



Frank Frazier, Belmont Stormwater Working Group

Is it Time to Replace Your Driveway?

Is your asphalt driveway heavily cracked? Does it have deep ruts or dips? If so, it needs more than a new layer of asphalt to fix it. The deeper base layer is failing and needs to be replaced to create a solid foundation for the new pavement. Today, you are not limited to a choice between asphalt or concrete pavement. Other materials are available which can make the driveway not only more attractive but also environmentally friendly.

Replace it With Pervious Pavement

A driveway paved with pervious (or porous) materials has several benefits in addition to just looking good. First, pervious pavement reduces stormwater pollution. Unlike traditional pavement, water passes through it into a gravel base layer. This layer filters the water before it flows into the soil underneath. Second, the base layer temporarily traps stormwater which reduces the volume and velocity of runoff which in turn helps reduce local flooding .



Examples of Pervious Pavement

- **Pervious concrete** (pictured above) is similar to conventional concrete, but it's made with gravel of uniform size and the usual smaller pebbles and grains (called fines) are left out.
- **Pervious asphalt**, like pervious concrete, is also made without fines typically included in the mix. Pictured to the right is a parking lot after a storm. The dry pervious area abuts a wet, conventional impervious asphalt area.
- **Paving stones** (called unit pavers) such as **brick, concrete** or **stone** installed with joints filled with sand allow drainage.
- **Plastic or masonry** open-celled pavers are laid down in a grid pattern and filled with permeable, uniform gravel or permeable soil planted with grass. Pictured on the right are brick paving stones and open-cell concrete pavers used together to create an interesting design.
- **Loose aggregate** such as **crushed stone** can provide porous pavement, but it's suitable only in light-traffic applications where it won't quickly be displaced, ground down, or mixed with organic matter.



Before Installing Pervious Pavement

Get an Expert Evaluation

After you decide to install a new pervious driveway, you need to know if your site is compatible with pervious pavement and if the project is "compatible" with your budget.

To do this, you need an expert contractor or engineer to evaluate your site and generate a cost estimate. Some of the technical factors taken into consideration are slope of the ground, underlying soil type and the condition of the soil near your driveway.

Get a Cost Comparison

Generally speaking, a driveway built with pervious pavement will cost more than one using traditional materials. However, this is not always true. When comparing costs, it's necessary to include all the structural elements in addition to the paving material. For example, if an impervious design on your site requires drains, pipes, catch basins and outfalls to manage runoff, a pervious pavement alternative may be cheaper. So when asking for a pervious pavement cost quotation, also ask for a quote using traditional building materials.

Save Labor and Do It Yourself?

If you have experience with landscaping projects of this size, you may want to do it yourself instead of hiring a contractor. However, it's still important to get an engineering evaluation of your site.

After Installing Pervious Pavement

Pervious pavement is effective only if the tiny "pores" or open pathways are free of silt and dust to allow water to pass through. To prevent pervious pavement from clogging up, the following practices are recommended:

- Minimize use of salt or sand during winter months
- Keep landscaped areas well-maintained and prevent soil from being transported onto the pavement.
- Clean the surface using a vacuum sweeping machine 2 to 4 times per year.
- For paving stones, periodically add joint material (sand) to replace material that has been transported.
- After storms, check the surface to ensure that it is draining properly.
- Do not reseal or repave with impermeable materials.
- Inspect the surface annually for deterioration.
- Grass pavers may require periodic reseeded to fill in bare spots.

Visit Examples of Pervious Pavement Near Belmont

1. Hurd Field, Arlington, MA. - Description of a pervious pavement parking lot installation
<http://www.fbenvironmental.com/project/PorousPavement.html>
2. Short article about Thorndike Park, Arlington Ma
http://www.cenews.com/article/8423/runoff_remedy
3. Permeable paving project in Wilmington MA at Silver Lake
http://www.crwa.org/projects/bmpfactsheets/crwa_permeable_pavement.pdf

Information Resources

The EPA	http://www.epa.gov/region1/soakuptherain/learnmore.html
Building Green	http://www.buildinggreen.com/auth/article.cfm/2009/3/26/Pourous-Paving/
This Old House	http://www.thisoldhouse.com/toh/article/0,,20153708,00.html
Newton Conservators	http://www.newtonconservators.org/stormwater.htm
UNH Stormwater Center	Great source of technical information about pervious pavement in New England http://www.unh.edu/unhsc/ Dramatic Video – dumping 1500 gals of water on porous pavement in 5 minutes! http://www.youtube.com/watch?feature=player_embedded&v=ScsQYHMfabU