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Going Green With Stormwater Management May Save You Greenbacks

A savvy developer knows there is much more to the cost of stormwater management than simply digging a pond. A key factor that is often overlooked is the availability or cost of the land to be occupied by stormwater ponds. When stormwater management can be partitioned into smaller localized solutions or placed underground, opportunities arise to save money on land costs.

Most communities have relied upon conventional open stormwater ponds to address both water quality and rate control requirements for stormwater management. The standards that have evolved require the developer to bear the high costs of pond construction as well as maintenance. The recent trend to “go green” with Leadership in Energy and Environmental Design (LEED) initiatives and Low Impact Development (LID) techniques has left many wondering if stormwater management is going to get even more expensive.



The small localized nature of this raingarden typifies LID.

So what exactly is Low Impact Development and how can it be cost-effective?

The premise of LID is to treat stormwater runoff at its source through small localized options, such as infiltration areas and reuse storage alternatives, rather than treating it at a downstream location such as a regional pond. At its basic level, LID attempts to mimic existing surface and subsurface drainage patterns. The purpose of LID is to reduce the demand on stormwater infrastructure including storm sewer and stormwater ponds while replenishing groundwater in urban areas.

LID provides flexibility that is not available in conventional pipe-to-pond applications. A combination of LID solutions may work together to meet regulatory requirements in both commercial and residential applications. On a recent office redevelopment project, for example, there was simply no space on the property for conventional stormwater management. Designers were able to meet the watershed requirements with a green roof on the building and an underground cistern to capture runoff from the parking ramp. The cistern is the primary source for landscape irrigation, thus eliminating monthly watering bills.

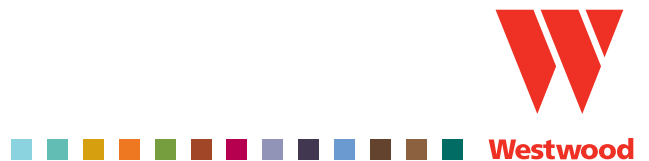


An underground infiltration system can be more cost-effective than conventional stormwater ponds, depending on land cost and availability.

LID can also facilitate more efficient use of land, so that areas intended for stormwater ponds may be developed to generate additional revenue. On a recent retail project, the team was able to provide another lot by designing an underground infiltration gallery beneath the parking lot. The gallery took advantage of the sandy soils on the site and freed up over an acre of land for an additional restaurant pad within the development. While the cost to construct the underground system exceeded the cost to construct a comparable pond, the revenue from the increase in leasable area, coupled with potentially lower maintenance costs, provided a sound return on investment.

Stormwater ponds may still make sense under certain circumstances, but LID can provide design flexibility and be cost-effective where land area is limited or exceeds a certain cost threshold. Commercial and residential developers will benefit by working with their design engineers to do a thorough analysis of stormwater management options.

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