

The Benefits of Raised Beds

- You can grow more vegetables in less space (square foot gardening) and have less area devoted to paths.
- They create attractive, well-organized planting areas.
- They save on the amount of amendments and compost used because it's concentrated just on the planting beds.
- It's less work, especially if you make permanent raised beds bordered with wood, bricks, or stone. You won't have to remake the beds each spring.
- The plants will have healthy root systems because you won't be stepping on the planting bed, compacting the soil, and making it hard for roots to grow.
- You can be more creative with design, making round raised beds for example, and planting vegetables, herbs, and flowers in various designs on the raised beds.
- It's easy to plant climbers such as cucumbers up an A-frame trellis because it fits nicely over a 4-foot bed.
- It's easy to fit season extenders such as row covers with wire hoops over the 4-foot beds.
- Raised beds are designed with the human back in mind – less bending and stooping over.
- Lower maintenance for weeds, watering, pests and replanting.
- You'll have more control over your soil mixture and you can easily change the soil texture, fertility and tith.
- Ability to add gopher wiring and copper barrier around edges easily.
- Raised beds are a good way of balancing nature's resources.
- ***They warm up and dry out faster in spring, so plants get a jump-start on the season. (Not always a good thing in desert climates.)
- They're beautiful



Ajo Center for Sustainable Agriculture
Building community one garden at a time

Building a Wood Raised Bed Frame

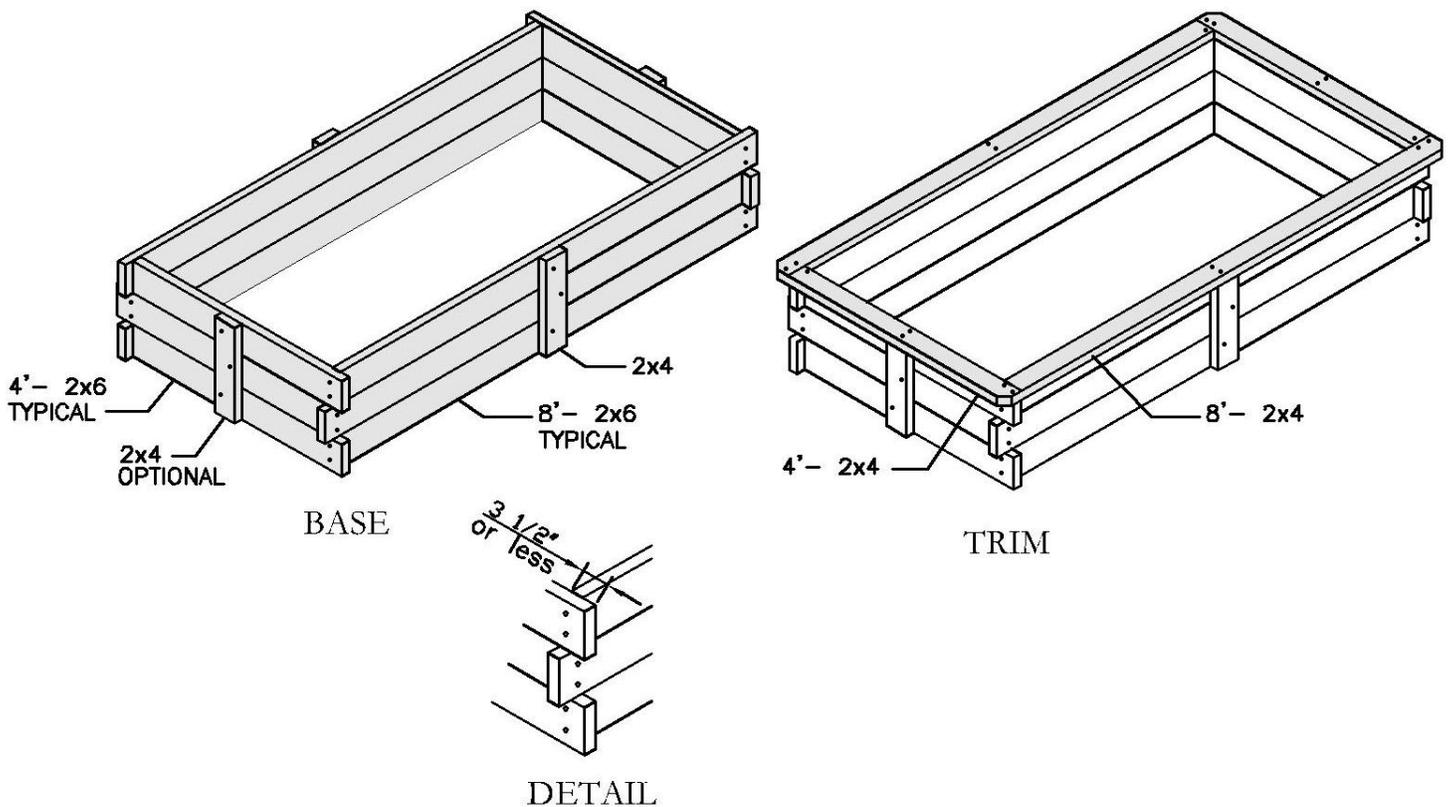
The best wood for long lasting frames is cedar or redwood. You can use any available wood however, be aware that you will need to repair and replace the wood in a few years. Do not use pressure treated wood as it contains toxic chemicals that will leach into your soil. Home Depot sells Mendocino sustainably grown redwood at a reasonable price.

Materials:

- (9) 8' - 2x6's for an 18" high bed and (12) 8' - 2x6's for a 24" bed.
- (4) 8' - 2x4's
- #10 x 3" Exterior screws - 1lb box.
* Nails can be used but will not hold as well.

Tools:

- Tape measure
- Framing square
- pencil
- Handsaw or skill saw
- Drill/ Driver with bits (*or hammer)



Soil Building Information

Key points - good drainage for proper aeration and organic matter, organic matter, organic matter!

- Decide whether to use an amended garden soil and organic matter or a growing media like potting soil with amendments. (See Mels Mix or Johnnys below)
- Mix the top several inches of native soil with several inches of whatever you put in the raised bed to prevent abrupt soil boundaries that could impede drainage.
- Put down hardware cloth to eliminate gophers.
- Very sandy soils or soils high in clay will have the most benefit from organic matter amendment.
- If you use garden soil, double dig the planting bed to make sure that amendments and organic matter are uniformly mixed.
- Add 2 to 3 inches of compost for every 6 to 8 inches of depth and mix well.
- Lasagne garden style and Hugelkulture are great ways to build soil. (See attachments)
- Check the pH in the root zone after a week or so - should be around 6 to 6.5. Lime or sulfur can be used to adjust pH up or down, respectively. Soil is more likely to be alkaline in Ajo. Tucson Garden writer Jacqueline Soule highly recommends 4 tablespoons of vinegar to 1 gallon for water to help acidify the soil.
- Leave at least 2 inches for a mulch on top of the beds

Other issues to consider:

- Ajo soil has been proclaimed "the worst soil of agriculture in Southern Arizona" by a NRCS soil specialist. In particular, we are not based on alluvial planes like Tucson or Phoenix, the soil is Rocky, and caliche is everywhere. Plus, we are a former mining town, and have some soil contamination concerns.
- Peat moss is often mentioned as an organic matter addition - is this a sustainable amendment? Peat moss is a limited resource and a carbon sequester.
- Manure also mentioned as an organic matter addition –it can add salts to the bed and should not touch the edible parts of the plants.
- Good quality compost (fully composted, no large pieces of woody material) is best and sustainable.
- Vermiculite and perlite are also referred to as good soil amendments- they can be costly for large beds but may be reasonable for smaller units. They are also very light and tend to rise to surface and wash away.

Soil mixes:

Mels Mix - The square foot gardening soil mix created by Mel Bartholomew contains 1/3 compost, 1/3 peat moss and 1/3 vermiculite, measured by volume and can be purchased at Home depot, (\$8.97 per 1.5 cu ft bag).

Raised Bed Soil Building

LASAGNA -

The layered garden or sheet composting method was introduced to many gardeners by Patricia Lanza in 1998 in her inspiring book called *Lasagna Gardening*. Although a lasagna garden needs to be cared for the same way you would care for any other garden, it takes less work. There are a few reasons for this.

- You will have fewer weeds. The newspaper and cardboard underneath the garden will keep weeds from coming up from the bottom. The mulch you put on top of the garden will keep weeds from sprouting from the top.
- You may not have to water as often. Compost, what you made by layering food and garden waste, holds water better than regular garden soil.
- You will not need fertilizer. Your garden is almost pure compost, which is very nutrient-rich.
- The soil made from building a lasagna garden will be easy to work because it is crumbly, loose, and fluffy.

Ingredients: The yard and food waste you use to make a lasagna garden are broken into two groups called the browns and greens. Browns are: leaves, shredded newspaper, peat, and pine needles. Greens are: vegetable scraps, garden trimmings, and grass clippings. Food waste cannot be any meat product nor have oils in it. For example, leftovers from a stir fry cannot be used because they were cooked in oil. However, if vegetable scraps were not cooked in oil, like leftover steamed vegetables or raw pieces like apple cores, they can be used. The following materials are all perfect for lasagna gardens:

- Grass clippings
- Leaves
- Fruit and vegetable peels and scraps
- Coffee grounds
- Tea leaves and tea bags
- Weeds (if they haven't gone to seed)
- Manure
- Egg shells
- Seaweed
- Shredded newspaper or junk mail
- Pine needles
- Dead flowers
- Trimmings from the garden
- Peat moss



LASAGNA

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HUGELKULTURE - pronounced Hoo-gul-culture, means hill culture or hill mound.

Instead of putting branches, leaves and grass clippings in bags by the curbside for the bin folks... build a hugel bed. Simply mound logs, branches, leaves, grass clippings, straw, cardboard, petroleum-free newspaper, manure, compost or whatever other biomass you have available, top with soil and plant your veggies.

The advantages of a hugel bed are many, including:

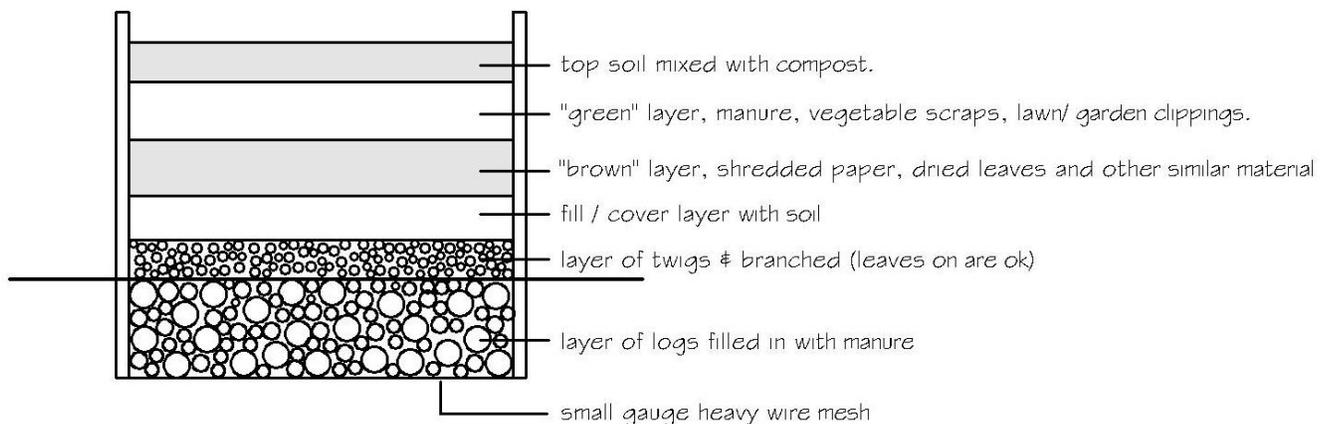
The gradual decay of wood is a consistent source of long-term nutrients for the plants. A large bed might give out a constant supply of nutrients for 20 years (or even longer if you use only hardwoods). The composting wood also generates heat which should extend the growing season.

Soil aeration increases as those branches and logs break down... meaning the bed will be no till, long term.

The logs and branches act like a sponge. Rainwater is stored and then released during drier times.

More advantages:

- grow a typical garden without irrigation or fertilization
- has been demonstrated to work in deserts as well as backyards
- use up rotting wood, twigs, branches and even whole trees that would otherwise go to the dump or be burned
- it is pretty much nothing more than buried wood
- can be flush with the ground, although raised garden beds are typically better
- can start small, and be added to later
- You can save the world from global warming by doing carbon sequestration in your own back yard!
- perfect for places that have had trees blown over by storms
- can help end world hunger
- give a gift to your future self



HUGELKULTURE