

Traffic Will Travel on "Green Streets" in Oregon Community

When developers were designing Pringle Creek Community in Salem, Oregon, they decided to make it as environmentally friendly as possible. They are building eco-friendly houses in the 32-acre sustainable living community. They designed bioswales and rain gardens which use vegetation to absorb water and quickly return it to the water table.

And they laid out the community so residents could easily walk to shopping and therefore minimize environmental impact. Designers took the "green" plans one step further by designing one of the nation's first porous asphalt streets for a subdivision.

Oregon builders have already been successful with porous asphalt parking lots as a means to control stormwater runoff. The largest project to date was

a 40-acre porous lot located next to the Columbia River in Portland.

The porous asphalt streets were a perfect fit for this new community in the Willamette Valley. "With 7,000 feet of 'green streets' and 2,000 feet of 'green alleyways,' Pringle Creek is the nation's first full-scale porous

The finished porous streets absorb rainwater and allow it to percolate through the stone catch basin below and into the aquifer.





A geotextile fabric was laid on top of the porous asphalt pavement to keep fines out of the road structure during construction of the community.



The crew from North Santiam Paving lays the 2-inch pervious wearing course for the pavement.

asphalt pavement project," said Jim Huddleston, executive director of the Asphalt Pavement Association of Oregon. "The use of porous pavement within the community will create a healthier, more sustainable environment with less water pollution and runoff, saving at least 90 percent of the rainwater and returning it to an aquifer."

North Santiam Paving, of Stayton, Ore., performed the excavation work and paving for the unique streets. The base course was composed of an 8-inch layer of pit-run stone, topped by 10 inches of porous base rock (AASHTO #2), and finally 2 inches of a fine-grade stone (AASHTO #57). This was covered with a 3-inch asphalt-treated permeable base.

Road withstands winter construction

The paving crew then covered the entire base lift with fabric to keep construction debris out of the street. The new road carried earth-moving equipment and other traffic connected with new home construction that continued through the winter. Unlike a typical pavement, these green roads are designed so that water will run through the top layers and percolate through the stone below and eventually be absorbed into the aquifer.

The contractor washed and vacuumed the fines out of the pavement before laying the final lift of 2-inch pervious wearing course with a 3/8-inch top-size aggregate. The wearing course utilized a polymer modified PG 70-22 grade binder to reduce drain

down and enhance long-term durability. The surface course was laid from May 25-June 2. River Bend Sand and Gravel produced the porous asphalt mix.

"This was a unique and challenging project," said Ron Boschler, president of North Santiam Paving. "We had done a lot of projects using open-graded design, but nothing where the water is supposed to drain through the entire street, like this porous pavement. The pavement held up well under the construction traffic. The paving part of the job was very similar to an ordinary paving job."

To avoid joints, the crew paved the road in a single 25-foot-wide pass, and narrowed to 12 to 14 feet wide for the alleys. The small amount of water runoff from these green streets will be absorbed in a stone-lined ditch. Plant-filled bioswales located next to the ditch will cooperate in absorbing the water and returning it to the water table.

In November, the "green street system" passed an early test with flying colors. The Salem area received more than 15 inches of rain, flooding many regional streets and sidewalks as a result of clogged storm drains. In contrast, Pringle Creek's streets and runoff system easily absorbed the downpours.

Pringle Creek Community will have 180 homes in a variety of designs, sizes, and price ranges. The community will also have non-profit educational programs that will showcase the environmentally friendly aspects of the development including the unique streets.

"We are excited about the success of our green street system," said Don Myers, president of Sustainable Development. "The use of these sustainable materials has allowed our project team the ability to design and build an elegant solution to a complex problem. The use of porous pavement emphasizes our holistic approach to maintain ecological and aesthetic benefits to create healthy homes and healthy lifestyles for all residents of the community." **HMAT**