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Water and Allan Block Go Hand in Hand

Good landscaping doesn’t create water problems - IT SOLVES THEM.

Construction Tips for Proper Water Management

Use the right Wall Rock
- To promote in-wall drainage, you should choose rock with a rough texture or a rock with enough voids in it that are fairly free of fine-grained material (chips). The Wall Rock, placed in and around the block on every course, will allow incidental water to flow through the wall and assist in managing water flow.

When do I need in-wall drains?
Follow these rules of thumb:
- All walls taller than 4 ft (1.2 m)
- Walls that have poorly draining soils
- Walls with a slope of more than 10% (20%)
- Wells adjacent to the wall
- On multi-tiered and terraced walls
- All commercial and municipal projects

Vent your Toe Drain to Daylight
- The preferred method places the toe drain as low as possible in the trench. From there, route the toe drain to a lower-grade area to vent the water.
- If the base elevation of the wall is already at the lowest point, you may be able to vent the toe drain up above grade at the base of the wall. The material below the toe drain will need to be a low-permeable granular material to ensure the path is airtight.

Wall Rock
- Use rock in the block cores and behind the wall. The rock should extend 12 in. (300 mm) behind the wall.

Toe Drains
- Toe drains are used to prevent water from being trapped behind the wall and building up hydrostatic pressure. For this reason they must be positioned at the lowest point possible to allow the water to flow to daylight.

FAC T: 90% Of Wall Failures Are Caused By Improper Water Management

Irrigation Systems - When irrigation systems are used they should be designed and installed to perform in a controlled and measurable manner.
- The system should incorporate planning and equipment to prevent over irrigation that could saturate the soils behind the retaining wall.
- Allan Block recommends that all sprinkler heads and piping be installed 10 ft (3 m) behind the wall to prevent problems associated with broken lines or faulty sprinkler heads.
- Even with relatively flat grade above the wall, berms and easels should be utilized in the event of over irrigation. This will prevent surface water from ponding above the wall.
- An outdoor faucet can also cause problems if it leaks or is accidentally left on, creating a water build-up behind or above the wall.

Build
- Always build on solid ground. Check the base trench before you place your wall rock and install your first course of block. Any soft or saturated soils must be removed and replaced with additional wall rock.
- During wall installation temporary grading must be in place to ensure water will not be diverted towards the construction area. Constructing and maintaining temporary slopes and berms daily will prevent the on-site soils from becoming saturated. Use a short of poly or tarps to cover stockpiled boulders to prevent saturation.

For additional information or ordering with Allan Block products, visit allanblock.com
**Construction Tips for Proper Water Management**

**Use the right Wall Rock**
- To prevent in-wall drainage, you should choose the right sized stone or gravel, as there is fairly fine of lime-grained material flow. The Wall Rock, placed in and around block above or above the walls, should incorporate planning and equipment to prevent water from getting below the wall.

**Wall Rock** makes compaction easy around the block. Gravel is a very fine grain material, acts like a filter, keeping the lime-grained soil from blowing through the face of the Wall Rock.

**When do I need in-wall drains?**
- Follow these rules of thumb:
  - All walls taller than 4 or 8 ft (1.2 or 2.4 m) with poorly drained soils
  - Alsodeposit areas
  - Nests above the wall
  - On multi-tiered and terraced walls
  - All commercial and municipal projects

**Vented your Toe Drain to Daylight**
- The preferred method places the toe drain as low as possible in the trench. From here, you will need to find a lower grade to vent your toe drain up above the grade at the base of the wall. The material below the toe drain will need to be a low-permeable material to allow the water to move its way out from behind the wall.
- Attach tee fittings at 10-30 ft (3-9 m) intervals and direct water drainage through the wall face.

**If the base elevation of the wall is already at the lowest point, you can move the toe drain up above the grade at the base of the wall.**
- The material below the toe drain will need to be a low-permeable material to allow the water to move its way out from behind the wall.

**Vents to a lower grade**
- The design of this project really flows and because of some good planning, runs-off from the heavy rains directly through the wall face.

**Good landscaping doesn’t create water problems - IT SOLVES THEM**

**Plan**
- **Site Grading:** Prior to constructing the wall, evaluate the entire site to ensure proper grading. Direct water away from the walls to help manage surface drainage.
- **Concentrated Water Sources:** Identify concentrated water sources and take these into account during the design of the wall. Examples include:
  - Slopes above the wall
  - Roof drainouts
  - Lawn, landscape irrigation systems and outdoor faucets

**Ground Water:** Identify the ground water elevation, which is defined as water that occurs within the soil.
- Ground water movement must be prevented from coming in contact with the wall. If ground water is encountered, contact your local engineering professional to ensure that water has been accounted for in the design.

**Design**
- Water can be managed in two ways, surface run-off and in-wall drainage.

**Surface Run-Off** is handled by site grading and incorporating better and drainage ditches (swales) to handle the water before it gets close to the wall. In-Wall Drainage is meant for incidental water only and includes the following:

**Wall Rock**
- Use wall rock in the block cores and behind the wall to ensure in-wall drainage. The wall rock should extend 12-15 in (300-400 mm) behind the wall.

**Toe Drains:** To prevent drains from being trapped behind the wall and building up hydrostatic pressure. For this reason they must be positioned at the lowest point possible to allow the water to flow to daylight.

**FACT:** 90% Of Wall Failures Are Caused By Improper Water Management**

**Irrigation Systems:** When irrigation systems are used they should be designed and installed to perform irrigation in a controlled and reasonable manner.
- The system should incorporate planning and equipment to prevent over irrigation that could saturate the soils behind the retaining wall.
- Allan Block recommends that all sprinkler heads and piping be installed 10 ft (3 m) behind the wall to prevent problems associated with broken lines or faulty sprinkler heads.
- Even with relatively flat grade above the wall, berms and swales should be utilized in the event of over irrigation. This will prevent surface water from ponding above the wall.

**An outdoor faucet can also cause problems if it leaks or is accidentally left on, creating a water build-up behind or below the wall.**

**Build**
- Always build on solid ground. Check the base trench before you place your wall rock and install your first course of block. Any soft or saturated soils must be removed and replaced with additional wall rock.
- During wall installation temporary grading must be in place to ensure water will not be draining towards the construction area. Constructing and maintaining temporary slopes and berms daily will prevent the on-site soils from becoming saturated. Use a sheet of poly or tarps to cover stock piled backfill to prevent saturation.

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*"Great Britain might be the greenest place on the planet", says Hughes. "If the base elevation of the wall is already at the lowest point, you can move the toe drain up above the grade at the base of the wall. The material below the toe drain will need to be a low-permeable material to allow the water to move its way out from behind the wall."

*The contractors for this project follow the Plan, Design, Build process. All their first meeting with the clients they viewed what the homeowners, the Koes, described as their perfect land. They worked to develop the entire site with a "surrounding landscape space", said Mrs. Koe. Using their notes from the site visit and their many years of experience, the contractors prepared a detailed site plan. Water management details were incorporated into the plans. The challenge at the site was water management. The Koes wanted a large paved area immediately in front of the house. Run-off from the roof would drop onto the new paved patio. Run-off from the roof would then the contractor will see the problem. Where and could not be diverted where ground water movement must be prevented from coming in contact with the wall. If ground water is encountered, contact your local engineering professional to ensure that water has been accounted for in the design.*

*"Contractors working in the Pacific Northwest are always thinking about water. "

*"Ground water movement must be prevented from coming in contact with the wall. If ground water is encountered, contact your local engineering professional to ensure that water has been accounted for in the design."*/
**Construction Tips for Proper Water Management**

**Use the right Wall Rock**

- To prevent in-wall drainage, you should choose a wall rock that is fairly fine of the grained material flow. The Wall Rock, placed in and around the block on every course, will allow incidental water to filter down and work its way out from behind the wall.

Wall Rock makes compaction easy and helps in the installation of the drainage. The Wall Rock is meant for incidental water only and acts like a filter, keeping the fine-grained soil from blowing through the face of the wall.

**When do I need in-wall drains?**

Follow these rules of thumb:
- All walls taller than 4 ft (1.2 m)
- Walls with poorly drained soils
- Vertically aligned walls
- Trenches beneath the wall
- On multi-tiered and terraced walls
- All commercial and municipal projects

**Design**

Water can be managed in two ways, surface run-off and in-wall drainage.

- **Surface Run-Off** is handled by site grading and incorporating berms and drainage ditches (swales) to handle the water before it gets close to the wall.
- **In-Wall Drainage** is meant for incidental water only and includes the following:
  - Lawn, landscape irrigation systems and outdoor faucets
  - Roof downspouts
  - Driveways that slope towards the wall

**Plan**

- **Site Grading** - Prior to constructing the wall, evaluate the entire site to ensure proper grading. Direct water away from the wall to help manage surface drainage.
- **Concentrated Water Sources** - Identify concentrated water sources and take them into account during the design of the wall. Examples include:
  - Slopes above the wall
  - Roof downspouts
- **Lawn, landscape irrigation systems and outdoor features**
- **Ground Water -** Identify the ground water elevation, which is defined as water that occurs within the soil. Ground water movement must be prevented from coming in contact with the wall structure. If ground water is encountered, contact your local engineering professional to ensure that water has been accounted for in the design.

**Vent to Daylight**

- **All commercial and municipal projects**
- **All walls taller than 4 ft (1.2 m)**
- **Walls with poorly drained soils**
- **Vertically aligned walls**
- **Trenches beneath the wall**
- **On multi-tiered and terraced walls**
- **All commercial and municipal projects**

**Ventricles**

- **The preferred method places the toe drain in the face of the wall.** To ventilate the toe drain up above the grade at the base of the wall, the material below the toe drain will need to be a low-permeable granular material like gravel. To vent the toe drain, add the gravel to a depth of 6 in. (150 mm) above the base of the wall. This will prevent surface water from ponding above the wall.

**Build**

- **Always build on solid ground.** Check the base trench before you place your wall rock and install your first course of block. Any soft or saturated soils must be removed and replaced with additional wall rock.
- **During wall installation temporary grading must be in place to ensure water will not be draining towards the construction area.** Constructing and maintaining temporary slopes and berms daily will prevent the on-site soils from becoming saturated. Use a sheet of poly or tarps to cover stockpiled backfill to prevent saturation.
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Build a pond with the Courtyard Collection

Enhance your flower garden with a beautiful pond using the Courtyard Collection. With this flexible system you can build a pond without any special tools or materials and without splitting blocks.

1. Lay out the location where the pond will be. Mark the position of the liner that is being used. We recommend a 6 ft diameter plastic liner (1.8 m).
2. Excavate the area outside the liner 3 in. (75 mm) and 8 in. (200 mm) wide. Fill the trench with wall rock, level and compact.
3. Install the first 2 courses of York block at the same time to ensure proper alignment. Check the blocks for level and proper circumference of the circle. Stack additional courses to the desired height.
4. Place the liner inside the ring of blocks. Position the Wall Caps and glue them down with concrete adhesive. This will lock the blocks together and prevent unwanted disassembly.
5. Add decorative rock and accessories. For more detailed instructions see How-to sheet #280.

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