

# Sustainable Urban Gardens

## ‘How to Build a Raised Bed Garden’

### Why Use a Raised Bed Garden?

A raised bed garden is useful for yards that have poor soil or bad drainage, it eliminates the need to dig or to step onto the soil and it helps keep weeds out as well as making it just plain easier to plant and grow healthy plants. Raised beds can make gardening doable for physically handicapped gardeners and make it easier on all of our backs. Raised beds are built above ground where you have total control over the soil and the plants you wish to grow without competing weeds from outside the raised bed. The soil in raised beds warms up sooner in the spring than in the ground beds which is a bonus for vegetable gardens.

### Building a Raised Bed Garden

A raised bed garden is a garden that is above ground and contained in an area with high sides. The gardener can walk between the beds and it is a very organized, easy way to garden. The beds can be any depth you choose and can be used for virtually anything you wish to plant. Vegetables, fruits and herbs grown in raised beds also have an advantage over in the ground growing.



The most popular raised bed has permanent sides that contain the garden bed. They offer great growing conditions for many vegetable, fruit and herb gardens, as well as for flower gardens.

Most raised beds are constructed from wood, so we have shown how to build a wooden raised bed. You can use concrete blocks, bricks, flat pieces of rock, etc., but these are more difficult to build in such a way to contain the soil and not fall apart.

### 1. Select the site

Selecting your site is one of the most important decisions you will make when creating a raised bed garden. Pick an area that will get six hours full sun since most vegetables need full sun (except in the Sacramento Valley and other very hot areas, most plants enjoy part of the day in filtered sun instead of in complete full sun). To grow vegetables that need partial sun and those needing more sun, either create a second bed in a different location or find a location that will receive both full and partial sun. You can also plant taller plants on the west side to shade plants that can't handle as much sun. You will want to make sure the area is flat so it will make it easy to water and all areas will receive an equal amount of water. To make watering easy, install a drip irrigation system and also a timer that will be easy to use and keep your garden perfectly watered.



## **2. Choose size and shape of bed**

Decide the size and shape of your garden bed. Make sure you will be able to easily access all parts of your garden bed. Most people recommend a raised bed not wider than 4' so you can reach the center from both sides. You can build the bed long and narrow or a 4' square, which will allow you to access all your plants without ever stepping on the garden bed. You want to avoid stepping on the bed, which causes soil compaction that interferes with healthy soil biology and healthy root growth. So, if you decide to put your raised bed up against a fence try making it only 2 ½ to 3 feet wide so you can reach all areas to plant and harvest. When choosing the depth of your raised bed garden, the deeper the better, especially if you plan on growing carrots or potatoes that need deeper soil. A bed that is 12 inches deep or deeper is nice, because you can sit on the edge to work the bed.

## **3. Prep the site**

It is important to prep the site for your raised bed. You will want to dig out any large rocks and young tree starts. You can remove any existing sod or obnoxious weeds, but we suggest that you just mow them first and cover the existing sod, weeds and soil with newspaper or cardboard after building the frame. (See 5. Preparing the Soil)

## **4. Build the frame**

It is best to use lumber that is rot-resistant such as redwood, cedar or one of the newer composite woods to construct your bed. (I have used Douglas fir as a construction material, but it starts breaking down after a few years.) Depending on the height you want for your bed, use 2" x 6" or 2" x 12" pieces of wood to build the frame. They can also be stacked on top of each other for a higher bed. Cut your pieces to the desired length, then attach them together to make a simple frame. It is helpful to add a metal corner brace in or outside each corner, or a 2" x 2" or 2" x 4" piece of wood inside the corners, as the corners take the most stress and will tend to pull apart over the years.



Next you will want to level the frame from all directions as it sits in its final location. Just remove some of the soil beneath the part of your frame that is too high, until you have a level frame. If your bed is not level the water could run off one part of the bed and sit at the other end or soak out one end leaving some thirsty plants.

### 5. Preparing the soil

If your site is on top of sod or weeds, follow the next steps which are easier on you (than digging out the weeds) and your garden will appreciate this method of preparation because you won't be disturbing or killing the helpful microorganisms in your existing soil.

- Wet the existing soil well.
- Soak newspapers in buckets and the cardboard in large containers until it becomes limp (pulpy).

(Do not use the shiny ad part of the newspaper, but the colored funnies, etc. are fine. Remove tape and staples from cardboard.)

- Cover the bed with whole sections of newspaper, overlapping pieces by 3" or so.
- Continue to layer the newspaper over the whole area and apply the cardboard on top of the newspapers, following the same overlapping method. (the cardboard on top of the newspapers is helpful if the weeds are obnoxious varieties)
- Wet the whole area down well. All should be saturated well.

The reason for saturating the soil, then the newspaper and cardboard and the soil above is to make one contiguous layer of material so the microorganisms can begin to breakdown the weeds and use them as nutrients. If for example, the newspapers were not presoaked before placing into the bed, then this would cause air pockets which could allow the weeds to continue to grow instead of breaking down. So soaking all ingredients is the key to developing a healthy new raised bed over sod and over weeds. Also, having this be one contiguous layer of material allows your plants to grow deep roots and supports a thriving *Soil Food Web* which of course makes for healthy plants.

Now you can fill your framed bed with soil and compost. This allows you to create a garden with great soil that is ideal for the vegetables and fruit you choose to grow. Fill the frame within a couple inches from the top, leaving room to add mulch after your seeds have grown or young starter plants have been planted.

### Planting and Maintaining Raised Bed Gardens

There is no need to dig into the soil, other than to plant your plants. To plant you make the hole that's about the same size as the root ball of the plant, which you gently loosen with your hand or hand tool and place into the hole so it sits at the same level it was when it was in a pot. Make sure you water well, since the water is like an anti-shock transplant medicine and helps the plant settle right in and allows the microorganisms in the soil to feed the roots so you have a healthy productive plant.

One of the best things about raised bed gardens is that they require very little maintenance. I call it no work gardening! It's a good idea to top dress with fresh compost or worm castings (about ½ to 1" thick) once or twice a year in spring or fall.



When planting new starter plants, you may also want to add compost or worm castings as a top dressing around the plant before you mulch the bed, or if the bed is already mulched, just move it aside to plant the plants and cover again after they have grown up higher than the mulch.

As with any garden bed, mulching the top of the soil with wood chips, shredded wood and/or leaves helps to maintain balanced soil temperatures, increase water infiltration and retention (less water needed), prevent soil compaction, control erosion, reduce weeds, improve soil texture and provide a source of organic matter (food) for the microorganisms (also called the *Microherd*) in the soil. Keep the mulch an inch or so away from the main stems of your plants, otherwise it could cause the stem to rot. If you abandon the bed over the winter, then this also is a good time to cover with mulch to feed and keep out weeds, so the soil is healthy and ready when you want to plant again.

**The idea is that you feed the soil, not the plants.**

Soon your soil should look like dark chocolate in color with a loose texture, should smell good and be full of worms. Depending on the soil you started with in the bed, this could take one season to a year to accomplish.

No chemical fertilizers are used, as they cause the microorganisms in the soil to act as though they are on steroids (killing many of them) and causing the plants to grow too fast which creates plants with thin cell walls that invites insects and disease into your garden. Using chemical fertilizers and pesticides in a garden is not healthy for plants, wildlife or people and is not sustainable.

**Extra Tips:**

When planting young starter plants, or when seeds come up they appreciate a little “TLC” – tender loving care. If it is hot and sunny they appreciate a little more shade than usual until they get used to this new world. A shade cloth can be suspended on stakes above the bed or part of the bed and shingles work well if placed (tilted) in the ground on the west side of individual plants. Shade cloths can help protect tender plants during cold weather too or garden cloches and even row covers can be used.

Your raised bed garden can be productive for many years. Even a redwood bed can remain in good shape for more than 20 years without any extra care. If you feel you want to help protect the wood, the best thing is to paint the outside with reused cooking oil. It is the very best coating that will not break-down or contaminate your raised bed.

By adding organic materials on top of the soil (such as wood chips, leaves, compost, worm castings) in your raised garden bed, you can keep the soil and the microorganisms healthy too. No other additives are usually necessary. Though some people like to grow cover crops/green manures, and infrequently add small amounts of kelp, fish meal and/or manures to their raised garden bed.

So, build it well and it will serve you well, so you can enjoy beautiful plants and/or wonderful tasting, healthy vegetables and fruit for years to come, with very little work!

