



Properly managed turfgrass replaces grey infrastructure on urban properties and dramatically decreases nonpoint pollution.

Scoring water wins in urban landscapes



Water management and multi-functional green spaces are the Green Industry's indispensable contribution to the sustainability marketplace.

BY **MARK STEVEN APFELBACHER**

GREEN ROOFS. Green walls. Green building materials. Green building standards. Go to any trade show in the building trades these days and you'll see that everything at the show is green. But where does water management, in particular urban outdoor water management, fit into this ever-enlarging green picture?

In this case, it seems, it has taken another industry's capitalization on a new market to realize what the Green Industry is sitting on. Water management and multi-functional green spaces are the Green Industry's indispensable contribution to the sustainability marketplace.

Sustainable roots

Landscapers and lawn care professionals have been working with sustainability and water long before the U.S. Green Building Council (USGBC) was formed in 1993, well before the U.S. EPA's Energy Star label came around in 1992, and the professional Green Industry was a multi-million dollar industry before the first city recycling program emerged in Woodbury, NJ, in the 1970s.

Too date, however, much of our practice has focused on single-serving landscapes — spaces that serve primarily one purpose. This could be a lawn, a landscape, a park or a sports field. In these spaces the primary function is aesthetics or recreation, not infrastructure or related to civic engineered function. Single-serving landscapes as aesthetic and recreation components are in direct competition with the assumed superiority of grey infrastructure. Grey infrastructure includes building footprints, site utilities, parking lots and roads. Landscapes are perceived as a “second” to all improvements related to basic civic functions and land uses.

Landscape and lawn professionals possess and employ practical management strategies that relate to aesthetics and recreation “green” elements as well as water resources. Increasingly they’re being called upon to design and develop multi-functional landscapes where the purpose is to perform more than one service for human development. For example, multi-functional landscapes and utilities may include massive parking lots that look and operate as a park space when not full of vehicles, stormwater management features that appear as landscape amenities, roofs transformed into stormwater catchment and energy conservation systems.

Adding value and functionality

Multi-functional landscapes transition the perspective of green spaces from a space to maintain to a space that expresses value and functionality. Take the example of great American urban parks. Cities have hundreds of staff maintaining and refining green spaces such as Central Park of New York, Minneapolis’ Chain of Lakes and Grand Rounds Park, Millennium Park in Chicago, and Golden Gate Park of San Francisco. The value in human appreciation of these green spaces is international; the value in dollars of parks in taxes and other revenue is metropolitan. The Trust for Public Land found that land adjacent to park space in the City of Philadelphia generates an additional \$18 million in annual taxes, and adds \$680 million to the value of nearby homes. Cities already value high quality green space and now through the introduction of water management strategies, multi-functional landscapes will add even greater environmental services.

Commercial and industrial landscapes have received many a black eye by water resource managers and environmentalists for their contribution to aquifer depletion, urban runoff pollution and heat island effect. This critique, in some instances, is justifiable from an environmental point of view, but ridiculous from the landowner and business manager perspective. Industrious and entrepreneurial developers haven’t had the practical technological capabilities or the regulatory direction to make economically and environmentally feasible choices. New technologies, such as sub-surface drainage and smart irrigation systems, turf reinforcements, permeable or porous pavers,

intelligent moisture sensor controls, and use of perennial or native-hybrids are “paving the green way” for financially prudent and ecologically sensitive multi-functional landscapes.

Expressing function in landscapes takes a shift from traditional management to identifying design strategies that make sense relative to each site’s grading, land use patterns and vegetation. These spaces should be relatively easy to identify — for example, recommending a rain garden in a persistently wet area of turfgrass, identifying spaces for curb cuts for stormwater management, locating where sand and silt build up on impervious surfaces, and rerouting roof downspouts that have eroded channels to energy dissipation devices or intensively vegetated landscapes.

Resources to get started

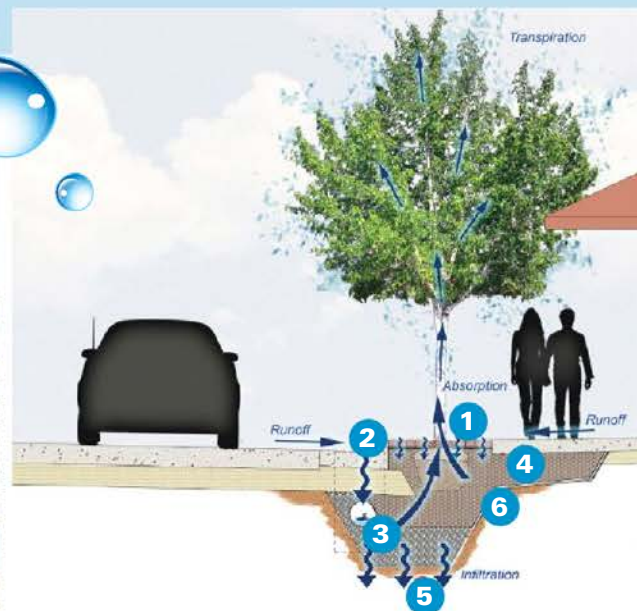
USGBC’s Leadership in Energy and Environmental Design (LEED) Certification or Sustainable Sites Initiative (SSI) and the U.S. Environmental Protection Agency’s (EPA) websites are all excellent starting points to understand techniques and define metrics of how your lawn and landscape techniques relate to greater environmental function. If you feel that there is dysfunction or bias in a LEED, SSI and EPA, so be it. They do however represent excellent resources for use in business development; repackaging and selling environmentally friendly projects will create new work. The base language and its connection to larger environmental issues is a great starting point for clients to begin to see how a landscape or lawn company relates to being environmentally practical.

In traditional management and water function, the fallback is grey infrastructure, which is pavement, curb, gutter and storm sewers. This single-serving landscape design has for too long defined the American green space aesthetic and accompanying ecological function. A lake, river or stream is





A green roof, like this one on the Target Center in Minneapolis, provides stormwater catchment and energy conservation.



LEGEND

1 Permeable pavers 2 Catch basin in street curb 3 Crushed Granite Infiltration trench & 12" diameter perforated pipe 4 Structural soil 5 Infiltrating soil 6 Impervious PVC barrier

add increased function and value through the introduction of rain water management and low impact design (LID) techniques. Commercial, industrial and residential green spaces can be transitioned into multi-functional landscapes through water management indicators.

Water: A tool to add value

Circling back to the opening question, "What the devil does all this "greening" mean for water? A simple answer is: "Greening" through water management in multi-functional landscapes adds value and functionality for our clients and the environment.

The perspective of traditional landscapes is changed by using water as a tool to allow landscapes to be used for multiple purposes. New products and tested practices now provide the Green Industry feasible economic and environmental solutions for new construction and re-development. Water-related technologies increase the capability for landscape and lawn care professionals to transition applicable green spaces from single serving to multi-functional.

We will find that it's easier for a customer to pull the trigger on projects that have double value on any dollar invested in multi-functional landscapes for water management. Water always wins, regardless of the odds. It's time to work with water to capitalize on the sustainability marketplace niche. **LM**

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quite literally as close as the curb. Efficient water conveyance systems of grey infrastructure result in dirty flushes of water runoff and ambient heat pollution radiating from our asphalt and concrete jungles. From a bird's eye view, the face of urban areas appears pockmarked from grey infrastructure.

Today, nonpoint source pollution remains the largest contributor to America's water quality and quantity problems. It is the biggest single reason that 40% of our surveyed rivers, lakes and estuaries are not clean enough to meet basic uses, such as fishing or swimming, says the U.S. EPA. Urban and rural flooding events are increased by runoff from traditional engineering and storm water management.

Parks and private landscapes may have innovative irrigation systems, top-of-the-line construction materials and maintenance techniques, but the greater opportunity is to