

PERMEABLE PAVING...PAVEMENT THAT LEAKS!

As Landscape Architects & Site Planners, our everyday task is to develop the most ecologically compatible design using sustainable materials while balancing function with cost efficiency. We approach site development and storm water management with the goal to mitigate development impacts to land, water and air. This design strategy emphasizes the integration of site design and planning techniques that conserve natural systems and hydrologic functions on a site. Click on the following link for Low-impact Development (LID) criteria and strategies: http://www.lid-stormwater.net/permpavers_benefits.htm

One of the specific methods to help achieve this goal is to utilize permeable paving wherever possible. These pavement systems help reduce stormwater surface run-off, enhance the quality of water that eventually leaches into groundwater strata and reduce heat generated by traditional asphalt pavement. All permeable and porous pavements are designed to allow percolation or infiltration of stormwater through the surface into the soil below where the water is naturally filtered and pollutants are removed. Three types are:



PERMEABLE INTERLOCKING CONCRETE PAVERS (PICP) are typically concrete pavers with open joints between blocks. Permeable joints of sand and gravel allow water to pass around the paver as opposed to passing through the paver helping to reduce or eliminate "clogging" found in other pervious or porous systems. The pore spaces in the joints and underlying gravel base help trap sediment and oils, where they are broken down by microorganisms and rendered inert. Click on the following link for more information: http://www.icpi.org/design/permeable_pavers_faq.cfm



POROUS ASPHALT is a form of bituminous paving mixed at conventional asphalt plants, but fine (small) aggregate is omitted from the mixture. The remaining large, single-sized aggregate particles leave open voids that give the material its porosity and permeability. Under the porous asphalt surface is a base course of further single-sized aggregate. If contaminants were on the surface at the time of the storm, they are swept along with the rainfall through the stone bed. From there they infiltrate into the sub-base so that they are subjected to the natural processes that cleanse water. Click on the following link for more information: http://www.pavegreen.com/water_quality.asp



PERVIOUS CONCRETE is a form of concrete pavement without the fines in the mixture. In pervious concrete, carefully controlled amounts of water and cementitious materials are used to create a paste that forms a thick coating around aggregate particles. Both the low mortar content and high porosity reduce strength compared to conventional concrete mixtures, but sufficient strength for many applications is achieved to bear frequent traffic and is universally accessible. Click on the following link for more information: <http://www.perviouspavement.org/>

Click on the following link to read more about the comparison of these drainage systems: <http://www.icpi.org/myproject/PICP%20Comparison%20Brochure.pdf>