Williamsburg, VA: There is a growing concern over the depletion of our nation’s most precious resource, drinking water, and the ever increasing regulatory control of storm water management. The challenge for designers is trying to meet these shifting environmental needs while also meeting the needs of both the owner and the community at large. In the Chesapeake Bay area, storm water runoff is the biggest new source of pollution and is often linked to increasing amounts “impervious surfaces” such as conventional parking lots.

Prime Retail, one of the largest developers of outlet centers in the country, unveiled its 115,000 square foot, $55 million expansion, Prime Outlets—Williamsburg, VA in 2008. At a total gross leasable area of 456,922 square feet it is the region’s largest outlet shopping destination offering 120 stores to choose from.

Parking on the Pond

Storm water runoff was a major factor influencing the design of this expansion and the team at Landmark Design Group recognized early on the potential to not only address specific hydrologic concerns, but at the same time increase the amount of rentable space for the owners. A unique storm water management system was devised utilizing an existing detention pond paved over with pervious concrete. “Parking on the Pond”.

Some of the filtered rainwater is "harvested," to irrigate trees, shrubs and flowers that dot the parking-lot landscape. To curb localized flooding, heavy rains are piped to the paved-over detention pond which had been fitted with plastic crates - hundreds of them, lashed together with plastic zip-ties - that will store and then slowly release excess water over time. This storm-management system covered with pervious concrete, will also be used as an auxiliary parking lot.

The project team sought a balance between two forces frequently at odds with each other: economic development and environmental protection. Finding and investing in such a green compromise, said state Sen. Thomas K. Norment, R-Williamsburg, "is not always a characteristic you see in the development community."

The team at Prime Outlets and Landmark Design Group relied heavily on the ready mixed concrete industry to help prove their case at the James City County Planning Commission meetings. NRMCA’s National Resource Director—Phil Kresge teamed up with VRMCA’s Director of Industry Services—Keith Beazley to provide support and technical assistance to the design team. Stated clearly in the James City County Planning Commissions special use permit staff report was the statement “Additionally, improvements to existing BMP facilities and extensive use of pervious concrete further environmental goals identified in the comprehensive plan.” This statement indicating the Commissions acceptance of pervious concrete technology as a fundamental reason for the project gaining approval is a strong endorsement for designers considering pervious pavements.

Project Details

The ready mixed concrete supplier, Titan Virginia Ready Mix, a subsidiary of Titan America supplied close to 8 acres of pervious concrete and almost 4 acres of conventional concrete to the project. The contractor placing the pervious concrete was MaGruder Construction of Sanford, FL an NRMCA certified pervious concrete contractor.

A representative of Prime Retail described the fact that utilizing the existing detention pond as an underground storm water storage system and paving over it with pervious concrete added 40% more rental space to the project which made the decision to use pervious concrete a “NO BRAINER”.

Submitted by Keith Beazley—Virginia Ready Mixed Concrete Assoc.