

PERMEABLE PAVING AIDS IN SUSTAINABLE PORTLAND LANDSCAPING



Like many sustainable Portland landscaping options, permeable pavers create a “win-win” situation. They can [solve drainage issues for homeowners](#) while also benefiting the city as a whole by decreasing watershed pollution. In this article we focus on how homeowners can benefit from the convenience of permeable pavers as a solution to drainage issues, especially when used as a construction material for driveways and pathways. We also note some issues with permeable pavers, so homeowners can decide if this is the best hardscaping answer for them. First, however, we discuss how permeability affects our community as a whole.

Permeability, Portland, and Pollution

Permeable pavers are popular among ecologically minded Portland landscaping companies because they help slow the flow of rainwater into city storm sewers. This is important in the Rose City, first because our sewer system does not isolate sewage from stormwater. Portland’s 878 miles of combined sewer/stormwater pipes must handle the 42 inches of water that our soggy city sees in the average year. Prior to 2011, when the Big Pipe project was completed, Portland averaged 50 combined sewer overflows (CSOs) per year, when heavy rains sent raw sewage into the Willamette. Nowadays, there are only four overflow events annually. The more permeable surfaces in Portland, the more stormwater that will drain directly into the ground, and the less water in the combined sewer system. As homeowners and businesses opt for permeable pavers, they are doing their part to minimize the chance of CSOs.

Permeable pavers also reduce the amount of road pollutants that are deposited into local lakes and rivers. Stormwater runoff is pregnant with oil, heavy metals, and other toxic materials picked up from road surfaces. Non-permeable

surfaces send sheets of this tainted water into the city’s 58,000 storm drains. Permeable pavers can help by containing and slowly draining storm water directly down into the earth. A well-made paver foundation will include six to nine inches of underlying gravel as a minimum. Rainwater pools in the nooks and crannies between gravel bits until it drains into the soil below. Some paver patio designs also include fast-filtering sand or crushed gravel to further fill spaces between gravel and paver stones. As rainwater trickles through the gravel and sand, pollutants are filtered out.





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How Portland is Tackling Stormwater Runoff

As development grows in our urban areas, the need to reduce and mitigate rain and storm runoff intensifies. Streets, buildings, and parking lots cover the ground, and keep rainwater from seeping through. In addition to carrying pollutants, runoff is also responsible for erosion and flooding that harm properties as well as wildlife habitats.

Permeable pavers are gaining popularity in commercial applications, partially because they can contribute to LEED certification. The City of Portland has added special green drainage dry pools around the city. These concrete containers allow runoff to percolate into the earth rather than entering storm drains. Overall, Portland uses Eco roofs, green streets, and other infrastructure to manage rain runoff. According to USA TODAY, over 50,000 Portlanders have disconnected their downspouts. Portland also has rain gardens on over 300 roofs. We invite you to learn more about [drainage solutions](#) specifically for Portland-area homeowners.

Permeable pavers do their own part to improve Portland's stormwater drainage. The more permeable hardscaping, the more rainwater absorbed by soil, and the fewer pollutants that are sent from the road to the river. That's the big picture. But permeable pavers are also beneficial from the individual homeowner's standpoint, as they offer a beautiful, long-lasting solution to drainage problems.

Permeable Pavers for Driveways and Pathways

The [driveway is an important component](#) of any property. It must be strong enough to support the weight of several vehicles. While concrete is a very common driveway construction material, concrete driveways shed enormous amounts of water directly into storm sewers.

Many homeowners have found permeable pavers to be an eco-friendly way to eliminate excess rainwater. Another advantage of pavers is that they can be repaired easily. Concrete driveways are prone to cracking. If cracks appear in permeable paver stones, they are relatively easy to pop out and reinstall.

With that said, our experience as Portland landscapers has taught us that permeable pavers are not ideal for driveways that slope down to the house, because then water can percolate through underlying soil and run toward the home's foundation. Permeable pavers work better for flat driveways, and those that slope away from the home.

Permeable pavers can also create lovely pathways. Really, any hardscaping surface may be constructed with permeable pavers, but we don't generally recommend this approach for patios, as the gaps between the pavers will not always provide a flat firm surface for furniture and the aggregate in the gaps can sluff out or promote weed growth. [Read on](#) to learn more about driveway design options, helpful tips and answers to frequently asked questions.

Permeable Paver Considerations

- Permeable pavers cost roughly 12 to 15% more per square feet than regular driveway pavers. This is primarily because it takes more time to prepare the gravel/sand base. Additionally, the materials used in permeable paving are more expensive than concrete or asphalt.
- Pavers do feature gravel in the gaps between stones, which some people don't like.
- Dirt may collect in between pavers, inviting weeds. Maintenance may be required to keep a permeable surface weed-free.
- Permeable and porous pavements are also available.



Permeable Paver Material and Design Ideas

There are multiple paver styles, colors and shapes to choose from. Various paver patterns can complement your design layout; one popular choice is a honeycomb design. Additionally, permeable paver systems can drain to an underlying water-collection system. You can even use permeable pavers along with a water-capture device to facilitate the reuse of rainwater for irrigation. The sky is the limit when it comes to getting creative with design choices, and our Portland landscapers can answer any drainage design questions you may have.

Here are a few tantalizing permeable paver design options:

1. *Permeable clay pavers*, to resonate with traditional brick buildings while still allowing exceptional drainage.
2. *Vegetated permeable paver systems* pair preformed concrete or plastic modular units with plants. Grasses and other groundcovers are seeded between pavers, to create a green yet durable effect.
3. *Porous Pavement* is difficult to distinguish from traditional asphalt, yet it allows water to penetrate directly into the ground.

4. *Grasscrete* creates drivable grass by providing a solid surface allowing you to drive on your lawn without sinking. This is an ideal option for tight inner city front lawns when inviting guests over.

Additional Benefits of Permeable Pavers

- Decrease mosquito-borne diseases by minimizing pooled water (favorite mosquito breeding grounds).
- Decrease urban heat by adding more green spaces, particularly with vegetated permeable paver systems.
- Reduce the need for large storm water management structures on site.

Contact Landscape East & West

Here at Landscape East & West we are experts at hardscaping construction. To learn more, check out some of our previous articles on [driveway design](#). If you are thinking about renovating your driveway, or are interested in learning more about using permeable pavers in your landscaping project, don't hesitate to call us today. Our knowledgeable and professional staff will be happy to go over any questions you might have and walk you through the estimate and design process.



About the Author:

Steve Stewart is the Owner/President of Landscape East & West, award-winning Portland landscaping professionals. He oversees the day-to-day operations of the company. Landscape East & West is a leader in the Portland Metropolitan area in creating unique landscape

designs and executing expert construction and maintenance with care and pride.