



LOW IMPACT DEVELOPMENT (LID) SAMPLER

August 2007

The Low Impact Development Sampler is a selection of LID projects in eleven of the Upper Susquehanna Coalition's fourteen member counties (as of 2003). The Sampler was created to:

- Show the variety of LID techniques already in place in the region.
- Prove that LID works in northern climates.
- Provide enough financial and technical information so that the reader can decide if that practice will work for him/her.
- Encourage more use of LID techniques so that rainwater becomes a resource rather than a costly and dangerous burden.
- Present the information in an easy-to-read format.

We hope you enjoy this booklet and can use some of the ideas it contains.



***Editor: Jennifer Green Fais, Principal Planner
Layout assistance: Susan M. Cratsley, Exec. Assistant
Southern Tier Central Regional Planning
and Development Board***



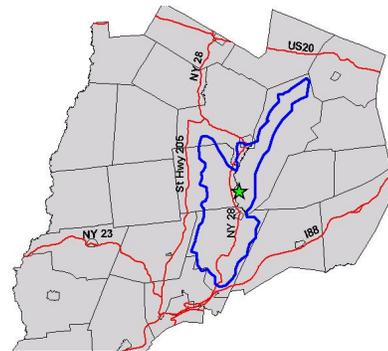
***In conjunction with the
member counties of the:
Upper
Susquehanna
Coalition***

***Funded in part by the USEPA Watershed Initiative and
Section 604(b) Clean Water Act funds***

Otsego County, NY Brewery Ommegang Green Roof and Permeable Pavement

Project Location: 656 County Route 33/NY Route 28

Brewery Ommegang is a craft microbrewery located south of Cooperstown, NY in the Susquehanna River headwaters. The brewery specializes in crafting authentic Belgian-style ales and has received numerous accolades nationally and internationally from the brewing community for their high quality and unique taste.



The Brewery Ommegang site drains to the headwaters of the Susquehanna River.

As demand has increased, an expansion of facility and production capabilities is required. Brewery Ommegang is developing construction documents for this expansion with groundbreaking slated for fall of 2007 or spring of 2008. The new facility will provide an additional 20,400 SF to the current 9,000 SF building. A majority of the new building will house packaging lines and warehousing. USGBC (United States Green Building Council ID# 90113581) and will be seeking LEED Certification (Leadership in Energy and Environmental Design) for the new facility.



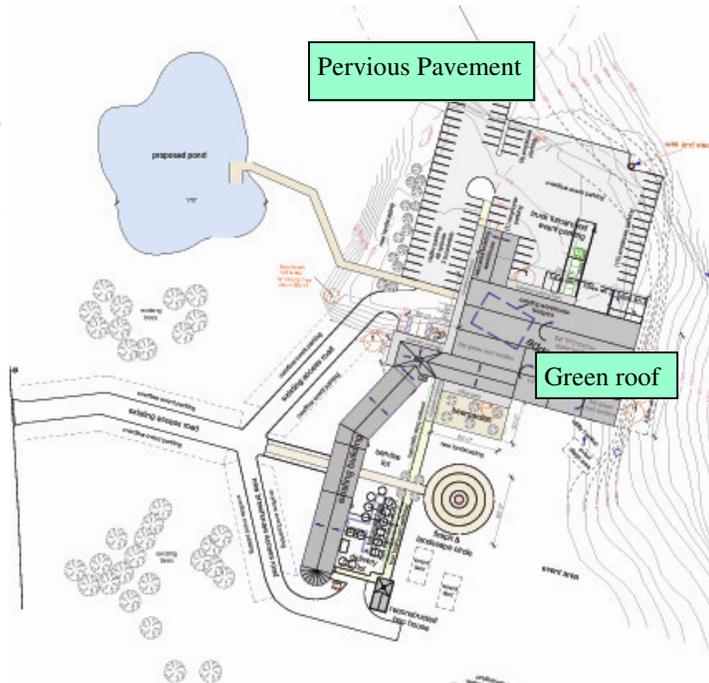
The expansion of the Brewery facilities will include innovative stormwater management techniques.

Aside from utilities management, use of organic brewing ingredients, optimal use of natural daylighting to minimize electrical usage, and wise materials-of-construction selection, Brewery Ommegang will also be pursuing the following sound environmental projects:

Green roof design on a portion of the facility.

Development of a SWPPP (stormwater pollution prevention plan) for low impact stormwater management of the site.

Feasibility study to investigate WWT (wastewater treatment) options including the biogas recovery from the effluent stream.



The Brewery Ommegang expansion site plan.

The green roof design and on-site stormwater management techniques are the focus here.



Scale model of Brewery Ommegang with a "green roof."

A 4,800 SF section of the roof situated over the new packaging area will be of a green roof design. Appropriate vegetation for the climate will be planted. In addition to providing added insulation and stormwater management, the green roof will also serve as an obvious sign of Brewery Ommegang's commitment to sound environmental practices.

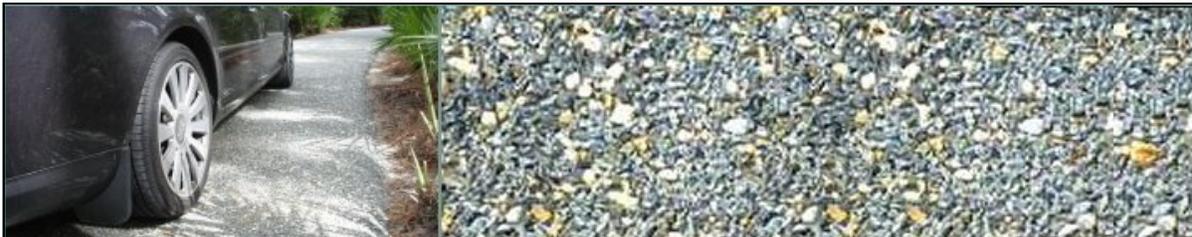
Stormwater management

The new facility will add on 15,600 SF of solid roofing and about 50,000 SF of roadwork and pavement. An engineering plan is underway to evaluate options for minimizing the impact of these areas in the event of a “100 year flood”. Pervious pavement (eg., Flexi-Pave™) for walkways and use of a natural onsite depression to percolate water slowly into the groundwater is being investigated.



Pervious pavement is highly permeable while maintaining structural strength..

According to Flexi-Pave™ information, their paving material is wire-free SBR recycled tire granule and nominal-sized aggregate formed and bound together with a binding agent that has the same elastic qualities as rubber. It cures in 24 hours. Because of this composition, the material is highly permeable while maintaining structural strength. Flexi-pave™ is also self-cleaning; thus, is not clogged by sediment, a drawback of other permeable pavement. Brewery Ommegang is considering pervious pavement for its parking areas and/or walkways.



The pervious paving material looks like traditional concrete pavement.

ESTIMATED CONSTRUCTION COSTS: \$172,800

Green roof @ \$21 per square foot for 4800 SF: \$100,800

Flexi-pavers @ \$8 per square foot for 9000 SF: \$72,000

ANNUAL MAINTENANCE COSTS:

Plants need to be maintained/replaced periodically. Flexi-pave™ is warranted for five years. Some repair may be needed in ten years.

\$4000 from the EPA Watershed Initiative LID Project was used for design work at this Demonstration site.