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Terraced Garden Tackles Troublesome Hillside

The Challenge
Building a new home can be exciting and often challenging. This hillside lot was indeed a challenge for the homeowners building in a new development. They needed to reshape the slope in front of their home and gain more usable land for a driveway leading to the front entrance.

The Solution
To manage the 8 ft. (2.4 m) change in grade and create a pleasing landscape, Hardscape Construction Inc., suggested a terraced retaining wall rather than one large wall. They advised the homeowners that two terraced walls with a planting area between them would soften the hill and add drama to the driveway entrance.

The homeowners loved the idea of a terraced flower garden, but needed to keep the costs down. They worked with the contractor to create a design that was both economical and distinct. They used AB Stones for constructing the terraced walls and added a "Dash of Ashlar" to create a beautiful accent texture. With 20% of the wall being the Ashlar Blend pattern, they were able to keep overall costs down while creating a truly unique design.

Engineering & Construction
By keeping the walls under 4 ft. (1.22 m), using AB Stones and laying out the terraces to achieve proper separation, they provided a cost effective solution for developing the site. The contractor describes the construction process, "Because this was a new development with previously excavated soils, we wanted to make sure the walls would not settle over time. So we re-excavated and compacted the base soils before beginning construction. Excavating for the spacing between the walls and compacting the infill soils had to be done carefully. Although difficult, it was necessary to ensure proper long-term performance of the walls."

“I'm pleased with the results. We took a challenging lot and created a beautifully landscaped driveway entrance”.
- Hardscape Construction Inc.

Conclusion
The homeowners are delighted with the project. "Hardscape Construction did a very professional job from start to finish. Even with the extra effort they made to ensure the walls were built on stable ground, they completed the entire project in less than 10 days. Today, 8 years later, you can tell they did a great job because the wall looks as good as the day it was finished."

Spice Up Your Wall with a "Dash of Ashlar"
To give your AB Stones and AB Classic walls eye-stopping design and visual interest, try adding a small area of patterned blocks. It’s easy. Using the different block shapes in the AB Ashlar Collection, you can easily build random or “Ashlar Blend” patterns into your wall. The above photo shows how simple it is to transition in and out of an Ashlar Blend pattern. For more information on building Ashlar Blend walls, ask your AB Dealer for a copy of the AB Installation Guide or visit allanblock.com.

“We got a beautiful no-maintenance wall at a great value”
- Homeowner
Building Terraced Walls

Landscape designs are often more attractive when they include smaller, terraced walls rather than one large wall. Terraced walls can create more usable space, build raised gardens, help prevent erosion and add interest to your landscape.

Plan

Determine the spacing

The spacing and height of terraces will affect the overall design and engineering of your project. Choose the wall layout that best suits your project requirements.

Plan A: One wall

- Attain more usable space above or below the wall
  - Larger walls may need more reinforcement.

Plan B: Two walls, spacing less than $2H_1$

- Soften hillsides, create planters and add more usable space.
  - Tightly spaced walls may need reinforcement as they do not act independently.

Plan C: Two independent walls, spacing greater than $2H_1$

- Create manageable hillsides.
  - May reduce or eliminate the need for reinforcement.
  - Can design each wall separately.

Design

Design the shape for beauty and function

Consider what will fill the space between terraced walls. Will it be used for plantings, filled with decorative rock or covered with sod? Terraced walls provide built-in edging that minimizes trimming and maintenance. Design the shape of terraced walls to complement the surrounding architecture and landscape.

Straight walls create a formal, structured look.

Flowing curves have a more natural feel, provide lots of planting pockets and create a softer look.

Irrigation is often included when incorporating a planter. Ensure that your plan includes provisions for water management.

Terraces and Structure

Building a series of walls on a slope requires careful planning for the structure. Follow this simple set of rules:

When the walls are spaced far enough apart they are engineered as two independent walls.

The height of the upper wall is equal or less than the height of the bottom wall and the distance between the walls is at least twice the height of the bottom wall.

As the upper wall moves closer to the lower wall, it adds pressure (surcharge) to the lower wall.

The lower wall will need to be engineered to account for the added weight and pressure, and extra reinforcement may be required.

Use these simple equations to determine if engineering review is required:

$$H_2 \leq H_1 \text{ and } D > 2H_1$$

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Build

Always Build on Solid Ground

- The most important element in building terraces is soil compaction. Building on poor, uncompacted soil will result in settling of the upper walls. Although lower terraced walls are typically built on solid ground, upper walls are often built on soils that have been disturbed in the construction process. To ensure the stability of these soils, they should be removed down to solid ground and carefully reinstalled and compacted.

- To achieve proper compaction there are two different techniques that work well. One way is to remove soft or poor soil and replace them with wall rock and compact in 8 in. (200 mm) lifts. Another way is to compact the onsite soils in shorter lifts. When using onsite soils, we recommend no more than a 4 in. (100 mm) lift. Good compaction is the key to minimizing settlement over time.

Plan ahead for walls that split into terraces. The area immediately behind the lower wall will require extra attention to ensure proper base preparation for the new wall above.

Compact this entire area in 4 in. (100 mm) lifts to minimize settlement.

Compact this entire area thoroughly

To prepare for the upper wall, this area will need to be compacted to 95% of Standard Proctor.

Construction Equipment

Use hand operated plate compaction equipment on the block and within 3 ft (0.9 m) of the back of the wall. All heavier equipment must be kept at least 3 ft (0.9 m) from the back of the wall. Wall designs typically do not account for surcharges from heavy compaction equipment. Even a properly installed and compacted wall will rotate forward when extreme surcharges from heavy equipment are applied to the top of the wall during construction or final grading.

Global Stability

As the size of the slope gets bigger the overall stability of the entire terraced wall structure becomes important. Engineers call this “global stability”. If the total height of the terraced slope is greater than 6 ft (1.8 m) contact your local Allan Block dealer or engineering professional for design assistance.

In a global stability failure, the entire hillside moves.
New Allan Block TV Commercials Launched on HGTV and DIY Cable Networks

Allan Block is gaining recognition across North America with the launch of our new television commercials. Visit allanblock.com to view the two spots that are running on HGTV (Home & Garden) and DIY (Do-It-Yourself) networks.

AB Certification and 2005 Rewards Program

Build your business, reap the rewards.

The 2005 AB Contractor Rewards Program is in full swing. One of the first companies to get certified and earn their Bronze level reward kit is Creekside Gardens from Warren, OH. For full details on this program and more information on how you can participate, contact your local Allan Block representative or visit allanblock.com.

“I did my Allan Block Certification Training last November at a seminar Reading Rock held in Columbus, Ohio. The training was excellent. I’ve been installing retaining walls for nearly 20 years and still learned some new things. Plus, the literature and sales tools they provided were an added bonus”.

- Bob Meinke, Creekside Gardens

Landscape Design CD, Complete Design & Installation Information

For professional landscape ideas and inspiration, sign up to receive Allan Block’s Landscape Design CD at allanblock.com. Packed with information to help you plan, design and build courtyards, walls up to 6 ft high (1.8 m), this CD includes product specifications, installation guidelines and a valuable material estimating program.

AB STONES - Proven Performer and “Everyday Hero”

Our signature block is the best choice for basic wall construction. AB Stones are the most efficient, easy-to-stack full size blocks on the market.

Competitive - Based on installation speed and setback, AB Stones outperform all other wall products and in durability and cost-effectiveness for walls that have limited timber reinforcement. The greater setback of the 12° AB Stones is able to hold up unreinforced soil than the 6° AB Classic.

Sign up to get Landscape Lifestyles by e-mail.

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