

Fancher, Steve, S. Townsen, et al. *Sustainable Infrastructure Alternative Paving Materials Subcommittee Report*. City of Portland, Bureau of Environmental Services, Oct. 2003. (Reviewed by Pamela Johnston)

In order to cope with urban water quality issues such as flooding, erosion, sewer issues and degraded stream systems, the City of Portland's Sustainable Infrastructure Committee has lately taken steps to enhance stormwater management. The high density of urban structures and pavement tends to increase runoff from streets, sidewalks, parking lots, and other impermeable surfaces, and has traditionally been handled by collecting and treating the water to prevent the problems listed above. This process requires many drains, pipes, and other structures for capturing flow, much of which will still end up downstream. The project in this report is geared towards alternative paving through which the water can pass, therefore decreasing costs and more effectively capturing stormwater excess.

The report refers to its three pavement methods as pervious, meaning “accessible or permeable.” Pervious paver block systems consist of concrete paver blocks with small gaps between them that drain stormwater into lower layers, and eventually soils, below. This method should be used only for low-use, low-speed traffic areas such as parking lots, private streets, and driveways. Pervious concrete mixes are made of porous materials that exclude fine particles, thereby allowing stormwater to pass through as in the block system. A pipe underdrain system may be necessary where soils don't infiltrate well. The same limitations of low-traffic usage apply here. The third and very similar method is the pervious asphalt mix, which leaves voids for flow but is made of an apparently more stable material. Pervious asphalt mixes are already used on highways by ODOT to reduce chances of hydroplaning.

Critique

There are several potential challenges that come to mind when reviewing these types of paving materials, like functionality of underground layers and maintenance of surface layers. If too much sediment builds up on these pervious shells, will they be unable to successfully drain stormwater from the surface? Alternative Pavement Report authors are quick to emphasize that monitoring will need to be done over a number of years on this project to ensure that these methods are safe, successful, and durable enough for long-term use. It seems that this project and others like it, if conducted on a large scale, could be assets to the city in protecting water quality and aesthetics.

http://www.cleanrivers-pdx.org/pdf/alternative_paving.pdf

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