

Anatomy of a Gravel Garden

Jeff Epping

Olbrich Botanical Gardens, 3330 Atwood Ave, Madison, Wisconsin 53704 U.S.A.

jepping@cityofmadison.com

Keywords: Gravel gardens, sustainable plant communities, ecologically designed gardens, landscape design

INTRODUCTION

The Gravel Garden Concept

When you conjure up an image of a “gravel garden”, it probably isn’t very fun and colorful — a sea of hot, dry gravel, some harsh craggy rocks and a handful of plain green, sparsely growing plants come to mind? This image might be right on the money, if we were talking about mountainous alpine rock gardens, but the gravel gardens that we’ve created here at Olbrich are different...very different.

Our gravel gardens are chock full of tough, lush, and colorful plants that grow harmoniously together to create vibrant plant communities. The only time you see gravel is when we cut them back in spring before the plantings come to life for another season. One of the greatest things about our gardens beyond their beauty is their ease of care and inherent environmental compatibility with our climate. Once established, these sustainable plant communities thrive on natural rainfall alone and require no fertilizer or other chemicals to grow. Given a little time to grow and fill in, they will look similar to traditional

perennial gardens, but require about 80% less maintenance.

The gravel garden concept is not new and most keen gardeners might associate it with one of the greatest gardeners of our time, Beth Chatto. Chatto converted a gravel parking lot to a beautiful drought tolerant garden over 25 years ago and wrote a book on the topic in 2000. Her gardens in Essex County, England thrive, despite a meager 20 in. of rain that falls each year. Beth’s beautiful garden has influenced many a gardener over the years, me included, and I have hundreds of beautiful photos from my two past visits to show for it.

In recent years, horticulturist Cassian Schmidt, Director of Hermannshoff Garden, located outside of Heidelberg, Germany, has been at the forefront of the gravel garden movement. Hermannshoff is known for its innovative ecologically designed gardens, where functionality and practicality are as important as beauty. Schmidt began experimenting with gravel gardens in the late 1990s, with a goal to create beautiful, low maintenance gardens. I first became aware of his

concepts via noted Wisconsin plantsman, Roy Diblik. Roy, a good friend and one of the best gardeners I have ever known, consulted with us on our first gravel garden at Olbrich. He willingly shared his knowledge gained from Cassian upon visiting Hermannshoff with Piet Oudolf and by creating his own gravel garden in 2007, at Northwind Perennial Farms, his retail nursery and garden center near Lake Geneva, Wisconsin.

Creating the Gravel Garden

So, how does it work? First off, we need to select a site with decent soil drainage and relatively sunny exposure. Once we have that, we begin by removing any existing herbaceous vegetation either mechanically or with the aid of a non-selective herbicide like glyphosate. If there are existing trees or shrubs, they can be left in place and incorporated into the gravel garden, just remove any mulch and organic matter and loose soil beneath the plants.

The next step is to create a solid border or hard edge around the perimeter of the garden if one doesn't already exist. Stone, boulders and pavers are often used to make an edge, but the foundation of a building, driveway, existing sidewalk or concrete curb, all make good edgers. Just be sure that the permanent border is tall enough to retain the 4-5" of gravel that will be placed atop the soil – we shoot for at least 6-7 inches.

Now for the gravel — not just any gravel, but a washed $\frac{1}{4}$ to $\frac{3}{8}$ in. quartz or granite chip gravel works best. Every piece of gravel is relatively the same size, so it remains loose and never packs tight — visualize marbles in a jar. We use a local gray colored angular quartzite or rounded pea gravel, but any hard stone (never a softer stone that would break down over time) of similar size is fine. If the planting bed is large, it's a good idea to drive in stakes about every 5–6 ft and make a mark on the stake about 5 in. above the soil line. These stakes will help

ensure a consistent gravel depth of 4–5 in. throughout the garden, which is important, since it acts as the barrier to weed seed germination, so we definitely don't want to create shallow gravel areas. The uniform gravel depth almost eliminates weeding the garden in the future.

Once the gravel is in place, you are ready for the fun part — planting! Selecting drought-tolerant, deep rooting species, innately tolerant of our hot, dry Midwest summers is essential. The ideal sized perennial for planting is grown in a 3½-in. to 4½-in. pot, which typically has a root ball depth of 4 in. Larger pots can also be used, but they will be more difficult and time-consuming to plant. Smaller pots or plugs can also be used, but they take longer to root into the soil, therefore making them more vulnerable to drought stress during the establishment period. Plants should be spaced anywhere from 10 to 15 in. on center, depending upon their mature size at maturity. The goal is to cover the gravel with vegetation and create a living, interacting community of plants, so a tighter than usual spacing is best.

When planting, be careful not to spill any potting mix into the gravel, since it may become a potential seed bed in the future. Soil or organic matter build-up in the gravel is our enemy and we always look to keep that from happening with the gravel garden system. No special tools are needed for planting, just a good pair of gloves that will allow you to dig through the gravel and put the root ball in place. When setting the plants, the crown of the plant should be flush or just slightly below the top of the gravel. Roy shared a good tip with us: remove the top inch or so of soil from the root balls before planting. In the process of removing that soil, you are also removing the majority of dormant weed seeds that may germinate after planting. You will get most of the seed, but not all — the weeds we have pulled the first 2 years, which hasn't

been many, have been in the crowns of the perennials, not in the gravel between plants.

Once the garden is planted, you will have what looks like a sea of gravel with a few dots of green here and there. Even though you see more gravel than plants the first season or two, don't despair, that quickly changes as the plants grow to maturity. In 2–3 years, you will enjoy a beautiful tapestry of lush, colorful plants.

Caring for your gravel garden is a bit different than tending to your conventional perennial beds and borders. Maintenance will be much easier in the long-run, but getting the garden off to a good start is critical to its long-term success. The key to a good start is water and lots of it. This seems contrary to the whole gravel garden concept, but that requirement changes as the plants root-in, grow and reach maturity and maximum drought tolerance.

Even though the plant species selected for the garden are naturally drought tolerant, they need to root into the soil below the gravel to be that way. Keep in mind that the only moisture available to the plant is in the soil mass that was planted with it. The surrounding gravel has little to no water holding capacity. Think of the plant as still being in the plastic pot that it was initially grown in and water it as if it were. In the beginning, that may mean daily watering during sunny,

hot, windy days. As the plants grow and root-in, the watering becomes less frequent. The best way to know when it's time to water is by monitoring the plants daily and water when you see signs of water stress — most often, off-colored and wilting foliage. A good way to make it easy on yourself and your plants is to set-up a semi-permanent irrigation system that can be left in place for the first season. Hoses and impact sprinklers are relatively inexpensive and worth the investment. We do like to water by hand from time to time, but that isn't always possible, so the inexpensive hoses and impact sprinklers are well worth the investment.

Beyond that, the maintenance is limited to an annual clean-up in spring before new growth begins to emerge from the gravel garden plants. This clean-up should be very thorough since any debris left behind will allow organic matter to build-up in the gravel and become a medium for weed seeds to germinate. We cut the plants back with pruners, pick-up the plant material to compost elsewhere and then go over the area with a blower to remove any material we weren't able to pick-up by hand. When you compare the maintenance of the gravel garden with traditional perennial plantings and lawns, well, there's almost no comparison — the gravel garden wins hands down.