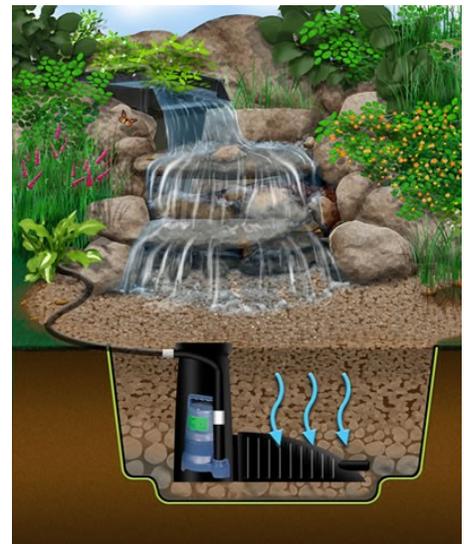


Water Gardens without a Pond

When talking about water features, most people conjure a vision of beautiful ponds filled with fish and plants. Even with the use of modern day materials, installing and maintaining a pond can be costly and time-consuming. However, you do not need a pond or a large area to enjoy the benefits of water features. This article addresses the benefits of “pondless” water features in the landscape. If you are so inclined, you can even grow water plants and enjoy a few small fish.

Small water features bring sound and movement to the garden and have several benefits:

- The initial cost of the newer, smaller features has decreased significantly in the past few years. And, they cost little (or nothing!) to install. In some cases, all you need is a container that holds water, a nearby electrical outlet and a few minutes to add water as it evaporates.
- Lesser concern about the safety for young children and pets around ponds.
- High maintenance considerations are dispelled with the introduction of smaller features
- Any small space can be adaptable to a “pondless” feature.



Where Should I Locate It?

When planning the location of your water feature, consider the following:

Style of your home

Is it formal, informal, cottage, modern? Your feature should be complementary and harmonious with your home’s architectural style.

Existing landscape

What will be the backdrop for the feature? If you are in a new house and determining your landscaping style, a water feature could be the starting point in your design.

Visual considerations

Do you want the feature to be something small on your patio or do you want a focal point that draws you out into your garden? If the feature is one you want to enjoy year round, be sure to check the view from inside your home.

What type of sound do you want to hear?	Moving water can produce a wide variety of sounds from a soft trickle to a loud roar. Nearby structures can also reflect and enhance sound. The sound can be altered by adjusting the rate of flow, the height of the fall and the surface on which the water falls. A large volume of moving water creates an invigorating sound, while a gentle flow is more peaceful and more suitable near a sitting area.
Wind	Need we say more in Kansas? If you plan to have a fountain, place it in an area protected from prevailing winds. A fine spray is more dramatic if it has a dark background. A lacy background of leaves shows off a heavy spray.
Sun exposure	Available sun exposure — full sun, partial sun or full shade — impacts your selection of plants and ability to have fish. If you want to use oxygenating plants or fish, you must select a shady site.
Power source	Moving water will require an electrical source. For small water features and pools, low voltage pumps and lights may be adequate. For other electrical equipment, you will need a ground fault circuit interrupter (GFCI). Be sure to review and follow all safety guidelines.
Location of underground utilities	If you plan to use a feature that is sunk into the ground or that requires any digging, you need to know where your underground utilities are located before doing any digging.
Water access	Be sure it is easy for you to add water to your water feature as it evaporates.

Water Gardens

Good news! Small water gardens containing plants and fish are no harder to plant and maintain than a pot of annuals. Container selections are limited only by availability and your imagination.

Container Considerations

Materials

Use tubs, bowls, pots, birdbaths, urns, whiskey barrels, stone troughs, window boxes or almost anything that can hold a potted plant. Containers can be made of almost any material you can adapt to hold water.

Caution: Metal containers are **not recommended** for plants and fish. They can heat the water during hot weather.

Size

For a tabletop water garden, choose a shallow container about 4 inches deep that does not have a drainage hole in the bottom. For a larger water garden, select a level spot on your deck, patio or elsewhere in your garden. Here you can use any container with a diameter from 10 inches to any size you can manage. If you include oxygenating plants or fish in your water garden, make sure the container is a minimum of 15 inches deep. Oxygenating plants are totally submerged and provide oxygen to the water and help prevent stagnation.

Water tightness

The container you select needs to be watertight or may need a liner to prevent toxins from leaching into the water — for example, if using a whiskey barrel. Even a simple double layer of plastic that will last a couple of seasons is adequate. Terra-cotta containers need to be sealed inside and out with polyurethane and the hole in the bottom must be plugged.

Weight

Keep in mind that large containers will be very heavy when filled with water and may impact your deck or patio adversely.

Plant Selections

The plant selections for water gardening in small containers include many of the plants grown in and around ponds, such as lotuses, lilies, bog plants, floating or marginal aquatics, and moisture-loving perennials, annuals and tropical plants. Even plants that would be invasive in a pond can be restricted in the space of a container.

Floating plants. These are the easiest plants to use. All you do is spread out their roots and place them in the water.

Shallow water and bog plants. These work well in containers. They are rooted in the bottom, grow above the water surface and generally have very showy flowers. They include cannas, irises, and other flowering aquatic plants.

For planting in soil, use a plastic pot with heavy garden soil. Do not use commercial potting mixes as they contain additives. Cover the soil with ½ inch of sand or pea gravel and water well. Sink the potted plant into the water garden container so that the rim of the pot sits 4 to 6 inches below the surface of the water. Use a brick if you need to raise the pot to achieve the correct level.

Fish

The recommended ratio for fish is one inch of fish per gallon of water. To keep the water fresh and clear, add one to two tablespoons crushed aquarium charcoal topped with a layer of pebbles or river stones. Remember the container must be at least 15 inches deep and sited in a shady area.

Sinking a Container

Another way to approach a small container water garden is to sink a large plastic pot, preformed tub, or pool in the ground by digging a hole slightly larger and deeper than the pot so that the rim will sit flush with the ground surface.

Add a layer of sand to level the bottom of the hole. Place your container in the hole and check again for level. Fill in around the pot to secure it and place stones or plants around the edge to conceal the rim. Fill with water and wait a few days before adding plants.

Moving Water

You can add the enjoyable sound of moving water to your feature by using a small spouting ornament and a small circulating pump. When using an electrical component around water, be sure to read and follow the manufacturer's instructions. Some small pumps come with transformers that convert to low voltage; others come with lights.

Self-contained Water Features

Plants are certainly not required in your water feature. In fact, most of today's self-contained water features are designed solely for enjoying the sight and sound of water. All styles and sizes are available, ranging from inexpensive to more expensive "works of art."

Packages include all that is required for installation — the decorative element positioned in a container for holding water and a pump to circulate the water. Some include lighting.

All you need to do is plug it into a safe outside outlet and fill with water. Tabletop designs can be enjoyed year round by moving them indoors during the winter.

Hidden Reservoirs

A water feature with a hidden reservoir uses water stored below ground level in a watertight container. A submersible pump directs water through a plastic tube or metal pipe to the decorative feature above ground. Hiding the reservoir eliminates the need to construct a pond above ground, which is more costly and can be classified as an "attractive nuisance" for children.

Hidden reservoirs are relatively simple to construct and require minimal maintenance. You can use everything from a drilled rock fountain to a large urn. If you don't want to construct your own water reservoir feature, kits are available commercially. With the increasing demand, there are new styles coming on the market all the time.

Installation

Instructions for a hidden reservoir are basically the same as for any water feature. Slight variations occur in the construction depending on the type of water flow desired and the added support required for very heavy features.

- 1. Determine the volume of water.** Begin by determining the volume of stored water needed to operate your submersible pump properly while maintaining the desired flow level. If the pump is run continuously, a considerable volume of water can be lost through evaporation. The plastic liner or bin should hold 2 ½ times the volume of water required. If the reservoir is too small, it may overflow when the pump is not running.

2. **Position the vertical tube.** Make sure the vertical tube coming from the pump is as high as possible inside the above ground portion of the feature. If the top of the tube is too low, all the water above the tube will return through the pump into the reservoir when the pump is turned off.
3. **Select a pump.** When selecting a pump, there are two terms to know. The “rate of flow” refers to the amount of water passing through the pipe in a given amount of time (usually rated in gallons per hour, or gph). The “head” defines the height that the pump is required to lift the water above the level of water in the reservoir. For small features, this is about 3 to 6 feet. For fountains with a single spout of water, the height is easy to identify.
4. **Dig a hole.** Create the reservoir by digging a hole large enough to hold a plastic liner so that it sits flush with the ground. Spread a small amount of sand in the hole, making sure the liner is level. Add soil around the sides to hold the liner in place. Remove any soil that fell into the liner.
5. **Position the pump.** Support the submersible pump on a couple of bricks in the bottom of the liner. This prevents the pump from drawing in debris that may accumulate on the bottom of the reservoir. Stabilize the vertical pipe/tube on the pump.
6. **Add water.** Fill the reservoir with water and cover it with a plastic or galvanized metal grid or lid sufficiently strong to support the decorative elements of the feature.
7. **Place.** Place the water feature over the vertical pipe that extends up through the grate.
8. **Connect and adjust.** Connect the pump to the electrical source, following all safety precautions. Adjust the water flow as desired, using a flow restrictor if necessary. Use decorative stones to cover the grate.
9. **Enjoy!** Sit back in your favorite chair and enjoy your new water feature!

Consider . . .

Some of the following designs may spark your creativity.

Cobblestone fountains

Easily one of the most popular moving water features because it fits into small gardens. The feature consists of water falling from a spout onto cobblestones, providing both movement and sound. When constructing the water reservoir, a small mesh may need to be placed over the larger grid to catch the smaller cobblestones used for the fountain surface.

Rock bubblers

A modified cobblestone fountain can be made with a large rock drilled through the center to accommodate a rigid pipe extending from the submersed pump up to the top of the rock. The rock is supported on a galvanized metal mesh grid placed over the hidden reservoir. The water bubbles out of the rock, circulating back through surrounding smaller rocks into the reservoir.

Japanese water feature

Flexible tubing run through a bamboo spout makes a charming and simple oriental-themed water feature. Water flows or drips into a shallow stone bowl placed over a hidden reservoir. Cobbles are placed around the bowl to disguise the pump and to provide secure support for the bowl. The surrounding landscape should be simple, using various sized rocks and a few plants.

Millstone fountain

A thin film of water bubbling from a millstone is fascinating. The same basic principle of a cobblestone fountain or rock bubbler is applied.

Real millstones are extremely heavy and require sturdy support. Use pressure-treated 2 x 4" cedar or redwood boards notched on the ends so the stone will sit securely on the liner to support the weight. Cut a hole in the center large enough for the pipe to deliver water to the millstone's upper surface.

Fortunately, millstone kits are available now. Simulated millstones, lighter than real ones, are made from reconstituted stone, concrete and fiberglass. Once water has flowed over them for a while, they take on a weathered look and develop a green algal flush.

Waterfalls

Since everyone enjoys waterfalls, they are often included in the design for ponds and water gardens. Whether you prefer the loud splashing noise of large volumes of water or a softer sound, you can achieve it without a pond.

Site selection is most important in making the feature look as natural as possible. The source of the waterfall must be hidden. Build your waterfall behind the reservoir, sealing it so that water does not escape through the rocks. Let the water flow naturally to the hidden reservoir. Remember, the sound can be controlled by the volume of water flowing and the height of each fall.

Fountains

Another way to introduce water into your garden is with a fountain. Fountains are jets of water in different configurations. Some of the more popular fountain types are:

Traditional

Formal fountains shoot water upward in various shapes ranging from columns to sprays. Most often, formal fountains are used within a circular or rectangular pool and are not appropriate for the average garden. Small fountains do not need a pond.

The water from the fountain flows through rocks that camouflage an underground reservoir. A short, heavy column of water is best for this type of fountain, especially in windy locations. The diameter of the hidden reservoir should exceed the height of the fountain spray so that drifting spray is returned to the hidden pool.

- Ornamental** These are fountains where the water is interrupted by a piece of sculpture. The sculpture may have its own preformed reservoir or be part of a birdbath. A container is necessary to hold the water that circulates.
- Wall mounted** Some wall-mounted fountains are self-contained. Others are designed to flow into a container, such as a terra-cotta pot, which then overflows into a hidden reservoir. The wall-mounted fountain or spigot can spill directly into the rock concealing the reservoir. This feature is low maintenance but high impact.
- Bowl and urn** A large colored ceramic bowl with a hole drilled through the bottom and set on a pebble base becomes a stylish feature where the height of the fountain can be adjusted from a low level that barely breaks the surface to a stream of water that shoots into the air. By varying the color, shape and size of bowls, pots or urns, you can create many different moods and styles for any garden site.

Maintenance

All water features need to have their water level checked regularly so the pump is not allowed to run dry and damage the motor. In warm weather, moving water evaporates faster from both the wind and the heat absorbed by the rocks or other materials in your feature.

Water exposed to full sun needs to be replaced if it turns greenish. The green is caused by tiny algae feeding on mineral salts. Because of the high levels of salts in tap water, use rainwater when possible.

Since ice may damage your pump, remove the pump before the first freeze and store it in a dry place. If your water feature is not freeze proof, you need to drain it and store it in a dry, protected area. If it is small enough, bring it indoors to enjoy throughout the winter.

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