

Pervious Concrete Key to Environmental Sensitivity in NJ

Moorestown, NJ - When the designers and owners thought about developing an existing farm into a County agricultural center, a primary objective was environmental sensitivity. That's why they chose to use concrete, and specifically pervious concrete, when constructing the parking lot.

The design engineer, Camp Dresser & McKee, developed a design which utilized a combination of paving - 3,000 yards of regular concrete was placed in the driving lanes, 550 yards of pervious concrete was placed in the parking stalls, and 1,200 yards of cast-in-place "grass-crete" was placed and planted in the overflow parking areas.

The concrete was supplied by L&L Redi Mix of Southamp-
ton, NJ, and placed by Nova Crete of South Amboy, NJ. Both L&L Redi Mix and Nova Crete were trained and certified as Pervious Concrete Technicians in accordance with the National Ready Mix Concrete Association (NRMCA). "This was a win-win for everybody involved," commented Larry Gerber, co-owner of L&L Redi Mix. "The County now has a first-rate community agricultural facility that is both beautiful and environmentally sensitive with the use of these porous paving systems. This parking lot will last for many years with very little maintenance needed."



Conventional concrete is used throughout New Jersey, but pervious concrete is just starting to be introduced to the state. Pervious concrete is defined by the NRMCA as a "no fines" concrete. Like conventional concrete, pervious consists mostly of portland cement, water, and aggregates. Its unique porous quality is achieved by eliminating fine aggregates, such as sand, from the mix. The exclusive use of coarse aggregates such as gravel or crushed stone creates air voids throughout the concrete. Water is therefore able to pass directly through the pavement and into a stone recharge bed and soil below the concrete rather than collecting on or running off the surface. In this way, pervious concrete can greatly reduce stormwater runoff and its associated problems, while still providing the strength and durability of concrete!

Because of the void structure in the pervious concrete and the porosity of the stone recharge bed and soils beneath, freeze/thaw damage is eliminated. In northern climates such as New Jersey, freeze/thaw is a concern. "Studies have shown that the new pervious concrete mix designs can withstand the cold while performing as designed," said Manny Cardoso, owner of Nova Crete. "With proper



training and equipment, we were able to construct the parking lot quickly with a uniform finish and high permeability. The County and all involved were pleased with final product." The County plans to use this facility for agricultural exhibits, tours, fairs and other community activities.

When additional parking is needed, automobiles can park on the surrounding grass without causing damage. The contractor constructed a cast-in-place concrete grid system that can be planted with grass. Water drains naturally into the soil, erosion is controlled, yet the strength is in place for the occasional vehicular use.

The combination of pervious concrete and porous "grass-crete" was an accepted Best Management Practice as defined by the New Jersey Department of Environmental Protection, as well as the Burlington County Conservation District. "We are excited about this product [pervious concrete] and the future it holds for the State of New Jersey and believe we will see much more pervious concrete specified as engineers and developers see the potential land savings and environmental benefits," said Gerber.

