Building a Landscape Retaining Wall

Retaining Wall Use

Retaining walls are used for both commercial and residential purposes. They have gained popularity in a short period of time, becoming commonly used for landscaping projects around the home and for commercial landscapes as well.

Retaining walls can be self-installed, making them very cost efficient.

Retaining walls are found around the home garden to highlight flower beds, patios or yard features. While providing a functional application, they also add aesthetic appeal to your landscaping. Proper installation of landscape retaining walls makes sloping lots usable while managing both soil and water runoff.

Retaining Wall Materials

While retaining walls are made out of many types of building materials, a landscape retaining wall utilizing a retaining wall block system is a popular choice, due to the easy installation features. The blocks are made from cement and lightweight aggregate materials.

There are various designed wall block systems. Shown is a traditional block. Contact your supplier to find out about availability and cost for your local area.

Considerations

The following points need to be considered when planning your retaining wall installation:

- Walls over 4 foot, should use geo-grid fabric
- Different block designs limit allowable height
- Use filter fabric over wet or dry soil, then cover with gravel
- Ensure good drainage with the use of backfill, drain piping, filter fabric or weep holes.
- Always backfill between each layer
- Follow manufacturer's recommendations

Installing Retaining Walls

Following is a do-it-yourself guide to installing a retaining wall using a designed block system.

The following 11 steps are outlined:

1. Tools and Equipment
2. Retaining Wall Plan and Layout
3. Excavation
4. Base Material
5. Compact
6. Bedding Sand/Gravel
7. Establish String Line
8. Lay the First Row
9. Backfill
10. 2nd & Subsequent Rows
11. Retaining Wall Capping

Building a Retaining Wall Eight Step Outline

1. Tools and Equipment

- First read all manuals, instructions and safety guidelines provided by your manufacturer
- Safety glasses
- Hammer
- Rubber Mallet
- Spade or backhoe
- Masonry Chisel for splitting
- Power saw w/diamond blade
- Levels
- Power tamper or hand compactor
- Tape measure
- 3 foot piece of 2 x 4
- 6 foot piece of 2 x 6
- Stakes and string

2. Plan and Layout

Plan your project for the site where the retaining wall will go. You may need to consult an experienced installer particularly if your retaining wall is over 4 feet high.

The size of your wall depends on size and shape of the space you have. Map out and measure your layout using stakes and string, pulled tightly. When installing a curved retaining wall, use a garden hose and spray paint, to mark and map out the curved radius.

3. Excavation

The preparation of the base upon which the first layer of block are to be placed is critical to building a well placed stable retaining wall.
When digging your trench, the bottom row of blocks should be buried about 1 inch for every 8 inches of wall height. This provides the strength and stability of your retaining wall.

Followed by this, you should make sure that your trench is level and compacted.

4. Base Material

The base material should only consist of angular, sharp edged particles such as ¾ minus gravel. The various sized crushed gravel with the fines helps ensures for appropriate compaction.

Round rocks such as pea gravel rolls and dislodge under pressure resulting in failure of the retaining wall.

Lay a 4-6 inch layer of the crushed base material in the trench. Next compact it and level it using either a hand or mechanical compactor.

A 6 foot piece of 2 x 6 along with a level is useful for screeding the base material to obtain a level base.

5. Compact

Using the appropriate type of compactor for your site size either powered or hand operated, level and compact your base material. This is so important; the base should be so compact, that when you walk over it, there is no shift at all.

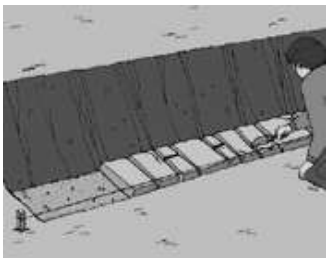
6. Bedding Sand

Follow the compaction step by spreading a 1 inch layer of coarse sand or ¼ inch minus gravel. This layer is used for bedding the first layer of wall blocks.

7. Establish a String Line

When building a straight wall, establish a string line along the back side of where the first layer of blocks will be placed. This will provide a guide to help ensure the wall is straight. Obviously this will not work when building a wall that curves.

8. Lay the First Row



Lay the first row of blocks on the base material.

The blocks should be laid with their edges touching. Make sure that the blocks are level with each other on all sides; front to back and side to side.

Use a rubber mallet to set each block in place. Check the level of each block using s small level front to back side to side. If not level, level the block by lifting and placing a small quantity of bedding material under the appropriated low side. Reset the block with the rubber mallet.

It is also recommended that a 3 foot piece of 2 x 4 be used to check the side to side level across the last 3 installed blocks.

Take your time with this step. It is critical for building a sturdy and good appearing wall. If this first layer is not level and firmly placed the remaining wall project will reflect any defects.

9. 2nd and Subsequent Rows

The second and subsequent row must be staggered such that the block being placed upon the lower row straddles the joint line.

Use a masonry chisel or diamond saw to split a block in half.

This ½ block is placed so as to create the correct spacing for the next full block ensuring that it straddles the joint in the row it is resting on.

10. **Backfill**

After each row is completed, you should use backfill to reinforce the retaining wall.

Crushed gravel is used to fill in the back and sides of your blocks. This is done upon completion of each row. Backfill helps with water drainage.

Compact the backfill before starting on the next row of blocks. You should clean and sweep the top of each row, before the next row of blocks are placed since it only takes a small amount of loose material to keep the next block from sitting firmly in place.

11. Capping

Wall capping is recommended but not required for your retaining walls. Capping helps to protects your retaining walls from weather and erosion. There are several choices that can be made for capping material. For some types of retaining wall block systems there are corresponding capping stones that are designed to match the design of the wall block. Beside various products made of concrete other choices include various types of flat or flag stone.

Typically the capping material is glued into place using an adhesive similar to construction adhesive but made specifically for masonry products. Generally the wall material needs to be dry to ensure good adhesion.

Lay out the caps, cut them as necessary, glue them in place with the construction adhesive, and you're finished.