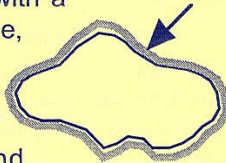
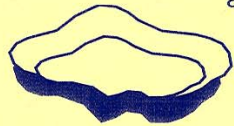


less you are building a formal pond, this area should provide a natural look of transition into the surrounding area.

If you are building your pond to attract wildlife, special consideration should be taken when choosing planting materials. Native plants with seeds and berries should be used whenever possible. To attract wildlife you will need cover for them to hide from predators, food to thrive, and water.

Preformed Pond

STEP 1: After choosing your pond from the many styles and sizes available, place it in the desired location sitting upright. Stand back and assess by rotating it to see if it is visually pleasing and if it fits in the available space. After you have found the perfect placement, mark the outline on the ground using a hose or rope, or score the ground with a stick. Begin digging the hole, periodically checking the depth. The depth can be checked by using a 2"x4" board across the hole and another board marked with the depth of your pond placed vertically in the hole. Dig the hole 1"-2" deeper than the pond.



STEP 2: With the hole completed, line the bottom with sand and place the pond in the hole. Begin filling the pond with 4" of water, then back-fill around the pond sides the same 4" depth with damp sand and tamp firmly. Repeat the process until completed, to the top edge. If not properly back-filled, your pond may sag or crack. Pay close attention to make sure the stepped areas of a preformed pond are supported.



STEP 3: Finish the edge as in Step 4 for the liner pond.

Note: Most pre-formed pond manufacturers recommend leaving your pond filled with water during the winter to reduce ground heaving under and around the pond.

Formulas

Determine minimum liner size

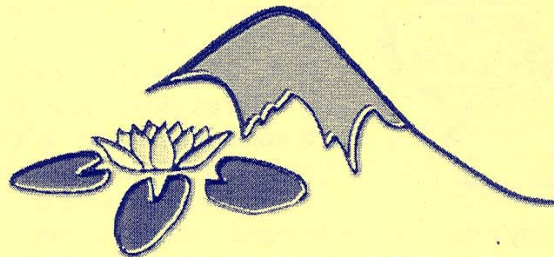
length= length in feet + (depth in feet x 2) +2'
width = width in feet + (depth in feet x 2) +2'

Gallons of a pond

length in feet x width in feet x depth in feet x 7.5

Pump Size

minimum pump size = total gallons of pond divided by 2 = gallons per hour pump required.



Colorado Water Garden Society

For more information about water gardening

contact the

Colorado Water Garden Society:

Cyndie Thomas

303.755.1885

Visit our Web Page at

<http://www.colowatergardensociety.org>

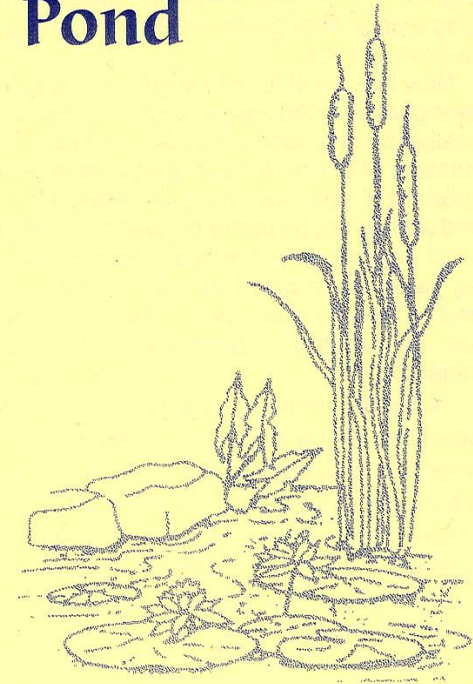
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Colorado Water Garden Society

Pond Design & Construction

► Liner Pond

► Preformed Pond



If you enjoy birds and a relaxing atmosphere, you need to add a water feature to your yard.

A water garden adds new dimensions of sight and sound to any landscape. The sound of trickling water falling over rocks or the splash of water from a dancing fountain can be tranquilizing. Add to that the varied calls and songs of wild birds as they stop for a drink or bath. Combine the sound with the picture of ever-changing, mirrored reflections of flowers, trees and sky and graceful movements of water and fish.

Today, adding a water garden, large or small, does not require a landscape architect, nor a cement contractor. In recent years, new methods and materials have generated a surge in backyard water gardens, and you can do it yourself!

Pre-formed polyethylene ponds are available in many sizes and shapes, from 2' x 4' to 9' x 5', and from 18-24" deep.

Pond liners are available in many pre-cut sizes from 6' x 10' to 15' x 20' in varying materials and weights. Custom liners can be made to any size. Using a pond liner gives you flexibility in design to fit a given space.

Now is a good time to begin planning for your water garden. You'll want to look for a spot which is visible from a door or window and has sun for a minimum of 6 hours each day. This is especially important if you plan to grow water lilies. Your pond should not be under or near an existing tree, as this can create not only a digging problem, but may generate a great amount of debris in your pond. Don't locate your pond in a low-lying area, as runoff can bring dirt and undesirable chemicals.

After determining your location, you need to determine shape and size. If you plan to over-winter fish or hardy plants, you need to plan for your pond to be a minimum of 2' deep. If you plan to have more than a few goldfish, a minimum depth of 3' is recommended. If you plan to have Koi, a 5' depth is suggested. Koi need depth to develop proper muscular growth. If you intend to have fish, your plans should include biological filtration to keep water healthy and clear.

Pre-formed or liner, it's easy . .

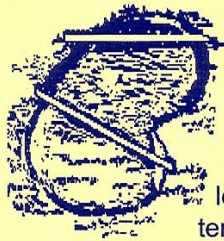
Liner Pond

STEP 1: Get a realistic view of your plan by laying a hose or rope outlining the proposed size and shape. Is it large enough? Is it the shape you want? Work with this outline until you get the results you desire.



Now you are ready to calculate the size of the liner you will need. Measure the widest point and the overall length. To the width measurement add your planned depth x 2, plus 2', which then equals the minimum width of the liner you will need. To the overall length, again add the planned depth x 2, plus 2', to obtain your liner length.

STEP 2: Using your outline, go around the edge using a sharp shovel and cut a small trench. Using this as your outside edge, you can now begin digging. Now is a good time to begin checking to see if the top edge of your pond is level. Using a straight 2"x4" as long and or as wide as your pond, lay it across the edges. With a level setting on top of the 2"x4", determine if you need to shave off soil on any side so when the pond is filled, the water will be at the same distance from the top edge all the way around. Dig down one shovel's depth -approximately 10"-12". Check the top edge, side to side, as you work, to maintain a level pond.



Before you dig the next layer, decide if or where you wish to put shelves. Shelves allow the placement of marginal plants at the proper depth to hide the pond's edge, providing a bog in the pool. The width of shelves should be 10"-14". Come in from the edge this distance (where you want shelves) and begin digging down again to the overall desired depth. To check your depth, lay your 2"x4" horizontally across from edge to edge and use another board marked with your

desired depth to place in the hole vertically for measurement.

When digging is complete, you will once again check to see that the top edges are level, then correct any high or low spots. If you have to build up any area, tamp the added soil firmly. Make certain there are not any roots or rocks protruding in the hole.

You will now need to cushion the bottom and sides of your pond. Water weighs approximately 9 pounds per gallon, creating a lot of pressure on the liner. Cushioning can be done with 2" of damp play sand, old carpet, or newspaper to a depth of 1 to 2." (Dampen it to keep it in place.)



STEP 3: Now you are ready to put in your liner. Spread it across the hole so the excess is distributed evenly on all sides. Weigh it down in several places with bricks or smooth rocks. Begin filling the hole with water, then begin to make folds as evenly as possible and/or straighten as needed. Wait 2-3 days before cutting the excess liner material to allow for settling. Trim to allow a 12" flap outside the pond. From the very edge of your pond liner going outward, make sure there is a slight slope down. This will prevent dirt or any unwanted chemicals from flowing into the pond.

STEP 4: Now the flap can be covered with edging stones, bricks or paving blocks. A 2" overhang of edging materials will assist in protecting your liner from sun damage. Naturalize around the edging with ground covers, ornamental grasses, flowers, etc., keeping in mind the concern for debris fouling the pond. This is the transition area, or marginal area. Look in books to see how "mother nature" arranges the various plants. Un-

