

Pervious Concrete: The Environmental Solution

Mississippi Regional Housing Authority, VIII Moss Point, MS



Project:

Mississippi's Regional Housing Authority No. VIII just completed an office building in Moss Point, MS. This building provides offices for support staff who administer conventional and Section 8 housing programs. Both programs help to provide quality, affordable, safe housing and encourage self-sufficiency. This facility is the location where applicants register, make payments, and receive training associated with the programs. It is located off Hwy 63 in the middle of a 70 unit housing complex.

Architect:

Walker & Associates

General Contractor:

Apple Construction

Pervious Sub-Contractor:

U.S. Construction

Ready Mix Supplier:

Gulf Concrete



Moss Point is an urbanized area as designated by the Environmental Protection Agency. Any development or redevelopment in the area that disturbs an acre or more must comply with the storm water phase II program. This program includes post construction storm water management. Moss Point codes require the amount of storm water that flows off a newly constructed site not exceed pre-construction runoff conditions. The architect chose pervious concrete to help meet these storm water requirements and provide a safe alternative to a detention pond.

A detention pond posed huge liability for the housing authority because of the large number of children living around the facility. Potential problems of drowning, snake bites, mosquitoes, and just dealing with litter all contributed to the liability and discouraged construction of a pond. Pervious concrete was one part of a safe storm water management solution and provided a hard surface for parking.

The parking lot design included 10,800 square feet of conventional concrete paving and 11,000 square feet of pervious concrete paving. Both pavement types were built six inches thick on top of six inches of compacted select fill material. Pervious concrete was specified for parking spaces adjacent to the building and around the perimeter of the site. Conventional concrete was used for the entry drives and the driving lanes that separated the pervious concrete.

Cost data indicates that pervious concrete paving comes with a premium price of about 50% more for installation and materials over conventional plain jointed concrete paving. However, this dual purpose paving provides a substantial savings when compared to installing detention ponds that create excess liability and take up valuable land.



Pervious concrete is a mixture of gravel or stone, cement, water, and sand. Using little or no sand in the mixture creates open cells that allow water and air to pass through. It provides an excellent earth friendly paving material for designers who need to manage storm water or to pave around trees. Pervious concrete is earth friendly because it models natural ground cover by filtering water through. Pollutants picked up on the surface of the paving are filtered through the open cells and the underlying supporting soils. This allows cleaner water to replenish our ground water or flow into our lakes and streams.

Some cores and beams have been tested on Mississippi projects. These tests reveal a void content ranging from 21 to 15% with compressive strengths ranging from 1350 to 1875 psi respectfully. An average flexural strength of 345 psi has been noted. Data depends on the mixture design and construction methods. Void and strength data should be determined based on specific mixtures and placement techniques.



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