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Native Plant Gardening Certificate Series

Class Title: Native Plant Gardening Landscape Design

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A Useful Process for the Design of Outdoor Spaces

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Congratulations! You are beginning a design process to create your ideal outdoor space. The design and use of land is a process that will reward you to the degree of care that you put into its planning. Here is a series of steps to create your design.

1. List Your Wants and Needs

It is very important to separate needs from wants. That will help you to prioritize your design goals and not miss an important need. When you are doing this consider more than one generation, the needs of other species, and how to protect your investment. Needs are things you must have or the design simply won't work for you. Wants are things you would like to have, but if necessary you could do without.

Needs:

- What are your most important needs for the site?
- Are there now or could there ever be special needs, like wheel chair compliance?
- What do you need for exercise in your yard?
- What are your needs for privacy?
- What safety or environmental problems need to be solved on the site?
- How will you harvest water on the site?
- How will you create or save energy on the site?
- What are your animal's needs?
- What are your children's needs?
- How many vehicles do you need to shelter?
- Do you need any kind of special storage?
- What level of security is required in your area?
- Do you have a business at home? Would you like to work outside?
- What style do you need to be in harmony with your house? With your neighborhood?
- What area will you need to concentrate on most?

Wants:

- What have you been dreaming of for your landscape?
- What is your overall vision for the site?
- What level of self-reliance do you want?

- Do you want food plants?
- Are you interested in any specific animal or plant preservation?
- What are the things that you do in your house that you would also like to do outside?
 - Rest?
 - Cook?
 - Eat?
 - Visit?
 - Hobbies?
 - Play?
- What do you most like about this place?
- What do you most dislike about this place?
- How do you want your site to feel?
- What do your children like to do?
 - Trampoline?
 - Dig?
 - Tree house?
 - Zip line?
 - Garden?
 - Play set?
 - Hide?
 - Swing?
 - Party?
- What do you most like to do?
- What colors do you like best?

Do you have any design materials collected to show what you want? Photos? Sketches? Wish books?

2. Research Your Site For Useful Information

Make sure you can do what you want to on your site. Limits are set by your governing entities and the disaster proofing needed to be safe.

Legal

- Are there any environmental regulations or restrictions on the site?
- What are the zoning regulations if any?
- Are there height limitations?
- What are the building regulations or ordinances? Codes? Bylaws? Land use restrictions or covenants?
- What are the health department regulations for the site?
- Will the lender impose restrictions on the design?
- Are there constraints on water use?
- What is the regional drainage plan?
- Drainage rights?
- What are the plans for the area? City? County? State?
- What are the future road plans?
- How will the insurance cost be affected by the design?
- What agency permits will be needed for construction and occupancy?
- What is the ground water information for the region?

Possible Catastrophes

- What is the site in danger from?
- Floods

- Flood levels – how high has water gotten?
- Is there flood damage evidence?
- What is the frequency and duration of floods?
- Fire
 - Are there signs of fire history?
 - Are there lightning trees?
 - What are the fire escape routes? Fire trails?
 - Will you need a fire brush removal plan?
- Is there a regional history of tornados and big winds?
- Is there a regional history of earthquake?
- Are there pollution sources that are dangerous?
- Is the site in danger of land slides?
- What does this site tell you about its use history?
- What are the emergency vehicle accesses?

You can include safety strategies in your design:

- Planning for fire fighting and fire proofing.
- Climate mitigation and safe building requirements.
- Knowing your flood plains and flood ways.
- building shelters and places for stored safety equipment.

Above all make sure everyone on the site knows how to deal with a disaster and practice the disaster drills.

3. Make a Base Map

Make a base map in as large a scale as you can that will fit on a paper size of 17" by 22" or 22" x 36". These sizes are large enough to carry and use at the site and are inexpensive to copy. A practical scale is $\frac{1}{4}" = 1"$. You will always be able to enlarge sections of the design that are most detailed and print them on a separate piece of paper. This map will be the drawing of your property upon which you create all your observations, research notes, and designs using tracing paper or working on a copy

The map will include the following: Check them off as you put them on the map.

- Name
- Date
- Scale
- NSEW Arrows
- Boundary Lines with details
- Lines showing setbacks
- Lines showing right of way on the site
- Easements
- Permanent Structures (Put them on your base map only if you are going to keep them): buildings, roads, improved paths, ponds, parking, sporting fixtures, barbecues, fire circles, swimming pools, fountains, fences etc.
- Write the names and addresses of neighbors on the edges of your base map where they have contiguous property lines.
- If you have access to a GPS note the highest and lowest altitude.

When your base map is complete, make several copies or use tracing paper to make your study maps and designs. I usually make from three to ten copies.

4. Make Analysis Maps

On copies of your base map gather observation and research information to assist you with placement and pattern of your design elements. On a large property, or for new construction, these maps can be fun and really help to keep your research information in the design. For established small properties, you can pick and choose what information you want noted or drawn on a map.

A. Get a to-scale aerial photo

B. Site visit observation map

Walk the site with a compass, level, note book, colored pens, a camera, a tape measure, and perhaps field id books for regional species). Note wild animal trails, leavings, and homes. If you know their food sources note them. Make lots of little sketches and notes about what you see, hear, feel, smell, and trip over. Grasp the essential character of the place.

Visit at different times, and seasons if possible. Be *observational*, *experiential*, and *free thinking*.

Where are the good and bad views? Where do you feel best on the property? Where are the most beautiful places? Is there erosion? Sheet? Rills? Gullies?

You can take color samples by collection leaves, flowers, rocks, and twigs.

What is the water quality if you have streams or surface storage? What is the soil like? Color? Smell? Friability? Moisture? How much organic matter is there on the site?

Draw your notes where they apply on your map.

It is helpful to drive or walk all around your property and see if there is any environmental information you may need for your design from up hill, up stream or up wind, or over the fence.

C. Destruction and Removal map

What structures do you wish to remove (This includes structures, trees, roads, anything).

D. Climate Information map

You can get this information on your land, at airports, and solar installation internet sights)

Draw the following:

- Direction of summer and winter winds
- Position of sun at summer and winter solstices and equinoxes
- Cool summer places
- Warm winter places
- Is the site in a frost pocket?

Note:

- What is the strength of the greatest wind possible?
- Rainfall and moisture
 - Average rainfall in your region?
 - What is the frequency of big thunderstorms?
 - Hail?
 - Snow?
 - What is the greatest yearly rainfall on record?

- What is the lowest yearly rainfall on record?
- In what months do the largest rainfall usually happen?
- What is the average humidity each month? Maximum? Minimum?
- What is the drought history of the region?
- Temperature
 - What are the average, and maximum and minimum temperatures each month?
 - Nighttime?
 - Daytime?
 - What is the hottest day on record?
 - What is the coldest day on record?
 - What is the average number of freeze days. How long is each season? (How many months?)

E. Tree survey map and vegetation map

(This is easy with Google Maps or USGS aerial photos)

- Draw and place the trees, all the big ones at least. Classify them by species, size; diameter of trunk, condition, and health.
- Draw the areas of the plants. Classify by families, services, and yields (like fall color). Note if there is invasive vegetation.

F. Soil map

Draw the following:

- Location of soil samples.
- Location of percolation test.
- Location of soil types (you can get this information from the county soil maps on line).
- Location of the deep or shallow soils (if this applies).

G. Utility Map

Show all utilities.

- Power lines, poles, and meters.
- Sewer pipes, septic fields, and clean outs.
- Gas pipes, meters, and propane tanks.
- Water pipes, wells, cisterns, pumps, irrigation and municipal water meters and hook ups.
- Telephone and all cables.
- Swimming pool utilities.
- Subsurface drains, storm water pipes.
- Underground tanks, and basements.

H. Topography map

Draw the topographic Lines (you can get a crude but useful version of these from Google Maps or a free USGS site on the internet). Note ridges, valleys, and saddles.

You can add:

- Surface Water Flows (with green arrows) infiltration places, storages, springs, seeps, sinkholes, wetlands, creeks, rivers.
- The usual air flows on your site; remember, cold air flows downward (use blue arrows) and hot air flows upward (use red arrows)
- Geology if wanted.

Note – here are some map and information resources:

- Your deed and certificates of title are in your papers or at the county records.
- The City of Austin has most of this information on line.
- Google Maps for streets, aerial photos and topographical maps. Map Quest for streets.
- USGS topographic and aerial maps.
- Road maps.
- Soil map information can be had from the old Federal Soil Conservation records. Most counties keep these records, as do highway and road departments.
- Geological maps from the State Geology department in Austin.
- Historical maps from the State History department in Austin.
- You can check with long time residents for site information.

5. Make a Program

Put the conclusions, from the foundation stage of the design, into a paper with lists, which tell what your design will include. This is called your design program. It is your selection of elements you wish to include in your drawing of the design, along with your design goals. It can be a simple checklist of what you want to draw. Have your maps and photos, and notes on hand to reference.

6. Create Bubble Diagrams

On at least three copies of your base map draw round shapes with words in them showing rough placement of the design elements on your map. Connect these shapes with lines to show the flows between these elements. The shapes need to be roughly to scale. The shapes will show placement of your “outdoor rooms” or use spaces. The flow lines will show the connections of these rooms and your paths. Do these fast and loose. Use the concepts of zones and sectors to help you with placement. Colored felt tip markers are good for this. You can do as many of these as you want. Each new design will bring new ideas. Sometimes I make 2D models to scale of the furnishings I want to place in these rooms and cut them out of colored paper. I can move them around before gluing them where I want them. This helps me stick with scale and experiment with placement. Have fun!

Combine your best ideas from your bubble diagrams into one master bubble diagram that will be refined into your design. This diagram will have improved flows and stacked uses.

7. Create your Final Design

Take time to lay out your final drawing so it will look good on your page. It will include your design drawn over a copy of your base map and you can add details and lists (schedules) You can do the type on your computer and copy it through tracing paper or paste it on your drawing. You can paste photos of plants, furniture, or art on the page to dress it up and help show what you want to communicate. Sometimes it is helpful to create separate hard surface and plant drawings. I use overlays to do utility details. You can list plants, including sizes, and surface materials, including amounts, on separate sheets of paper. You can make a black-and-white copy and color it with pencils, felt-tip pens, watercolor, or oil pastels (or any combination of these). Whatever. Have a good time with it.

Please see the companion paper, [Design Methodologies for Safety, Wellness and Beauty](#), for some advanced design ideas.

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