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**IN THIS SPECIAL** Water Wise supplement you will learn about Lovett School, an incredible private school in Atlanta that embraces water conservation within its core vision. Also Brian Vinchesi, an irrigation consultant and EPA WaterSense Partner of the Year, shares how to make every irrigation project a winner.

# WATER WISE

PART



PHOTO BY: ISTOCK INTERNATIONAL INC

## 17 Understanding water's worth

Conservation is the key to water's future.

## 19 Water lessons

An Atlanta school teaches and embodies intelligent environmental design.

## 23 11 steps to a great irrigation project

A 'recipe' to make every irrigation project a winner.

# Rain Bird: Innovative products and initiatives for a better world

**ACCORDING TO A** recent article in the *New York Times*, the Southwestern United States is on the verge of a critical situation. Not only are water levels in Lake Mead too low to supply the area's burgeoning population, these same low water levels also diminish the Hoover Dam's ability to generate electricity. Unless the drought ends or water is diverted from other sources, the economic implications could be severe.

The Southwest provides just one example of the impact water has on each of us — in ways as personal as our monthly water bill and as public as our global economy. Around the world, the realities are staggering. Only 1 percent of the world's water is fresh — the only portion suitable for human consumption. Meanwhile, the demand for this relatively small amount of water is growing exponentially. As a result, 47 percent of the world's population will be living in areas of "high water stress" by 2030.


These facts are taken directly from Rain Bird's latest white paper, "Water Conservation and the Green Industry," a publication that examines the social and economic factors behind water conservation and their cumulative effect on the green industry. Our white paper series is just one example of our continued focus on The Intelligent Use of Water™. We understand the vital role water plays in a healthy, sustainable environment — and a healthy economy. As a result,

we continue to innovate and develop spray heads, nozzles, controllers and drip irrigation systems that apply water in the most effective and efficient manner possible.

Our commitment extends beyond our products to initiatives aimed at educating the industry and the community about the need to conserve water. Now in its fourth year, Rain Bird's Intelligent Use of Water Awards will provide a total of \$50,000 worth of grants in \$1,500, \$5,000 or \$10,000 categories to deserving water conservation and environmental sustainability projects worldwide. Through the annual Intelligent Use of Water Summit, Rain Bird brings together some of the world's leading experts on water, irrigation and conservation to openly discuss and debate water-related issues.

We are dedicated to environmental stewardship, and this commitment is woven into the very fabric of the Rain Bird organization. In the future, we will continue to develop both products and initiatives that have the potential to inspire responsible, informed choices about the way we all use water each and every day.





# Understanding water's worth

*Civilization*, traces mankind's dependence and use of water — from the first ancient, irrigated agrarian civilizations in the Middle East's Fertile Crescent to the rise of the United States as a global superpower. He makes the point that the economic dominance achieved by our society in the 20th century can be attributed, in no small part, to the abundance and productive use of our freshwater resources.

Accounting for approximately 6% of the world's population, the United States and Canada are blessed with a disproportionately large supply of its available fresh water. We use this precious resource to drive turbines in our massive dams, and for cooling and producing electricity in our power plants producing enormous amounts of energy that we parlay into industrial production. We use water from our rivers and our aquifers to make deserts bloom into gardens and to transform prairies into massive grainlands.

Who can dispute that much of California's incredibly productive agriculture industry is a gift of the Colorado River, while huge farms in our Plains states, one of the world's top grain-producing regions, owe their productivity to water drawn from the massive Ogallala Aquifer.

The best new source of water to meet our future needs will be the water we save now.

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

**W**AS A SOCIETY, and especially those of us in the Green Industry, are starting to comprehend water's true worth. While we have a long way to go, we now realize that we must do a better job of preserving water quality and conserving our freshwater resources. We're becoming aware of the irreplaceable role of fresh water to our society's economic vitality and to the health of our Green Industry.

Author Stephen Solomon, in his recently published book, *Water, The Epic Struggle for Wealth, Power and*

But there's a price to pay for drawing upon this bounty.

We're now faced with an overdrawn Colorado River, shrinking aquifers and, in the case of some of our fastest-growing regions, grossly inadequate water storage capabilities and crumbling infrastructure. Apart from providing our drinking, cooking and sanitation needs, the lack of an ample and reliable supply of fresh water threatens the economic base of our nation and, of course, our industry.

Few cities in the United States know this better than Atlanta, the Southeast's economic powerhouse that suffered a four-year drought that ended in the winter of 2008-09, ironically (and perhaps predictably) with flooding.

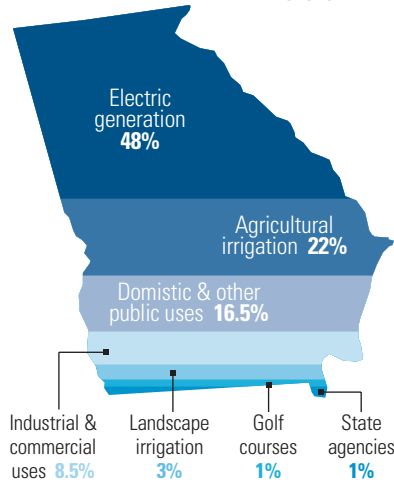
### Atlanta's huge challenge

You can't be blamed for wondering how a region that averages 50 in. of precipitation annually (compare this to the 4 in. annually in Las Vegas) can end up with just a few months supply of drinking water during the height of its recurring droughts, a huge problem considering the region's 5 million people. The short answer: lack of storage.

You also can't be blamed for being curious as to why Atlantans pay more for water than people in any other large American city — 108% more than New York and \$144 more than

## GEORGIA WATER USE

BY SECTOR



Source: The University of Georgia Cooperative Extension

San Antonio, TX. The answer again is simple: the \$4.1 billion price tag for upgrading the city's antiquated water and sewer system.

North Georgia's water issues, which the state is now belatedly attacking, offer a stark example of lack of foresight, planning and, perhaps, political will in securing water to meet future economic growth and development. And yes, Georgia, like much of the rest of the United States, will continue to add people, homes, industries and businesses.

Meanwhile, the amount of available fresh water (at least at an affordable cost) will remain constant or, in some regions, become even more stressed.

"We know we have to start construction now and plan for future droughts," says Dr. Mark Risse, professor and coordinator of Extension Engineering, University of Georgia. And, says Risse, future droughts are inevitable, ticking off the list of those plaguing Georgia during the last 30 years (1981, '86-'88, '98-'02 and '06-'09), the period of the region's explosive growth and development.

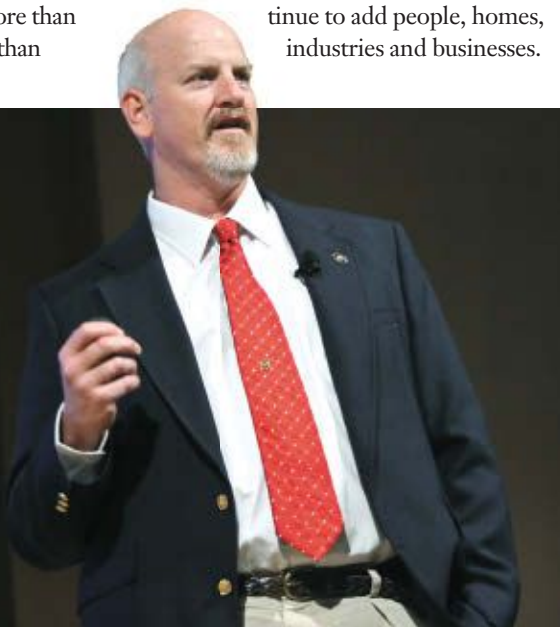
It's unlikely Atlanta will soon be getting a significant new source of water storage in the form of a reservoir. The cost and the time it takes to perform environmental studies and obtain necessary permits will see to that. The region's best — and likely, only — source of new water will be the water it saves through conservation.

Risse says that adoption of the State Water Plan in February 2008 ignited a flurry of activity to alert Georgians to the very real need to use water more wisely. These include programs directed specifically at the landscape industry such as:

- ▶ Implementing educational programs for customers;
- ▶ Offering customers checklists of practices and processes for certifying water-efficient landscapes; and
- ▶ By 2012, recommending standards for design, installation and maintenance of irrigation systems and certifying landscape professionals.

Is Atlanta doing enough to secure its water future — the key to its continued economic growth? Are the rest of us?


Maybe or maybe not. But the example set by new development in the region, projects such as the remaking of Atlanta's Lovett School campus (featured on page 19 in "Water Lessons") shows that we're aware of our water issues and taking steps to meet them. **LM**



**"WE KNOW WE HAVE TO START CONSTRUCTION NOW AND PLAN FOR FUTURE DROUGHTS."**

— Dr. Mark Risse



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

**D**IRTY 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

*continued on page 22*

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.