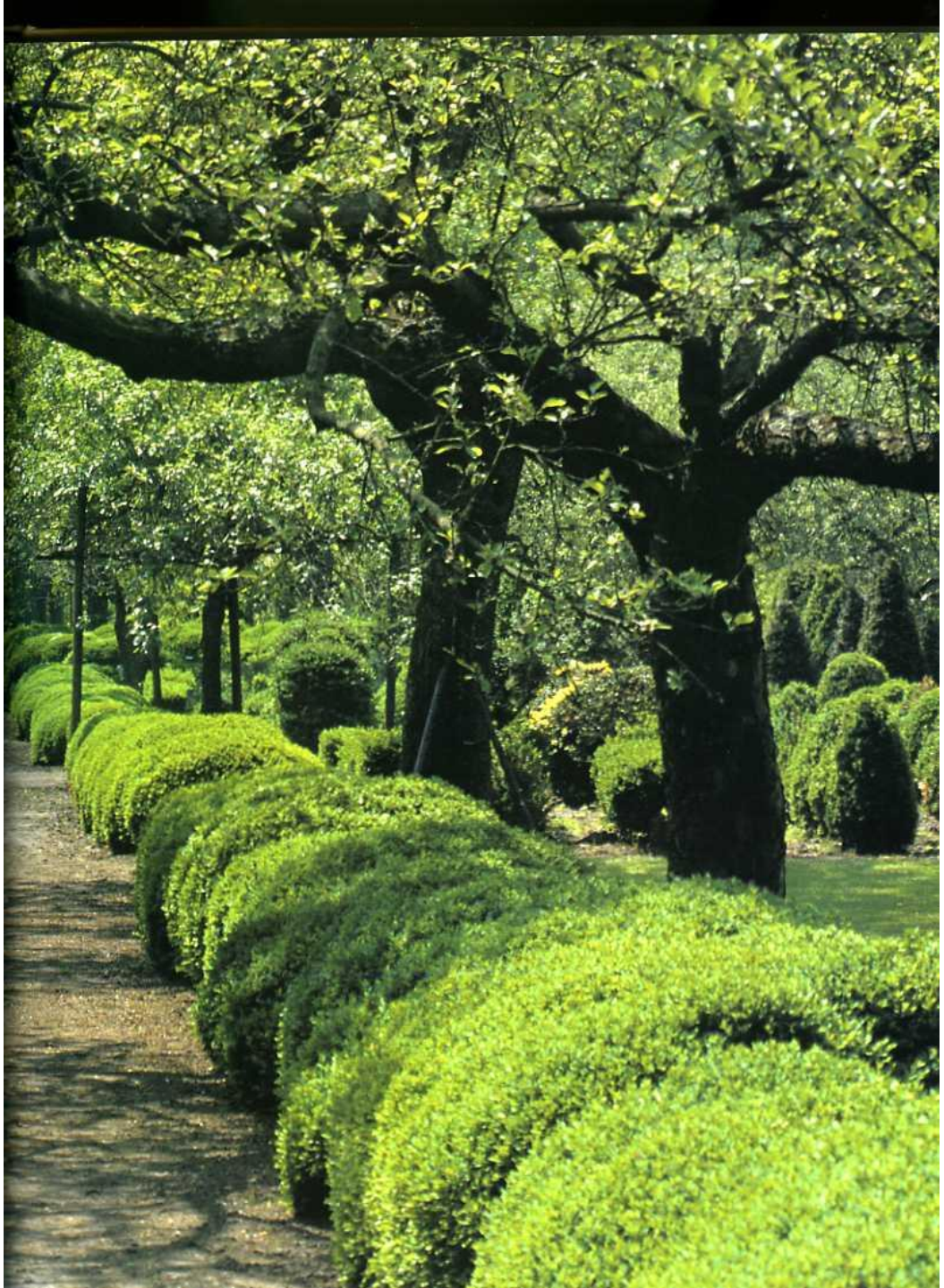
- Deciduous shrubs behind the evergeens

  catch snow for additional moisture, provide wildlife habitat and decrease wind force to prevent evergreens from lodging
- Plant on closer spacing than normal for a quicker screen.
- Choose fast growing varieties with dense branching
- Select evergreens that are adaptable to site, soils, exposure etc

# Landscape Planting Design

## Reinforcing Circulation Routes

- Use thick branched or thorny plants in low hedges to keep people out of flower & ground-cover beds or to prevent shortcuts at corners.
- Use taller hedges along walkways to move people quickly from one location to another – acts as a que
- Use plantings behind benches/patio areas and below viewing platforms to discourage roaming off trails and sitting areas.



# Landscape Planting Design

## Reinforcing Circulation Routes

- Choose specimen flowering shrubs/trees as a focal point near the destination point to create interest and direct the pedestrian toward it.
- Emphasize entryways with evergreens or larger plants to make it clear where the front door is, or punctuate a path at turns or periodic points to assure the pedestrian he is still on the right path.