

*Water in the garden offers one of the greatest opportunities for incredible dynamics and incredible failure. No matter what you hear or see today, it can all be improved upon...I don't always even agree with myself....☺...keep learning.*

## **I. Water in Design**

### **a. Focal point**...water will tend to dominate a garden

- i. Size matters
  1. If you are going to have a body of water make it as big as you can, as interesting as you can
  2. Large bodies of water are open space in the garden which draws the eye
- ii. Moving water always attracts the eye
- iii. Still water can recede visually when there is not a lot of open water

### **b. Opportunities**

- i. Art, sculpture, whimsy
- ii. Aquatic plant garden
  1. Submergents, emergents, marginals
    - a. Not just herbaceous plants
    - b. Lots of fun ones
- iii. Fish interaction...trust me, they become pets!

### **c. Styles**

- i. Naturalistic...creating habitat
- ii. Organic but sterile
  1. Fountains, reflecting pools with curvilinear lines
  2. Pondless water features
- iii. Sculptural
- iv. Informal geometric
- v. Classical, formal, symmetrical

### **d. Functions**

- i. Visual interest
- ii. Sound effects
  1. Masking...high frequency water sounds mask traffic noise, low frequency masks human voices, TV, etc.
  2. Mentally soothing
- iii. Health...physical and mental...ionization of the air, calming of the mind
- iv. Habitat, hobby, and education...animals and insects of all sorts gravitate to natural water areas...very intriguing.
- v. Rainwater harvesting....be careful with this. Do not put them in a swale.

## II. Construction Methods and Materials

### a. Earthen Ponds

- i. Typically needs some significant scale...
- ii. Fishing and swimming
- iii. Opportunity for serious habitat creation with plants

### b. Swimming pools

- i. Traditional with filters, chemical or salt treatment, sterile
  1. Details can be naturalistic or geometric. When adding a "rock waterfall" please put it in scale...not a bump on the side of the pool. Sculptural and geometric falling water elements are the easiest to make look right...urns runnels, and spillways
- ii. Natural swimming ponds
  1. Can be built in many styles
  2. Uses plants to control nutrient levels...no chemicals...fits well into a designed garden...
  3. Principles used in these ponds apply to all living water systems
  4. [www.bionovalnaturalpools.com](http://www.bionovalnaturalpools.com)
  5. Natural Swimming Pools, Michael Littlewood

### c. **Concrete and masonry shell** and steel reinforcement

- i. Epoxy coating sealers
- ii. Rubber liners can be used in conjunction with masonry
- iii. Best option for rectilinear forms
- iv. Should be drained in deep freezing winters

### d. **Metal tanks**...stainless steel, copper, galvanized steel (if not seen)

- i. Good for rectilinear/contemporary designs

### e. **Rubber liner/underlayment/ rock, soil**...the landscaper's gold standard

- i. Relatively inexpensive and can be done well with attention to detail
  1. Systems available with upflow filters, skimmers, bottom drains, pumps, UV filters, etc, etc. etc.....
  2. Lots of possibilities and I'm not selling anything.
  3. Do we really need upflow filters and skimmers? They work don't they? I just don't like seeing them.

## Building considerations

### Excavation

1. Determine desired final effects...amount and shape of open water, aquatic plantings, terrestrial plantings
2. Limits of site
3. This information will determine your style of edge work.
  - a. Bed depth of rock...stood up and leaned? Maybe 18"?
  - b. How much soil retention above water is there?
4. Put in trench for venting gas and water from under the liner with perforated pipe

### Liner height and positioning

1. Determine water levels ahead of time and liner height at edges for containment. **Liner Edge height=Water level + 6" minimum.**
2. Floor of pond or stream + thickness of stone on the bottom + water depth + 6"
3. Always consider surface drainage in the area
  - a. Though natural water is found at the lowest point in an area, recirculating systems should not be in drainage swales.
  - b. Know where surface water will flow and plan for overflow of your pond

### Failsafe water containment (well, you know...we do our best)

1. Stake and board edge support... set with level
  - a. This allows no low spots along the perimeter, quick liner install, does not settle with the newly compacted soil...if wood rots away in 5 years, the soil will no longer be settling, and the liner will remain intact.
2. Extend liner well beyond edge of pond
  - a. Long sloped grade makes natural transition from water to dry soil
  - b. Oversized rectangular hole with liner allows you to build any shape you want inside it...no fussing with liners at the edge...quick dig, few folds
3. Liner within a liner
  - a. Big containment liner, smaller directional liner within the big one instead of using foam everywhere. We do this for waterfalls.

### Protecting stuff

1. No sharp objects under or on liners
2. More padding is better...double underlayment or other material
3. We usually put underlayment on top if there is any question
4. Heavy padding and possibly concrete pads under big rocks
5. When using concrete, always separate liner from concrete with underlayment

### Other stuff

1. Use mortar instead of foam to keep water flowing on top of rocks in a waterfall or stream
2. When stabilizing upright rocks, tie them to other rocks with rebar and concrete if there is the slightest chance of them falling
3. ?

## Natural Bling (visualize every natural water's edge you ever saw)

1. **Underwater planting beds**...retaining soil/underlayment
  - a. Along edges, in middle of pond...wherever.
  - b. Soil or gravel for growing medium...gravel makes plants work harder to extract nutrients from the water...good for water quality
2. **Wood** for retaining planting beds...emerging from water, lying on the edge, hanging over and disappearing into the water
3. **Rock**
  - a. emerging from the water...build a masonry pier to hold it...know where the water level will be
  - b. fallen rock..."tumble" some rocks along the edges...make the shapes of the rock part of the visual dynamic
4. **Rhythmic edges**
  - a. Not all rock...soil and plant intrusions, gravel beaches, inlets, islands, archeological finds, art opportunities
5. **Quiet reflections**
  - a. Smooth water with a reflected something....tree branching, sculpture, etc.
6. **Current events**
  - a. Secondary waterline that creates water current movement from underwater
7. **Less is more**...Weeping walls, variations on waterfalls, dripping rocks in quiet spaces
8. **A true aquatic garden**...soil over the bottom to grow plants....everywhere!

## Whimsical Bling

1. **Adjustable brass nozzles**, valves, hidden or obvious...
2. **Laminar flow**...tubes of water....pricey
3. **Sculpture**...created, purchased or adapted....urns, etc. There are some interesting things available, but the details depend on you.
4. **Flexible copper creations**...you can dream
5. **Rain curtains**
6. **Runnels**--Concrete, metal
7. The ubiquitous **bubbling rock**
8. **Holes in the water** Andy Sturgeon
9. **Vanishing edges and water mirrors**

## Resources for learning more

- a. Genesis3.com
- b. International Pool Spa Patio expo
- c. Watershapes magazine
- d. Anthony Archer Wills.... Great books!
- e. The great outdoors and your own imagination
- f. Michael Littlewood [Landscape detailing 4 Water](#)

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