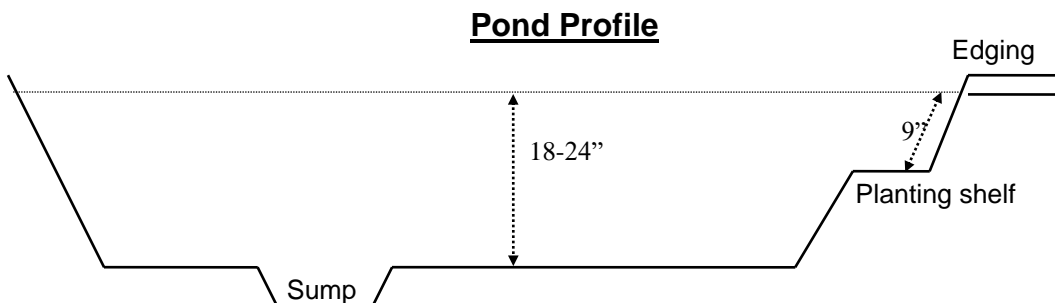


## Water Gardening Basics

### I. Planning

- A. Define the function of the water feature in the landscape. For example: reflecting pond, attracting birds, masking noise, habitat for plants and/or fish.**
- B. Choose the site for your pond. These items need to be considered:**
1. sun - most lilies need a minimum of 5 hours
  2. accessibility - for construction and maintenance
  3. near source of electricity and water
  4. visibility
  5. avoid water logged areas, water runoff, over hanging trees (such as willow, poplar, laurel, holly, horse chestnut and laburnum)
- C. Determine the size**
1. minimum size should be 40 sq. ft. of surface area
  2. 18-24" deep (24" is better)
  3. as large as you can afford and have space for
- D. Determine the shape**
1. outline can be formal or informal
  2. sides should be steeply sloped
  3. possible plant shelves 9" below the water surface
  4. build in a sump area for cleaning ease (1 ft. in diameter)
  5. make a provision for overflow, ie: dry well, drain pipe, bog garden, dry stream bed.

**Note: If a waterfall will be included in the design, be sure it will be sited well away from areas in your pool where you want to grow water lilies.**



### II. Construction Options

- A. Clay or Bentonite**
- B. Concrete - also Gunitite - reinforce well, minimum of 4" thick**
- C. Preformed Ponds**
- D. Flexible Liners - EPDM, PVC, Synthetic Rubber**

### III. Installing a Flexible Liner

- A. Outline the pond**
- B. Determine liner size**
1. Length of pool and twice the maximum depth and 1' of overlap = liner length
  2. Width of pool and twice the maximum depth and 1' overlap = liner width. If the pond size is irregular, plan for extra liner. Adjust your pool size to fit available liner sizes from your local supplier.
- Example: 6' X 8' pond, 2' deep**  
**Length - 8' + 2(2) + 1' = 13'**  
**Width - 6' + 2(2) + 1' = 11'**
3. Excavate pool to exact shape desired. Add 2" to depth to allow for a layer of sand to protect the liner.
    - a) slope walls about 20°
    - b) dig marginal shelves 9-12" wide, 9" below water level all around the edges, or you can place them in certain areas of the pool.
    - c) allow for installation of edging materials.

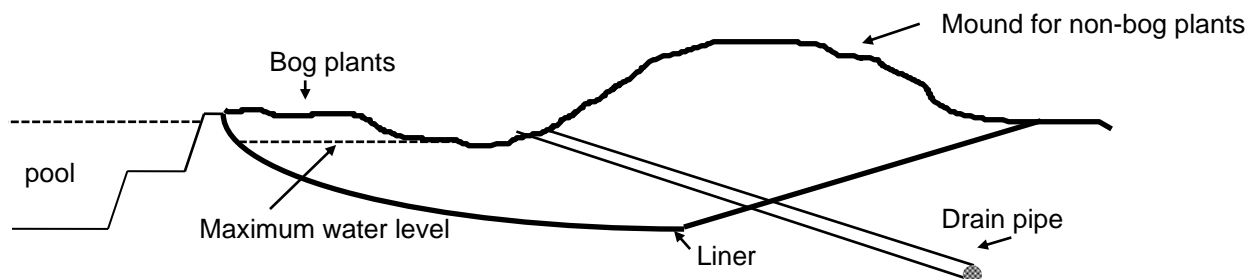
4. Level the edges
5. Line the bottom and sides with 2" damp sand or other padding.
6. Install liner
  - a) *Unfold and center liner over the excavation.*
  - b) *Push liner outward from center to edges, pleating excess as you go.*
  - c) *Smooth out wrinkles and pleat as you add 2" of water.*
  - d) *Continue to fill, adjusting pleats as necessary.*
7. Add edging material such as rock, pavers, and retaining wall brick.

#### IV. Bog Plants

*Most bog plants prefer full sunlight. The topsoil you will need should be a good quality, heavy clay-loam. Avoid light-weight soil amendments as they will float when placed in the pond. Water depth varies according to the plant species. Bog plants with floating leaves will not tolerate turbulence around their leaves, they need quieter water. Vertical plants will do well along a stream as well as in still water and are good bank stabilizers.*

**Note:** A lot of sites have a natural boggy area that your pond could overflow into.

#### Basic Bog Garden Profile



#### V. Planting

*There are several reasons for planting around your water pond. Besides the obvious of making the pond blend in with the rest of your landscape, it also offers food and protection for your fish as well as beautifying the pond area. A large part of planting is to control algae growth. Surface plants should constitute at least 1/3 of your pool surface area. The natural shading of the water cuts down on the amount of oxygen and light which is needed for algae to grow.*

*Most of the ponds are constructed with flexible liners, out of concrete or are the pre-formed types. This creates a problem if your plants are not in a container. As a general rule most plants should be grown in containers in the pond.*

**How to plant:**

- A. **Water Lilies:** *They prefer wide shallow containers, heavy garden soil and fertilizer. Plant rootstock at a 45° angle with crown of plants out of the soil, saturate the soil, then cover soil with 1/2" of pea gravel. Place in 16-18" water depth.*
- B. **Marginals:** *Plant each variety in a separate container with heavy garden soil, fertilize, saturate the soil, then cover the soil with 2" of pea gravel and place in a pool of 2-6" of water.*
- C. **Submerged Plants:** *Plant in pots of soil or gravel, do not fertilize, place on bottom of pool.*

#### VI. Maintenance

- A. *Prune off dead leaves and flowers*
- B. *Fertilize regularly*
- C. *Net leaves in fall*
- D. *Move plants to deepest water for winter*
- E. *Divide and repot as needed*
- F. *Empty pool only when a substantial layer of debris has accumulated*