



DIY Hardscapes: Laying Pavers

A Landscaping Walkthrough

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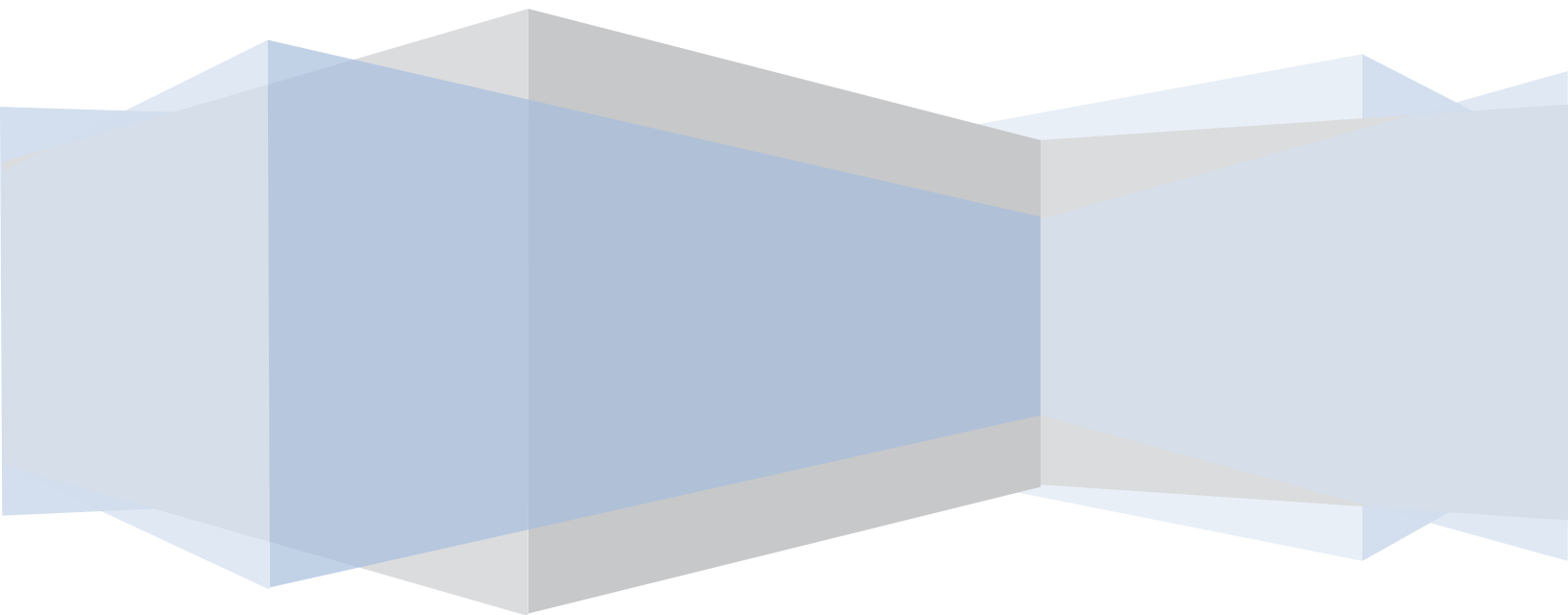


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Laying Pavers

There are many different methods of patio building. Having experimented with many of these methods, the process explained here is best to ensure a well built patio. If you find that during this process that there is an easier way to proceed through a step, then don't hesitate to do what you feel is more comfortable for you.

Tools

The project you are about to embark on requires tools that the average person typically does not own. There are many places you can rent tools you do not have, and you can always ask family and friends to borrow their tools. In the 'Shortcuts' section, I discuss ways to avoid using certain tools so you don't have to spring for rentals, but it comes with sacrifices. Here is the list of tools you will need:

- 1" Steel piping (Conduit works best)
- Broom
- Concrete saw
- Gas powered compactor or tamper
- Hammer
- Hose
- Landscape paint (optional)
- Level (the longer the better)
- Long wooden 2X4 (make sure it's not warped)
- Rake
- Shovel
- String line
- Tape measure
- Wheelbarrow

Materials

These are the materials you will need to build your patio:

- 1/4" down limestone
- Grass seed
- Paver edging and spikes
- Pavers
- Sand
- Top soil

Step 1: Make a rough plan

Don't waste your time drafting up a formal 'to-scale' plan. This isn't a necessary step. I would still recommend having a rough outline of the work that lies ahead. You can formulate a functional plan on simple piece of small drafting paper or loose leaf. All you have to do is draw out the area in which you plan to landscape, and mark out the desired sizes/designs in which you desire for your patio. This will allow you to calculate the square footage you will need for pavers and it will be a helpful point of reference while you work. For our purposes, I will be referencing the 12'x 12' I have outlined in the following photograph.

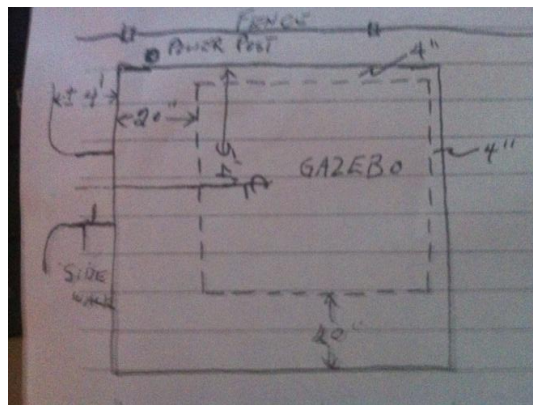


Figure 1 - A sketch as simple as this can be a good enough reference point

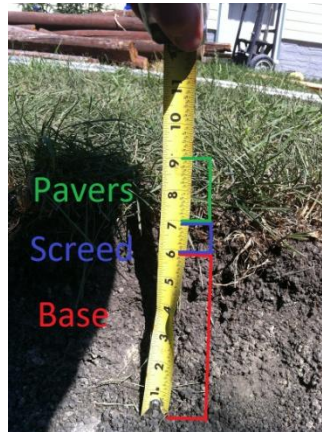
Step 2: Excavation

There aren't many people out there that think digging is fun, but every step in the patio building process is just as important as the next... including excavation. It is important to excavate to the correct depth with the correct slope you want to ensure a well built patio.

1. Mark out the area you want to build, always excavate a slightly larger size then you initially plan to use. This way, you have extra room to work with and you won't have to go back to excavating later (For example, if you are building a 12 x 12 patio then excavate 13.5 x 13.5).



2. Once you've marked out your excavation area, figure out the depth you want to dig. An easy way to figure this out is this: Thickness of base + Screed (1") + Thickness of Pavers ('Screed' is defined in step 4).



The depth you will need to dig will differ from what area you are in. In prairie areas where the ground is soft and resembles clay you will want a base of around 5-7 inches. In areas where the ground is harder and rockier you can get away with 2-3 inches of base.

3. Double check your depth and your slope and move on to the base work.

Step 3: Base Work

As mentioned before, every step is just as important as the next, so don't slack doing the base work. This is the foundation that your patio will sit on and you will want to do a good job so you won't have to fix your mistakes in the future.

1. Start filling the excavated area in with base gravel (1/4" or 3/4" down limestone works well).



2. Rake out the area so you have a flat surface, you should frequently set your level down to ensure that it's relative to your desired slope. Leave room between the grass line and the top of the base for your screed and pavers.



For a typical patio slope, you want around 1 inch of slope for every 8 feet of patio

How to do it: Check a slope

A simple method for checking a slope is to place a level on something like a long 2X4, that isn't damaged or warped, along the area you want to check. Then lift the lower side of the board until it is level. Measure the gap from board to the ground surface and that will tell you the size of slope you have.



3. Wet the surface of the gravel with a hose before compacting it, this helps solidify the base

4. Run a gas powered compactor over it. Run the compactor over the whole area of the base around 8 times to ensure the gravel is fully compacted. If you don't own or have access to a gas powered compactor then you will have to tamp it, but I highly recommend renting one as it will assist you later in the building process as well.

You can rent plate compactors from anywhere between \$50.00-\$150.00 a day



Step 4: Screed

Now that you have a level base that is uniform with your slope you can begin setting your screed. Screed is the level surface that your brick will lay on (either sand or $\frac{1}{4}$ " down limestone). For our purposes, in the following steps we will use sand as our example for screed.

1. Set down some straight steel poles ($\frac{3}{4}$ " or 1" conduit works best) a couple feet apart on your base and put a pile of sand on the end of each rod



2. Set your level across the poles, and slowly lift whichever end needs to be adjusted to meet the correct level. Do this on each end of the pole (for using multiple poles make sure each is level across from the one beside it).



3. Once level, you can use a straight wooden 2" x 4" to drag the sand along the poles; this creates your level surface



4. Keep doing this for the area of the patio, *you may have to use several poles set at varying slopes to get the desired surface you want for paving.* For large areas you may have to pull back the poles at some point, just remember to level the ends of them again after doing so



5. Once finished, remove your screed poles and fill in the lines with a cement trowel



Step 5: Paving

This is the step where everything comes together. By now you should have already selected the type of paver and the pattern you want to work with. During this step it is imperative to designate an appropriate starting point in which you can maintain a straight line that the pavers can sit against so that you can avoid gaps in your patio.

1. Set up a string line. You're going to want a string line so you have a straight line you can lay your brick from. It is very easy to pave a bend without realizing it, and it's never fun to work backwards. This step may not be necessary if you already have a straight line you're deciding to work off of (eg. fence, house)



2. Once you have decided where you want to start paving from you can start laying your brick



If you are designing a patio which requires cuts then you will have to rent a concrete saw. The rental fee for one of these usually goes from about \$50.00 to \$80.00 a day

Design tip: Borders

Borders really help bring things together, here are a couple common borders for patios:



3. Once paving is done, use paver edging to hold in all the brick on any open sides and spike it into the ground



Step 6: Finishing Touches

Now that all your hard work is starting to come together and look like something, it doesn't mean you're done. These last couple steps are quick but essential for your patio before you call it a finished project.

1. Sweep the patio clean
2. Spread sand over the patio and begin to sweep it into the spaces between brick



3. After the cracks look filled, run the gas powered compactor over the patio to set the sand deeper into the spaces (the compacting part isn't necessary if you are using a larger sized brick such as slabs or flagstone because there is a good chance that they will crack). Do this several times until the sand is fully set.



4. Sweep the sand off the patio completely
5. Fill in the outside edges from excavation with top soil and grass seed to cover the paver edging

Shortcuts

The methods I have discussed here are all necessary steps to create a long lasting patio. Since not everyone owns or wants to rent a gas powered compactor or concrete saw, there are ways you can avoid having to spring for those expenses. Here are ways you can substitute paying for such expenses:

1. If you don't have access to a compactor, instead of running it over the base to pack it you have the option to tamp it. This can be physically demanding but it will save you the rental costs. Also, for the final step of sanding the patio, you can just sweep the sand into the cracks; however you will find that over time you may have to do this repeatedly as the sand sets.
2. If you don't have access to a concrete saw, you can design a shape that won't require it such as a square or a rectangle.
3. For convenience, use $\frac{1}{4}$ " down limestone for both your base and your screed. This can save you money on delivery charges from using multiple aggregates.