

A. Principles of Design.

1. Balance- materials are distributed evenly on opposite sides of a central axis.
 - a. Three types of balance.
 - 1) Symmetric- one side is a reflective mirror image of the opposite side, most formal type of balance.
 - 2) Asymmetric- each side has as much interest as the other, but is not a mirror image.
 - 3) Proximal/distal- balances right and left as well as near and far.
 - b. Macro-range- the viewer sees the landscape from the most distant point.
 - c. Micro-range- the views from other locations not as distant.
2. Focalization- selects and positions visually strong items in the landscape composition to create focal points. It draws the eye of the viewer to one major feature in each use area such as a corner planting.
3. Simplicity- seeks to make viewers comfortable within the landscape. It excludes any unnecessary changes in shape, color, direction, etc.
4. Rhythm and line- repeating something at a standard interval or pattern creates rhythm and lines. It establishes the shape and form of the landscape replicating strong existing lines such as the lines of a house or pool. Functions of line plantings include foundation plantings, block a view, frame a view and provide privacy.
5. Proportion- the size relationships between all the features of the landscape including vertical, horizontal and spatial relationships. It will maintain proper proportional relationships in a landscape between:
 - a. Buildings and people.
 - b. Buildings and plants.
 - c. Plants and people.
 - d. Plants and plants.
 - e. Masses and soils.
6. Unity- all the separate parts contribute to the creation of the total design. It ties together the individual parts of each use area by:
 - a. Repeated prominent colors.
 - b. Repeated construction materials.
 - c. Continued interior design themes to outdoor rooms.
 - d. Repeated plant species.
 - e. Raised patios, decks and porches to door level.

B. Types of Plans Used in Landscaping.

1. Sequential- each is increasingly more specific and detailed.
 - a. Functional diagrams- begins the arrangement of the client's program on the site. Bubble diagrams (thumbnail sketch) are loosely drawn freeform shapes to represent areas or spaces. They help the designer make decisions concerning layout, sizes and the use of each area.
 - b. Outdoor room concept moves the indoor out for a continuous flow.
 - 1) Public area- usually the front yard portion of the landscape.
 - 2) Private area- a secluded area, patio or screened porch.
 - 3) Utility area- recycle, garbage, storage.
 - 4) Family/play area- pools, open areas, play structures.
 - c. Preliminary designs- breaks the bubble diagram down to show first draft vision of how each landscape area will be shaped. The landscape is given its form, type of materials to be used and application of landscape design principles. They are simple without real details, but the horizontal and vertical relationships between objects and areas are now included. A number of preliminary designs may be shown to a client before the final plans are made.
 - d. Final plans- suggestions and reactions of the client to make a master drawing that is graphically detailed and completely specific in its intent for the landscape. They include precisely identified plants and other materials, paving patterns and other specific detailed information such as construction drawings for the landscape contractor and subcontractors. Graphics are designed to impress.
2. Computer assisted or drawing board.
 - a. Computer aided design or design programs.
 - b. Hand drawn. Many professionals choose to hand draw their designs.
3. Graphics.
 - a. Free-hand lettering.
 - b. Mechanical.
 - c. Computer.

C. Drawing Instruments.

1. Pencil.
 - a. Mechanical pencils.
 - 1) Lead sizes- 0.2, 0.3, 0.5, 0.7, 0.9 mm in thickness.
 - 2) Uses a lead holder.
 - 3) Does not require sharpening.
 - b. Drawing pencils.
 - 1) Varying degree of hardness in mechanical and drawing pencils- 2B, B, HB, F, H, 2H- 9H.
 - 2) H is a harder lead and produces lighter lines and is less likely to smear.
 - 3) B is a softer lead and produces darker lines and will smear.
 - 4) A good choice for landscape designer is HB- 2H.
2. Eraser- a vinyl eraser will erase pencil marks without damaging the paper. Magic Rub is a good eraser to use.
3. Compass- adjustable instrument used to draw circles or arcs.
4. T Square- used for drawing vertical or horizontal straight lines that are parallel to the edge of the drawing board.
5. Scale.
 - a. Architect.
 - 1) Contains scales of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$, $\frac{3}{8}$, $\frac{3}{4}$, $\frac{3}{16}$.
 - 2) Most commonly used by landscape designer is $\frac{1}{8}$.
 - b. Engineer.
 - 1) Contains scales of 1/10 (one inch = 10 feet), 1/20, 1/30, 1/40, 1/50, 1/60.
 - 2) Most commonly used by landscape designers is 1/10.
6. Templates- used to draw circles and landscape features such as fences, hedges, etc.
7. Protractor- used to measure the angle of any two joining lines from 0- 180 degrees.
8. Triangles.
 - a. Used to draw angled lines.
 - b. Most common angles are 45 and 90 degree.
 - c. Other angles are 30, 45, 60 or 90 degree.
9. Drawing board- gives a smooth surface for drafting paper.
10. Drafting paper.
 - a. Available as opaque or transparent in a wide variety of sizes.
 - b. Vellum paper (100% cotton) is commonly used for hand drawings.
 - c. Gridded paper is also popular to use in landscape design. Grid size available are $\frac{1}{4}'' = 1'$, $\frac{1}{8}'' = 1'$, $\frac{1}{10}'' = 1'$.

D. Landscape Process.

1. Process is a sequence of steps to reach a goal.
2. Project development process.
 - a. Needs or objectives.
 - b. Design process.
 - c. Accepting the design.
 - d. Contracting.

- e. Subcontracting.
 - f. Actual landscaping acceptance.
 - g. Billing and payment.
3. Project maintenance process.
 - a. Need or desire.
 - b. Selecting a landscape maintenance company which assesses the needs and presents a proposal.
 - c. If the proposal is accepted, the company schedules and does the work.
 - d. After work is complete, bill the customer.
 4. Design process includes site analysis and program analysis.
- E. Landscape Occupations.
1. Landscaping- profession that includes designing, installing and maintaining the outdoor human environment.
 2. The three branches of the landscaping industry are:
 - a. Landscape architects- licensed professionals who conceptualize and plan the outdoor environment or landscape for both residential and commercial clients (customers). Landscape designers usually do actual drawings for residential and commercial landscapes.
 - b. Landscape contractors- must pass a licensing exam. They are professionals who carry out the installation or actual construction of the landscape plan. Landscape contractors hire subcontractors to do special work such as pools, electrical work, stonework, outdoor features such as kitchens. Landscapers are not licensed but can do the same work but cannot use the title "Landscape Contractor".
 - c. Landscape maintenance- the care of newly installed and existing landscapes.
 3. Design-build firms- landscape businesses that handle everything from the initial contact with the client, the design, construction process, long term care and maintenance. They may hire subcontractors for specific jobs.
 4. Other occupations in the landscape industry:
 - a. Landscape nursery worker- a professional who sells and installs landscape plants and related materials.
 - b. Landscape sales- works directly with clients to develop creative design solutions.
 - c. Arborist- specialist in the care, treatment, trimming and/or removal of trees.
 - d. Irrigation specialist- designs, installs and maintains irrigation systems.
 - e. Seasonal color specialist- works directly with clients, possesses a thorough knowledge of seasonal color in both design and maintenance along with a strong understanding of plant materials.
 - f. IPM specialist- inspects and diagnoses insect and disease issues, develops treatment plans, applies treatments effectively and safely, performs necessary record keeping duties, maintains supplies and equipment.

F. Planting and Maintenance.

1. Planting.

a. Balled and burlapped (B &B) plants.

- 1) Plant in a flat-bottomed, straight-sided hole twice the width of the root ball.
- 2) Backfill soil should fill the hole enough to raise the plant slightly above the soil line.
- 3) Loosen the burlap around the top of the plant and tuck it down a few inches below the soil level.
- 4) After backfilling the hole, the soil should be mounded in a circle around newly planted trees and shrubs to catch and hold water.
- 5) Handle B&B plants by the root ball.

b. Bareroot plants.

- 1) Mound or dome is left in the bottom of the hole.
- 2) Roots should be spread over the mound so roots will grow downward in the soil.
- 3) Backfill with soil.
- 4) After backfilling the hole, the soil should be mounded in a circle around newly planted trees and shrubs to catch and hold water.

c. Container plants may need to have the roots cut or unwound before planting. This prevents the roots from continuing to grow in a circle pattern.

d. Newly planted trees should be staked to keep trees growing straight.

e. Careful observation of newly planted shrubs, trees, annuals, and perennials, on a regular basis, will determine the time and amount of maintenance needed.

2. Watering.

a. Should be done at planting and frequently for a few days to prevent roots from drying out and the plant wilting. Water to a depth of 12"-16" initially. This helps the plant to develop a deep root system.

b. Then less often as needed.

c. Different plants have different water requirements and watering should be adjusted to meet the needs of the individual plants.

3. Fertilizing.

a. Trees- drill holes or use a soil tube 12" deep at 24" intervals around the tree at the canopy drip line (tips of outer branches).

b. Shrubs- hand apply small amounts of low analysis fertilizer but not too late in the growing season.

c. Fertilizer should be mixed in back fill soil at planting for trees and shrubs and in soil beds during prep for annuals and perennials.

d. Lawns- need regular fertilizing. A fertilizing schedule should be established for lawn care.

4. Mulching.

a. Suppresses weeds, retain soil moisture and equalize soil temperature.

b. May need to be refreshed or replaced yearly.

- c. Mulch depths vary depending on type of material used and the moisture holding capacity of the soil. 2"-4" (after settling) is commonly recommended, add an inch more for sandy soils.
 - d. Types of mulch.
 - 1) Shredded or ground bark- hardwood, cypress, pine.
 - 2) Pine needles.
 - 3) Stone.
 - 4) Shredded rubber.
5. Pest.
- a. Pest control is necessary to control damage from insects, diseases, weeds and rodents.
 - b. Prevent pest problems by planting pest resistant varieties, keeping the landscape free of debris and watering efficiently.
 - c. Monitor landscapes for pest problem.
 - d. Set up a pest maintenance schedule if necessary.
6. Mowing and edging.
- a. Mow lawns at correct heights based on the type of grass.
 - b. Edging makes a sharp line of separation between plantings and the lawn.
7. Winterizing.
- a. Treat wintertime weeds such as chickweed and henbit.
 - b. Remove leaves and other debris from lawns. It can smother grass, promote diseases and invite pests.
 - c. Drain your irrigation systems.
 - d. Mulch beds if mulch is thin.
8. Principles of Pruning.
- a. Shrubs that produce flowers on wood grown the previous season should be pruned immediately after flowers fall off.
 - 1) Forsythia.
 - 2) Azaleas.
 - 3) Spirea.
 - b. Shrubs that bloom on current year's growth should be pruned in fall or early spring.
 - 1) Rose.
 - 2) Butterfly bush.
 - 3) Crape Myrtle
9. Types or methods of pruning.
- a. Thinning- removes certain branches to open up the plant allowing light through to keep the natural shape.
 - b. Heading back- removes the end section of branches at the same height so that new shoots make a plant thicker.
 - c. Renewal- removes old branches that are large and unproductive by cutting them back to ground level.
 - d. Root- usually done one growing season prior to transplanting. The general rule is that one inch of stem diameter equals 10" of circle diameter for pruning roots around the plant.

10. Pruning tools.

- a. Pruning saw.
 - 1) Will cut live or dead limbs.
 - 2) Has coarse teeth.
 - 3) Blade may or may not fold into the handle.
- b. Pole pruner.
 - 1) Has a saw and pruning tool on a pole to remove branches that are up to 12 feet overhead.
 - 2) Non-powered or gas powered.
- c. Grass shears.
 - 1) Has two blades designed to cut grass around edges of walks or flower beds.
 - 2) Non-powered or battery powered.
- d. Lopping shears.
 - 1) Long handled, bypass cut (scissor type blade that overlap each other).
 - 2) Cuts limbs from 1" to 1½" in diameter
- e. Hand shears or pruning shears.
 - 1) Bypass shears- scissor type blade that overlap each other.
 - 2) Anvil shears- a single blade that strikes against a flat metal plate.
 - 3) Removes branches ¼"-½".
- f. Hedge shears.
 - 1) Has long blades.
 - 2) Trim hedges or shape shrubs.
 - 3) Non-powered, gas or electric powered.
- g. Chain saw.
 - 1) Cuts limbs from 3" up to the blade length.
 - 2) Gas, electric or battery powered.