

Taming Steep Slopes: Designing and Mastering Hillside Gardens

By Robert Welsch, Professional Member, APLD

As professional landscape designers, we all have lots of experience and expertise designing beautiful gardens on mostly flat properties for our clients, but what about those challenging slopes? Or worse yet, steep hillsides that seem all but impossible to landscape effectively? Well have no fear, with a few tried and true solutions, you can transform even the steepest slopes into beautiful, useable space. So let's start with the definition of a steep slope:

For the purposes of this article, a steep slope is any grade change of 20 percent or more, or two feet of rise for every 10 feet. Lawns can be mown at a 30 percent slope or three feet of rise for every 10 feet, but more than that is difficult without cleats and a rope and harness.

The number one challenge with a steep slope is erosion and rainwater runoff. Discovering how water moves across the property through on-site observation (yes, even in a rainy downpour!) can help you map out where proper drainage (swales, French drains and dry wells) need to be installed. Navigating safely through the landscape is the



next concern. How will your client get from point A to point B in a safe and graceful manner? Ask the question: *Could my mother enjoy walking safely through this landscape with a cocktail in hand and in heels?* The final challenge (and the most fun to solve) is that due to poor access, a steep slope can be unsightly and difficult to maintain. Does your design solution include ways to successfully access garden beds for routine maintenance?

Hillside Garden Challenges:

1. is Erosion, rainwater runoff and soil erosion
2. is Drainage
3. is Dangerous and difficult to navigate
4. is Unsightly – can become a weedy mess and difficult to maintain.

As landscape designers, we can use all our skills and resources to design beautiful and practical solutions for our clients.



In my experience, taming steep slopes is a process of trial and error – “if at first you don’t succeed, try, try again.” “Shift happens!” and “Gravity is a bitch!” No matter how smart you are, or how much planning you do, it may take several attempts to successfully mitigate water and drainage issues. You have to observe and think and make adjustments often several times before you get it right. Remember, soil is heavy, water is heavier, wet soil is the heaviest. Some drainage solutions to consider are the use of swales and dry river beds, catch basins and/or dry wells, French drains and basic retaining wall drainage systems which may include the use of gravel, perforated flexible black pipe, landscape fabric, decorative stone or cobbles as a topdressing, or soil and turf or plants.

Tips on Designing for Steep Slopes:

- During your initial consultation with your client, ask them about how they intend to use the property and hillside sections – what do they want to do? See? Experience?
- Get a survey and topo map showing all contour lines for the property.
- Walk the property – observe it in different times of day, and especially on a rainy day to see how the water moves down the slope – follow nature.
- Start marking out the locations of walls, paths, seating areas, planting beds, drainage swales, drywells, catch basins, etc...Think three dimensionally with an eye to how water, and people will move through your landscape.
- Imagine breaking up your steep slope into levels or zones that will get your client from point A to B with ease.
- Think of natural stops or pauses wherever there is a change in direction or change of view...slow down the experience by managing the way your clients will see and experience the garden.
- Include a viewable “destination” or focal point that will reward your client as she moves through your design.
- Collect inspiration pictures from the web and books for direction and ideas.
- Prepare the concept plan and meet with your client to walk them through the property and how things will work.
- Adapt and refine your plan – finalize the design and get a sign off from your client.
- Check with your local town for building permit requirements – some municipalities may require an engineer, soil samples, and a landscape architect to stamp plans. They may need to make onsite visits during construction for footing inspections and drainage inspections before the homeowner can get a Certificate of Occupancy when the project is completed.



Steep Slope Solutions:

As designers, we have a wonderful opportunity to create multiple garden rooms and outdoor experiences for our clients. There are both hardscape and softscape solutions to mastering hillside design. Depending on the property, a retaining wall or series of walls will be necessary. They can be constructed out of stacked stone, block with stone veneer, railroad tie or treated wood timber walls, block with stucco, poured concrete, brick, engineered interlocking block systems such as UniLock or UniBlock, or Anchor Wall or VersaWall etc... If you have never designed these types of systems, there are numerous “how to” tutorials on the web from manufacturers of various hardscape companies. One option you may want to consider is the use of large and medium size boulders to help retain soil and line walkways or terraces.

Incorporating a terrace or series of terraces and landings are the next step for making the most out of a sloping property. You can incorporate stone, switch back trails or paths – ramps, (2 to 3 percent) -- no more than 8 percent without a handrail. The BEST way to control erosion and create more useable space is by sculpting the land, cutting and filling, layering, creating outdoor rooms, walkways, shaping the “experience” of vista and views.

Another option may be the design and installation of a wood or composite deck, platform or landing. Decks are a great way to maximize useable outdoor living area and provide for access to lower areas of the property via steps and landings made of similar materials.

Remember to include walkways and paths in your design. Circulation is a key element in creating a safe and comfortable experience moving through the garden. Paths can be tamped earth, stepping stones or timbers, wood chips or gravel. Use your imagination and have fun.

Finally, there are the softscape or plant solutions. These will be a key element in offering a planting design with an eye to more drought tolerant and native varieties. Some of my favorite plants include amalanchier and dogwoods for the tree layer, viburnums and bottle brush buckeye for woody shrubs, and of course ornamental grasses such as Ruby Ribbons, Heavy Metal and Dallas Blue. Some fantastic ground covers or huggers for steep slopes include *Rhus aromatica* ‘Low Gro’, cotoneaster, heath and heather, stephanandra, and for evergreen interest, creeping junipers such as Blue Rug and Blue Star. Other great spreading ground covers include *Ajuga reptans*, *Pachysandra terminalis* or *Pachysandra procumbens*, *Vinca minor* or *Carex elata* ‘Bowles Golden’, and lily-of-the-valley. Other options include sedums or stonecrops including ‘Dragon’s Blood’, ‘John Creech’, ‘Vera Jameson’, and ‘Ruby Glow’. Many of these are shallow rooted and will not be right for a steep slope, but great for between stepping stones and boulders.

All gardens present challenges, but gardening on a slope magnifies those challenges and brings them front and center. Master these and you can master any steep slope.



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