

A photograph showing two men, likely students or staff, kneeling in a garden bed. They are focused on planting small green seedlings into the soil. The man on the left is wearing a purple polo shirt and khaki pants, while the man on the right is wearing a maroon long-sleeved shirt and khaki pants. The garden bed is bordered by concrete blocks and filled with brown mulch. In the background, there is a building with a covered walkway and some trees.

Students take a hands-on approach to environmental issues in addition to their more traditional studies at Atlanta's independent coeducational Lovett School.

Water lessons

DIRTY HANDS aren't frowned upon at the Lovett School, an independent, co-educational day school of approximately 1,500 students in the Buckhead neighborhood of Atlanta. Students investigating and studying the school's natural areas and gardens are a common sight on its 103-acre campus. Even primary school students at Lovett School get grime beneath their fingernails as part of the broader environmental education.

Urban water management — efficient irrigation and innovative drainage in particular — figures large on the school's environmentally sensitive campus, which hugs the bank of the Chattahoochee River. The wooded campus features three school buildings constructed within the past decade, several older structures, a 0.33-acre pond, a small meandering creek, gardens and sports fields for

Atlanta's Lovett School shines as an example of intelligent environmental design, construction and wise use of its energy and water resources.

BY **RON HALL** EDITOR-AT-LARGE

60 school teams, including two new grass sports fields.

In almost every respect, Lovett can be described as green.

The most major recent addition to the campus, apart from its new baseball and softball fields, is the Portman Family Middle School, which opened in August 2009. Its 5,000-sq.-ft. green

roof, apart from helping to cool the building during Atlanta's hot summers and keeping it cozier in winter, serves as a living classroom for students who regularly gather in small groups to study around tables under the shaded plaza adjacent to its roof garden.

The garden is one of many cutting-edge innovations the school has embraced to use resources as efficiently as possible, including water, says irrigation consultant Bob Scott, who helped design and oversee the installation of the site's water-saving landscape features.

"Early in the planning process, I recommended that we develop an overall and bigger picture to deal with water at the campus," says Scott, president of Irrigation Consultants Inc., Conyers, GA. "We ended up doing a master plan for water usage and conservation. We started by prioritizing the water at the site, and our first priority was to harvest whatever storm water we could."

For example, the middle school's

WATER WISE

roof surface provides much of the irrigation water required by the garden. Precipitation falling onto the roof is collected, along with the building's air conditioning condensate, and directed into a 10,000-gal. aluminum tank at the base of the building, explains Scott. During periods of dry weather, that water is pumped back onto the roof and used in the green roof's low-volume system. Or, it can be used to irrigate plants surrounding the school.

The installation of the green roof was handled by national landscaping company ValleyCrest Landscape Cos., which was involved with many other landscape construction projects at the site during the decade-long process of upgrading Lovett School's campus.

"From our point of view, the logistics of how to access a roof is always a challenge, including how to get the material to the roof in a safe manner," says Brian Prantil, branch manager of the Southeast Region for ValleyCrest. "There were many other considerations for this project, as well, such as installing the correct, lightweight soil and installing the irrigation, in terms of the long-term maintenance of the green roof — and taking into account the water needs of the plants, which are different from other landscape areas at the school.

"There are increasing concerns about how to irrigate plant material without wasting water," he adds, noting that solutions include "the use of elements, such as cisterns; using plant material that doesn't require extensive maintenance, including native or adaptive plants; and making sure plants are located in the proper locations and in the correct soils."

The green roof and other energy and water-conserving design elements contributed to the middle school earning a Leadership in Energy and



Environmental Design (LEED) Gold Certification by the U.S. Green Building Council. The school learned of the designation in August.

"In the last 10 years, we have replaced our major educational spaces with up-to-date and more energy-efficient facilities," says Jeff Rountree, director of plant operations. "When we replaced our high school and our elementary schools, we were interested in building to LEED standards. Those two buildings just missed it by a couple of points each, so we dug our heels in a little bit deeper and

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Top: Students gather on the shaded middle school roof garden plaza to study or socialize.

Center: This above-ground cistern collects air conditioning condensate and rainwater from the green roof and stores it until it's needed to irrigate the roof garden.

Bottom: This naturalized creek captures runoff and empties it into a 0.33-acre pond.

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worked very hard in choosing and using materials, means and methods to achieve a higher level of LEED certification for our middle school.”

A collaborative project

While the school’s faculty, staff, students, parents and other supporters celebrated the Gold recognition, it wasn’t the planners’ main goal when the school’s major renovation process began more than a decade ago. Their larger vision has always focused on providing students with modern, state-of-the-art facilities to prepare them for the ever-changing career needs and opportunities of the 21st century. The other part of their vision included elevating the school’s facilities — buildings and campus — to a new level of environmental sustainability.

Like all projects of this size, its many different components required the talents of many professionals and contractors, and everybody following the spirit (if not the exact dictates) of the original master plan. Conditions, as in all sizable projects, called for some modifications as work progressed, says Scott.

Several experienced architecture firms took up the challenge of fulfilling the school’s vision, including the Atlanta-based landscape architecture firm of Hughes, Good, O’Leary & Ryan Inc. (HGOR). Its involvement began more than a decade ago as it partnered with committees comprised of school officials and a diverse group of other firms and professionals in crafting the project’s master plan.

Landscape architect Lauren Standish of HGOR says creating the visionary plan and obtaining the necessary permits and authorizations for the project took more than two years. Only then could moving dirt at the

site begin. The ambitious scope of the project required it be approached step by step, a process that has lasted more than a decade and is just now winding down, says Standish, who served as project director for HGOR on the site.

The school’s makeover began ambitiously with the construction of a 300-space parking garage, which opened up more green space on campus. It continued in phases, month after month and year after year, with the construction of the new upper school, then the building of the new lower school and, finally, the new middle school, now in its second year of use. HGOR partnered with and relied upon the services of experienced contractors, such as ValleyCrest and irrigation consultant Scott, throughout the project.

THE IRRIGATION CONSULTANT’S ROLE AT LOVETT

- › Working with the owner during development of the master plan;
- › Analyzing the existing irrigation systems on the campus, determining irrigation demands of the various systems around the campus, and identifying water resources available for irrigation;
- › Developing methods to deliver available water resources, and planning water harvesting and rainwater catchment systems for new and anticipated campus projects; and
- › Implementing irrigation best management practices (BMPs) for the landscaped and turfed areas of the campus.

“Our overall role was to make the vision of the landscape architect and the school a reality,” says ValleyCrest’s Prantil. “Lovett spent a great amount of time thinking through what its vision was going to be, and it was our job to put in exactly the installation it wanted and expected.”

This was also Scott’s role on the Lovett School project — making sure the school’s vision, at least in terms of irrigation and outside water use, was being realized.

“Perhaps the biggest challenge in a project like this is getting and keeping an overview of the project’s goals, and also keeping everyone aware of those goals, keeping everyone informed,” he says. “This includes the client, the design teams, the construction teams, and making sure it all remains tied together.

“In the end, of course,” he adds, “you want everything in the project to work as it was designed, and you want it to perform and be efficient for a long time. And, obviously, you’re also working to make sure it ends up providing the client, in this case, the school, with a tangible payback. When you conserve water, and in this case we’re harvesting and saving rainwater and runoff, you’re providing a tangible payback.” **LM**



Irrigation consultant Bob Scott guided the Lovett School water use plan.

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