

Background: In recent years, Bryn Mawr College, not unlike many other institutions, faced increased local regulation to include extensive stormwater management controls as part of major construction projects. This often resulted in the installation of expensive and marginally effective underground basins and tanks.

A More Innovative and Collaborative Approach: By taking a macro level approach to stormwater management, the College looked beyond its campus borders to consider what nature was already providing in terms of existing drainage systems. There was a logical location on campus for a stormwater retention pond, but it would actually collect the majority of its stormwater runoff from off campus. This reality led to collaboration with local Township officials and environmental agencies, and eventually resulted in a \$150,000 "Growing Greener" grant from the Commonwealth of Pennsylvania and an exemption from the Township on the need for isolated stormwater control systems on future projects.




Creative Design Features: The actual design replaced a failing gabion wall with an earthen embankment to retain the stormwater runoff and create the pond. A small fore-bay was constructed to allow larger particulate matter to settle out prior to the water entering the main pond.

This smaller area can be cleaned without needing to drain the entire pond. Larger volume, low frequency storms bypass this fore-bay to avoid re-suspending any solids and delivering them into the main pond.



Under construction - May 2001

In the pond itself there is a perimeter "bench," not more than 18" deep, to support wetland plants. These plants were selected to organically consume pollutants out of the water. After the water enters the main pond, it slowly makes its way to a multi-faceted outlet structure. The primary discharge draws water from several feet below the normal water surface to allow cool(er) water to exit the pond and re-enter natural downstream creeks. Below the primary outlet is an inlet pipe and system to allow for the withdrawal of water for irrigation. The final component of the outlet structure is a valved discharge two feet from the bottom of the pond. This allows the College to regulate the level of the pond for impending storms or completely drain the pond for maintenance.



Impressive Benefits: The pond has across-the-board exceeded the College's most optimistic expectations.

It has become a favorite landscape feature, which in the unanimous opinion of students, faculty, staff, trustees, and alumnae has added immeasurably to Bryn Mawr's beautiful campus.

It has proven to be an effective stormwater management instrument, allowing better control over the flow of water into downstream creeks during flood conditions. Pollutants such as suspended solids, phosphorous, nitrogen, and trace metals are removed before the water re-enters the natural drainage basin.

The pond has been embraced as a natural outdoor laboratory by faculty and students. Students study the topography, planning, geology, and biology of this new natural resource. It is also used as a demonstration project for other engineers, institutions, land owners, and environmental organizations throughout the region.

The pond holds the potential to irrigate the College's two principal athletic fields.

The entire process of creating the pond has improved public relations among the College, Pennsylvania's Department of Environmental Protection, Lower Merion Township, and local environmental conservation agencies. It is a shining example of senior administrators, facilities professionals, students, faculty, trustees, township officials, and local environmentalists all working together collaboratively toward the common benefit of all.

"Bryn Mawr College was really innovative and ahead of the times when they built their stormwater wetland basin. ... They embraced the idea of looking at stormwater as a resource."

- Dominic Rocco, Pennsylvania DEP

"The pond is an invaluable outdoor laboratory in which students...gain hands-on experience with real water management issues, including water quality, nutrient cycling, and carbon storage."

- Blythe Hoyle, BMC Geology faculty

"Their innovative design of a stormwater management pond and the collaboration they fostered with the state and county, as well as Lower Merion Township, set a positive example for other institutions...to emulate."

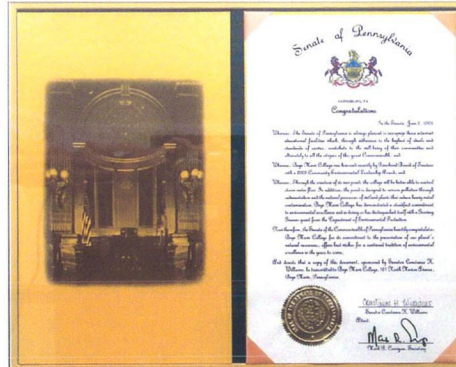
- Robert Duncan, L.M. Township Manager

"From the design aspect, Bryn Mawr College is incorporating some unique features that make this project stand out. First, it is creating a stormwater pond in the headwaters of Mill Creek, that will reduce pollutants ... Second, it stores and uses runoff for irrigation. The concept of capturing the stormwater, and then returning it to the water cycle is both innovative and practical. Not only are they reducing the runoff (thereby protecting stream banks), they are also reducing usage!"

- Robert Traver, Villanova U. Professor



The pond fore-bay



Citation of Congratulations from the Senate of PA

For more information, visit:

www.brynmawr.edu/facilities

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Stormwater Management at Bryn Mawr College



In 2002, Bryn Mawr College, a small liberal arts college west of Philadelphia, launched an innovative and collaborative approach to managing stormwater on its campus. It all started with a new paradigm of seeing storm water as a beneficial resource rather than a waste bi-product. It resulted in a beautiful water feature on campus, a source of irrigation for the college's playing fields, a natural outdoor laboratory for the science faculty and students, better quality and control of stormwater discharge into local streams, and improved collaboration among local and state environmental agencies and the College.