

SHADE

RETAIL DOLLARS GROW ON TREES

HOW TO
CONSERVE
TREES

*During Retail
Construction*

Georgia's
GROWING
GREEN
PROJECT

URBAN AND
COMMUNITY
FORESTRY

Take It to the Bank with Trees



SHADE

RETAIL DOLLARS GROW ON TREES



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Georgia Urban Forest Council (GUFC)

MISSION

To sustain Georgia's green legacy by helping communities grow healthy trees.

VISION

To be a broad-based leadership resource in promoting the importance of trees throughout Georgia by leveraging user-friendly technology, influencing the policy-making process and providing cutting-edge programming.

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AROUND THE STATE

Macon's Urban Forestry Champion

Carol Salami-Goswick is the driving force for urban forestry education in Macon. As chair of the Macon Tree Commission, she works tirelessly to educate the public about the importance of urban trees. She has led a number of community-wide initiatives, including spearheading numerous Arbor Day activities, organizing neighborhood workshops in areas of the county that were affected by tornadoes, and most recently securing a \$25,000 grant to formulate a plan for urban forestry in Macon.



Salami-Goswick leads urban forestry projects, while promoting education.

Through her work with the Master Gardeners, Carol led the "Macon Tree Trail" project. The trail, funded in part by a U&CF grant, includes 20 marked trees along the Ocmulgee Heritage Trail, brochures, a downloadable podcast, a web page and an educational kiosk in the parking area.

South Fulton Enjoys New Trail



Walton Lakes Trail.

South Fulton County residents have a new trail that offers easy access to a mature hardwood forest. Walton Lakes Trail is the vision of Josh Winter, owner of Winter Design, a landscape architecture and planning firm. The 10-foot-wide multi-use concrete trail winds through 34 acres of old-growth hardwoods, which are adjacent to the Walton Lakes apartment community.

The trail is the first segment of the

South Fulton TrailNet, a 110-mile system that will connect to the Chattahoochee Hill County Trail System and the City of Atlanta Multi-Use Trail and Greenway System.

More Trees for Cobb Schools

Keep Cobb Beautiful worked with the Georgia Forestry Commission (GFC) to create a program, Cobb Trees in the Schools, that adds shade trees to Cobb County school playground areas and air-conditioning equipment, windows and buildings on 114 school campuses, impacting 107,000 students and 15,229 employees. Since the program's beginning in 2006, KCB's Cobb Trees in the Schools program used \$25,000 in funding to purchase trees for the schools.

In the four years that Cobb Trees has been planting on school campuses, over 2,000 volunteers, working over 8,445 hours,

have come out to participate at their schools. Approximately 320 trees have been planted on 21 different Cobb County school campuses, with more schools scheduled for tree plantings during the upcoming year.

Cobb Trees in the Schools has been so successful that there is now a two-year waiting list for schools to receive trees — and that list gets larger every calendar year.

Stimulus Funds Support Green Business

Five Georgia RC&D Councils have received over \$570,000 in American Recovery and Reinvestment Act (ARRA) funds to support local jobs and businesses throughout north Georgia. The Councils applied through the Georgia Forestry Commission to perform tree planting on public grounds for ecosystem restoration and to support green jobs.



Trees enhance school playgrounds in North Georgia.

Over 90 projects (which include the RC&D Council projects and others) are planned in The Georgia Forestry Commission's Growing Green Program, which will benefit the region by supporting local tree nurseries and landscape contractors. The projects entail planting 1,500 trees in school grounds, parks, streetscapes and other public areas.

Students Manage Community Gardens

In a short period of time, what began as a mandated water retention basin has been transformed into a spot of beauty for Warner Robins' citizens to enjoy. Through the foresight of Ben White, an instructor of Biology and the Biology Club sponsor, students of Georgia Military College (GMC) Warner Robins



Warner Robins' new Gardens and Interpretive Trail.

Junior College have nurtured community partnerships to successfully install and manage the Warner Robins Community Gardens and Interpretive Trail.

The trail has become a tremendous asset to Warner Robins' residents, offering volunteer opportunities as well as a space of tranquility in the midst of busy city life. On any day, visitors will find a student studying under a tree, a young mother with children feeding ducks or a senior citizen strolling along the walkway.



The 20th Annual GUFC Conference and Awards Luncheon drew enthusiastic crowds on Nov. 17–18, 2010, in Athens. This year’s topic, “Smart Retail Development: Money Grows on Trees,” hit the mark with a strong line-up of information-packed sessions.

AT THE Conference



1. The 2010 Excellence in Urban Forestry Awards Luncheon; 2. David Rast, planning director, Peachtree City; 3. Attendees peruse their conference packets; 4. University of Georgia's Dr. Kim Coder speaks on tree conservation; 5. Connie Tabor, Main Street director, Toccoa; 6. Certified arborist Rob Swanson discusses tree health in retail areas.



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7. The five Resource Conservation and Development Councils of North Georgia receive the Outstanding New Initiative Award; 8. Moon's Tree Farm's Dan Whitehead and Norcross Tree Board's Jane Remaley; 9. Rob Ryan and Steve Sanchez of Hughes Good O'Leary & Ryan Landscape Architects receive the Outstanding New Development Award; 10. Georgia Forestry Commission's Joe Burgess receives the Outstanding Individual Achievement Award; 11. Annette Harlan and Diane Sprague, members of Trees for Augusta and the Augusta Tree Commission; 12. GUFUC establishes the annual Mary Helen Ray Legacy Award, honoring a distinguished person in Georgia urban forestry. Pictured are (l-r) GUFUC President Rusty Lee, Peter Ray, Patricia Ray, Trees Atlanta Executive Director Marcia Bansley and UGA Extension's Don Gardner; 13. Davey Resource Group's Shirley Trier listens to a speaker; 14. Tree Board representatives gather for a roundtable discussion; 15. Macon Tree Commission's Carol Salami-Goswick.



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Trees Help Retailers TAKE IT TO THE

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Retailers are going green. Starbucks is going to LED lighting and water-conservation faucets in many of its outlets. Subway has started using recycled materials to make its tile, crown molding and wall coverings for some of its stores. And Wal-Mart is working to create a scorecard on its store goods, rating products on eco-friendliness and social impact.

Many retailers are taking the term “going green” quite literally. They are bathing their shops, storefronts and parking areas in the fresh hue of leaves. But they are not investing in all that greenery because they agree with Joyce Kilmer and believe they’ll see nothing as lovely as a tree. Instead, they know trees can help bring in the kind of green they can take to the bank.

Trees are good for business in many ways. They boost property values. Their cooling effect can save business owners significant money in air-conditioning costs. They boost occupancy rates and worker satisfaction. They intercept storm water runoff. And they can help identify entrances, crosswalks and boundaries.

Retailers, however, derive even greater benefits from foliage. Studies show that shoppers will come from farther away, stay longer and spend more in retail areas with lots of trees versus those without. How can you argue with that?

“Tenants are happy when they are making money,” says Bill Green, vice president of construction services for W.C. Bradley Real Estate in Columbus. “Developers are happy when they are making money. Trees can help everyone be happy. They attract higher-quality tenants and help retain them longer. They increase the quality of life for the shopper and the profit for the tenant and developer.”

If you plant them, they will come – and they’ll spend

Retailers have long recognized the powerful psychological pull store ambience can have on shoppers’ behavior. Many studies have shown that music, lighting, color and scent can elicit physiological and emotional responses of which the shopper is not even conscious. Many times these cues influence evaluations about the quality of the store and its merchandise and impact shopping behaviors.

All these studies typically ended at the door of the store, however. Retailers and marketers as a rule did not consider what impact the aesthetics outside the store might have on its patrons. So that’s just what Dr. Kathy Wolf set out to do. Wolf, a research social scientist at the College of the Environment at the University of Washington, conducted studies in three settings: neighborhood business districts in large cities (populations greater than 250,000), central business districts in a medium-sized city (Athens, Georgia — population of approximately 100,000) and main streets in small cities (having 10-20,000 populations). Two additional surveys measured the effect of trees on businesses at the freeway edge and small open air or strip mall shopping centers. She was trying to find out how visitors and shoppers respond to business districts with and without trees.

Her findings were remarkably consistent across the three different types of settings — shoppers like trees. The more trees, the more they like it. They reported that they would drive farther to visit a tree-lined district — translating into an expanded trade area radius that adds thousands of people within urban population centers. They also

Left: An abundance of greenery, with trees placed at frequent intervals through the retail area, enhances the shopping experience at The Avenue Forsyth.

Right and below: Maintaining sign visibility while guiding the traffic flow, trees play an important role at this Louisiana shopping center landscaped by Athens-based Brookwood Consulting.



BANK

reported that they would come more often and stay longer in a well-canopied district, which could lead to greater sales volume for the retailers.

Other results were more surprising. Wolf found people were making judgments about the business districts and the individual businesses located there above and beyond the presence of trees. Respondents said they believed the merchants in a heavily treed district would be more knowledgeable and helpful than those in the area with no trees. They judged the quality of products to be higher in the stores that were surrounded by trees, and they even said they would be willing to pay more for equivalent products in those stores — 9% more in small cities and 12% more in large cities.

So just as shoppers will patronize a store — and spend more freely — with perceived pleasant music, lighting and scent, they will respond similarly to a tree-lined shopping

district. And that's valuable knowledge as retailers face ever-growing threats from giant discount stores and online or catalog purchasing.

And unlike many investments, trees actually appreciate over time. "On Day One of the grand opening, the architecture is shiny and new," says Eric Shade, a principal with Site Solutions, an Atlanta-based landscape architecture and land planning firm. "But over time, that architecture will break down and become a maintenance problem. But trees, if they are properly planted and maintained, will just get larger and thus more valuable."

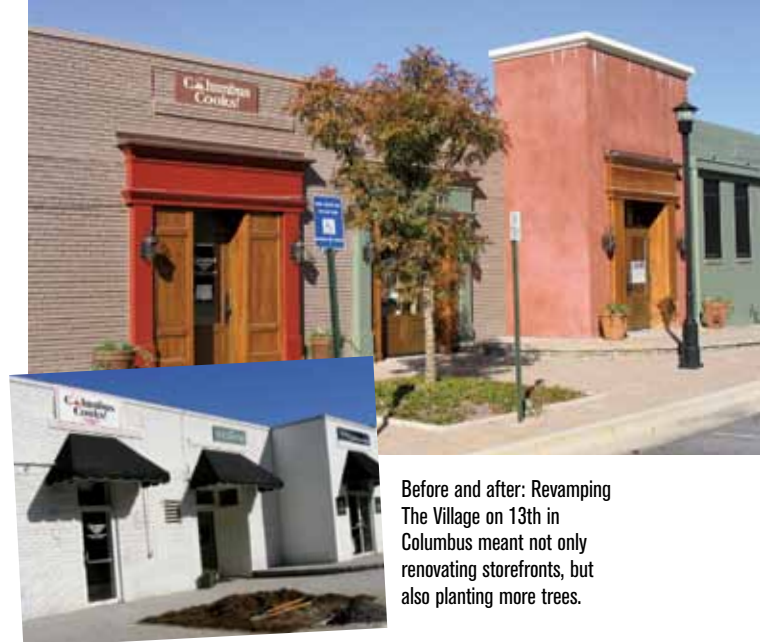
That's why taking care of the trees that are planted is so important. "The maintenance of the trees and landscaping you put in is what will make the retailer money in the long run," says Green. "If you support your initial investment in trees with proper maintenance, in ten years your center will look even better than it does today and you can charge higher rents."

Big retailers get the message

National retailers are clearly getting the message. Target, for example, went to great expense and effort to put together a detailed, comprehensive development book that deals with issues of sustainability, including trees and landscaping. “It essentially gives guidelines for different portions of the country, selecting trees and landscaping materials specific to their stores,” says Shade. “It’s part of their targeted branding.”

The book details how landscaping of the property is to be handled. And Target is hardly alone. “All the big box retailers are moving in that direction,” says Shade. “Some are constructing irrigation systems that come off the roof. They’re trying to create a more sustainable brand.”

Cousins Properties is an Atlanta-based developer that has incorporated sustainability into their projects. Cousins develops, among other things, “lifestyle



Before and after: Revamping The Village on 13th in Columbus meant not only renovating storefronts, but also planting more trees.

centers,” which are a type of outdoor mall. Walkable outdoor spaces are tucked around shops and stores, creating a character of place similar to old-time main streets. In Georgia, Cousins has developed The

More than a “Pretty Face”

For retailers, trees and other landscaping elements have long been viewed as the equivalent of a pretty face. “In retail — and commercial and residential — we have traditionally used landscaping for its aesthetics,” says Stephen Sanchez, a principal at Hughes Good O’Leary & Ryan Planners and Landscape Architects. “The plants and flowers were purely for our enjoyment.”

Not so much these days. Increased knowledge of the capabilities of natural elements combined with growing environmental and economic pressures have pushed retailers to look at trees in a new way. “Retail and commercial developers are now valuing landscaping for its function as well as its form,” says Sanchez.

And what valuable functions a healthy, mature tree performs. Here are a few:

MANAGE STORM WATER

One of the most environmentally and economically valuable services trees

and natural areas can provide retailers is in storm water management. This is an area where retail developers have not traditionally scored high marks.

“Traditionally, retailers have put curbs around everything to capture water and move it away from the site,” says Sanchez. “Then they’d come back and irrigate everything.”

The issue was control. Retailers wanted to be able to control the timing and the amount of water on landscaping features on their property. But in the past 10 years, storm water management has emerged as a big issue. Codes began to require wetlands and retention ponds to mitigate the polluting effects of runoff. The drought of 2007–2008 pushed those efforts into high gear.

Trees can mitigate storm water runoff in three important ways. First is evaporation from the leaves. “During light rains, the rainfall can be totally captured by the leaves and evaporate back into the atmosphere before anything even hits the ground,” says Sanchez.

Transpiration, or pulling the water out of the ground through its root system, is another way trees soak up excess water. Finally, there is infiltration, or the absorption of rain by good topsoil. Forest floors, Sanchez points out, are excellent storm water managers. “With years of leaf litter, organisms that feed off them and the tunnels they make, the soil in a forest is very absorptive,” says Sanchez. “Indeed, nearly 100% of storm water is captured in a typical mature forest, compared with 0% in an asphalt surface.”

With their impressive prowess at mitigating runoff, trees need to be used to their full potential in retail sites. “Instead of repelling water, we need to use our landscapes as a place for receiving storm water,” says Sanchez. “Ideally, you want water to infiltrate as close to where it fell as possible. If you have to collect it, then you start running into problems. So we have to start thinking of landscaping as collection spots, not disbursement spots.”

Sanchez suggests a few ways to boost rainwater collection:

- **Reduce pavement.** In a large shopping mall, for example, consider putting in grass parking on the outskirts

Avenue centers, as well as other retail shopping areas.

When Cousins Properties is developing a new center, trees are part of the equation from the beginning, says Cris Burgum, a regional director with the company. “We typically go above and beyond what the municipality requires as far as the number of trees we put in,” says Burgum. “That’s because we really believe in creating a unique sense of place that differentiates us from the mall or other shopping outlets, and trees are a big part of that.”

Indeed, Cousins conducted a study in 2007, asking shoppers to rank the attributes of the centers. About 30% of the shoppers said the primary reason for visiting The Avenue versus the mall was the setting. “The trees, landscaping and outdoor setting is what drew them,” says Burgum. “That compares to 60% who said the primary reason was location and 45% who said the primary reason was the merchandise mix.”

On a purely practical level, trees provide needed shade in the summer and shelter on rainy days. “We don’t want to be a shopping destination only in spring and fall,” says Burgum. “Trees allow you to bounce from storefront to storefront, shielded to some degree from the weather. Trees also provide useful demarcation in the parking lot. We use trees to mark the curbs and parking areas.”

Overall, trees make dollars and sense to Cousins Properties. “Our trees, landscaping and hardscapes drive shoppers,” says Burgum. “Shoppers drive sales. And sales drive tenants and rents.”

Make trees part of your renovation

The same maxim holds true for existing shopping centers that go through a renovation — trees are good for shoppers and tenants. Just ask Will Burgin, president of Jackson Burgin Inc. in Columbus. Over the past 10 years,

of the parking lot. “Grass can’t take a lot of traffic, but those spots will only be used two or three weeks out of the year, if that,” says Sanchez.

- **Use porous surfaces.** Pervious concrete allows water to penetrate through to the soil below. Porous pavers are another good choice, since they include a gap between pavers that allows even more infiltration.

- **Reduce the overland flow of storm water.** Grass is a good water absorber. Some trees and shrubs are better at soaking up water than others.

- **Spruce up bioretention ponds.** If you do need a bioretention pond, don’t hide it in the back of the property and let it go to seed. “Bring it out front and use it as a landscape feature,” says Sanchez. “That means you’ll need to maintain it, but it can be a functional part of the landscape.”

DIRECT TRAFFIC

Trees and landscaping elements can function as efficient managers of vehicular and pedestrian traffic. “You want to have a different tree program at the site’s entrance, another one in the parking field and yet another in the center of the site,” says Eric Shade,

a principal with Site Solutions, an Atlanta-based landscape architecture and land planning firm. “You want to use different types of trees to create a different feel and also to cue cars and pedestrians where to go.”

Large, very vertical trees, for example, can lend a sense of priority, denoting a main entrance. Within the parking area, groupings and layouts of trees can be used to denote parking areas and main thoroughfares. Smaller scale plants, such as crepe myrtles, can be used to identify pedestrian crosswalks.

“You can use trees and landscape elements to broadcast the function of different areas,” says Shade.

Trees and landscape elements can also spruce up small, unused spaces, adding interest and appeal. “You can take a small, unused space and create something interesting,” says Shade. “You can create walking spaces through them to invite pedestrians.”

OFFER SHADE AND COOLING

Trees provide shade. That’s a great benefit for shoppers, who would like to park their cars in the cool of the shade and walk between stores

without risking a sunburn. But that shade can also translate into real cost savings for retailers. Computer simulations using standard building and tree configurations for cities across the U.S. indicate that shade from a single well-placed, mature tree reduces annual air conditioning use 2 to 8% and peak cooling demand 2 to 10%. And shade from trees is more effective at cooling a building than blinds or reflective coatings on windows. This is because trees not only block radiation from heating a building, but also reduce air temperatures surrounding the building.

Although not as big an issue in the sunny South, trees can also reduce heating energy use by blocking cold winter winds. While buildings help to keep wind speeds down, increasing the number of surrounding trees can reduce winds further.

With all the useful functions trees and landscaping elements can perform, it’s time for retailers to give up the notion of landscaping for aesthetics only, says Sanchez. “When you are looking at your landscape palette, you have to choose plants for their functionality,” he says.

Tips for City Landscape Officials

Flexibility in commercial tree ordinances can go a long way toward encouraging retailers to plant more trees. Just ask Gordon Denney, the landscape architect for the City of Savannah.

Denney was working with Melaver Inc. on the redesign of a retail development called Abercorn Common. “When it comes to retrofits, especially with parking lots, most retailers are tempted to resurface and restripe and call it a day,” says Denney. “Melaver wanted to do more, but they were a bit wary. They wanted to make sure we would work with them.”

And Denney did. The key to working successfully with developers, says Denney, has four elements: get involved early, be flexible, be creative and be practical. “By getting involved early, we were able to ease their fears that they would be locked into something if they did more than resurface and restripe,” says Denney. “We convinced them that they could trust us to work with them and be flexible.”

He was true to his word. The ordinance requires no more than 12 parking spaces in a row without being broken up by a tree island and requires a 20-foot by 20-foot tree island. “We allowed them to have more than 12 spaces in a row and much smaller tree islands,” says Denney. “We also allowed them to plant a strip island of trees only eight feet wide the length of the lot. We were able to do both by using pervious concrete all around the islands and on both sides of the strip. Sometimes you have to come up with alternatives and think outside of the box to make things work. It also helps to have a developer who’s willing to pay for it.”

Denney also recognized it was not practical to expect a large-species tree in every island. “In some islands we allowed crepe myrtles or palms, allowing them to have their sight avenues open to the inside,” says Denney.

By being flexible and working creatively with the developer, Denney was able to get a better result than with what was required by the ordinance. “They were required to have 51 trees in their parking lot, but they put in 92,” says Denney. “Over the entire site, they provided almost twice as many tree quality points as they were required. I think it shows that with retrofits, it’s much better to strive to meet the *intent* of the ordinance than the actual letter of the law.”

Burgin and his company totally revamped two shopping centers on either side of 13th Street in Columbus, and trees played a large role in the redesign.

The centers, now collectively dubbed The Village on 13th, were built in the 1940s and ’50s and had run their course. The site on the south side of 13th was only 40% occupied, and the tenants it did have were downscale. The northern center was dominated by a relatively low-end grocer, and the rest of the shops were vacant. Both centers sat on a desolate sea of asphalt, devoid of any vegetation save for three neglected trees along 13th Street.

Enter Jackson Burgin. The company began renovating the southern center in 2001. Aside from giving the cinderblock buildings a much-needed facelift, with interesting architectural features, vibrant colors and new awnings, the firm planted some 32 trees in various newly created planters and along the street. “We invested as much in the streetscape and canopy as we did the storefronts,” says Burgin. “I knew we couldn’t just clean it up, paint it and call it complete. To create a destination where people would want to come, I also needed to create a canopy.”

When the company purchased the shopping center to the north of the one it had just renovated, Burgin wanted to create a similar feel. This time, the firm partnered with Trees Columbus to obtain a grant from the Georgia Urban Forest Council. With that money, Burgin put in about 52 very large — 4-inch to 5-inch caliper — trees along 13th and in planters in the once barren parking lot. “As a retrofit, my need to plant would have been almost nil by law,” says Burgin. “But those trees totally transformed how the whole center looked. Now there is a nice cobblestone sidewalk with large trees acting as a buffer between the street. It’s a very pleasant, safe place to walk.”

Burgin also used the grant money to address storm water runoff. A mechanical engineer, Burgin himself designed a system using a 25,000-gallon tank to collect storm water from the roof. Now he can use rainwater to irrigate the trees and other plants on the property, as well as reduce runoff into the city’s collection system.

What kind of return on investment did Burgin reap for his investment in trees and other renovations? Quite good. The south center is now 100% occupied with upscale tenants — including an art gallery and chic restaurants — paying rents that are 60% higher than their pre-renovation levels. The grocer in the north center has gone upscale, and while one shop remains vacant, Burgin is in negotiations with two potential tenants.

Burgin credits the City of Columbus for much of the project’s success. “They were very benevolent and let us do what we wanted to do,” he says. “If they had held strong and fast to their concrete, curb, gutter rules, we would not have the product that we have today.”

Overall, going green — as in tree green — is a good investment for retailers that just keeps getting better. In addition to helping save cooling and irrigation costs, an attractive canopy can set a retailer apart from competitors. In the retail world, maybe money *can* grow on trees. 🌳



Partners *in Profit*

Can signs and trees co-exist in retail areas?

Yes, say three experts who addressed the topic at the GUFC Conference in November. Here's what they had to say, as well as photos from several Georgia business areas showing how trees and signage can work in tandem to create a welcoming invitation to visitors.

“In Peachtree City, we have used monument signs effectively. You see the reduced scale, but, in relation, you can see they are all visible from the road. You need a regulated sign program that is compatible with the preservation of trees. As part of a site plan, we try to work with the developer to locate the sign in a prominent place — all at a pedestrian scale. We’ll work with the developers at an early stage to talk about their signage programs. We don’t want any businesses to suffer, but then we don’t want glaring signs that are visible from a mile away. This has proven to be very successful.”

— David Rast,
Director of Planning,
Peachtree City

“Our focus is on branding, so signs are similar in design. The Historic Preservation Commission needs to approve signage and tree planting in our downtown historic district. It’s really important to educate our business and property owners that it’s okay to have smaller signs. The small businesses don’t necessarily need the big pylon signs that big-box businesses want. Our business owners have selected smaller signs that co-exist with trees that are already there. They understand that they don’t need big signs for their businesses to prosper. They support the idea of branding.”

— Connie Tabor,
Planning & Main Street Director,
City of Toccoa

“The old thought is to plant something small — that won’t block the sign. But you end up with no shade. And the mature tree often ends up blocking the view of the sign, because the canopy is too low. It is much more effective to have a higher canopy. As the tree ages, the canopy closes and creates a ceiling higher up above the signs. Over time, you are able to maintain the visibility of the signs and storefronts, while providing nice shade. This also provides a safer area, because the streetlights are above the tree line. This approach creates a better place to visit and longer living trees.”

— Chris Hughes,
Landscape Architect,
Brookwood Consulting, Athens





Construction Mantra **PROTECT & CONSERVE**

Informed, forward-thinking retail developers may want plenty of shopper-luring trees around their stores and parking areas, but unless they make tree preservation a priority, they may be disappointed when it's time to open the doors and beyond. Retail site development can, and often does, result in soil compaction, rainwater runoff, root damage and injury to trunks and branches. The result — a barren concrete expanse instead of the lush green canopy envisioned by the developer.

“When the economy picks up and we get back into a development cycle of retail space, we’re going to have to get back into the idea of how to conserve trees during site development,” says Dr. Kim Coder, professor of Community Forestry and Tree Health at the University of Georgia’s Warnell School of Forestry and Natural Resources. “To

do that, you really have to worry about what is going on during three different phases — pre-development, construction and post-development.

“In the first phase, your concerns are site selection, project planning and tree and forest attributes,” continues Coder. “During construction, your focus is on site layout, tree protection zones and site damage control. And during post-development, you are concentrating on restoration of tree functions and values.”

Here’s a look at the factors that go into each phase:

PRE-DEVELOPMENT

All too often, tree experts are called in after the earth-movers and bulldozers are already well into their work. By then, the most they can hope for is to mitigate the damage

that has been done. Ideally, arborists and other tree experts should be on the scene before the first piece of construction equipment lumbers on site.

Before development begins, the tree experts need to consider:

TREE LITERACY OF THE DESIGN

Tree-literate professionals need to be involved in the site design from the get-go. They need to evaluate tree and site attributes and their relationship with the design process

“You really have to worry about what is going on during three different phases — pre-development, construction and post-development.”

and construction methods. “You have to include the people who are going to do the pick and shovel work at the site, the construction managers and the developer,” says Coder. “If you leave these people out, how are you going to have healthy trees in the end?”

PRE-DEVELOPMENT SITE EVALUATION

In an ideal world, you should begin the site evaluation process at least one growing season before development begins. If that’s not possible, start as early as you can. There are seven factors to consider in evaluating the site prior to development:

1 NUMBERS. “In most of Georgia, we have wooded sites,” says Coder. “So you’re not looking at ‘a’ tree, you’re looking at a lot of them. Retaining the absolute maximum number of trees is not necessarily optimal. In forestry, we’ve long managed sunlight and sun-capture. We have to do the same thing in retail site development. Too dense a stand of trees can lead to tree decline since the sun’s energy is being divided among too many leaves.”

2 BASAL AREA. This is a forestry measure that determines the cross-sectional area (in square feet) of all the trees on an acre at 4 1/2 feet above the ground. Using basal area can help quickly establish site occupancy and expectations of how a site will respond to development. A wooded site would be considered overstocked and unresponsive if basal areas are greater than 70 square feet per acre. A wooded site is understocked if basal areas are less than 35 square feet per acre.

3 SPECIES DIVERSITY. Some tree species can weather the stresses brought on by development brilliantly. Others

will begin to decline almost immediately. It’s obviously advantageous to favor the hardier trees over their weaker kin. And overall, the greater the variety of trees on a site, the better chances for long-term health. “Ideally, we’d like to have three species per crown class,” says Coder. (Crown class is the relative position of the tree crown with respect to competing vegetation surrounding the tree. Crown class is essentially a classification of competition for light and is aimed at separating trees that are growing freely from those that are not.)

4 SIZE. Just as you want a diversity of tree species, you should strive for a diversity of tree sizes. “You want a mix,” says Coder. “In general, I usually go for a five-to-one ratio — five small trees for every medium tree, and five medium trees for every large tree.”

5 CROWNS. This offers another way to estimate a tree’s potential response to change. Mature trees with a large volume of living crown can weather the stresses of development well. The proportion of living branches or living crown should ideally comprise 66% of mature tree height. Most trees should carry a minimum of 35% live crown. If the live crown is less than 20% of total height, the tree may develop problems after construction, and trees with less than 10% of live crown should be considered for removal before construction begins.

6 PAST DAMAGE. “How many times has that site changed use?” says Coder. “Each time, some damage likely was done to the trees. Take a look at old damage — especially at bases of trees. If there is a lot of damage, those trees are candidates for removal, because they might not make it through another redevelopment effectively.”

7 SOIL PROBLEMS. The soil surface can show soil disruption, heavy equipment use and compaction, mirroring past abuse and current health. “Trees cannot be better than the soil they are in,” says Coder. “You can go find the fanciest new cultivar and put it in poor soil, and within three years you are going to have a tree in poor health.”

PRE-DEVELOPMENT TREATMENTS

Once the tree expert has evaluated the site and the trees on it, he can make recommendations to minimize potential damage. Mark access corridors for construction equipment

and crews. Mark construction danger zones and tree protection zones. (These will be explained more fully below.) This is also the time to consider irrigation needs and methods and to apply a low-concentration, slow-release fertilizer.

CONSTRUCTION

“The main rule during the construction phase is ‘Get there first!’” says Coder. “If the tree experts are on site before the equipment starts, the trees win. If they get there after the damage is done and the soil is compacted, they are just playing catch-up.”

During construction, the duty of the tree quality expert is to:

■ **Locate the trees.** Every person on the site needs to know where the trees *actually* are. Plans should include accurate and precise locations for the trunk, crown and root area. “If you want great trees, you can’t just draw a general circle in the general area on the site map and expect the tree to be protected,” says Coder. “You have to use assessment tools and mark exactly where the stem is centered, where the critical root section resides.”

■ **Define zones.** If a tree is within 30 feet of the edge of the development footprint, it is in the “construction danger zone” and should normally be removed to facilitate good construction. Trees left within this zone are consistently damaged during construction, often eventually dying. Between 30 feet and 60 feet from the site is the “tree protection zone.” High-quality trees within this zone can be individually protected with barriers and stem, branch and root paddings or wraps. The area beyond 60 feet of the development should be off-limits to equipment and people.

“With modern techniques and equipment, we really don’t need to be out beyond 60 feet of the development,”

says Coder. “We want to concentrate the soil and site damage to just around the development.”

■ **Provide soil space.** Protect as much open soil surface as possible below the tree’s crown. “You can’t put asphalt up to the base of the tree and expect the tree to make it,” says Coder.

To give tree roots more breathing room beyond the typical 5-foot by 5-foot cutout, consider root paths. “Root paths are an underground network that allows roots to move through very difficult areas and find a channel to get to areas where there are more resources,” says Dan Whitehead, horticulturalist and sales manager for Moon’s Tree Farm and marketing director for Southern Selections, a sister company focused on the development of urban tolerant tree cultivars. “Alexandria, Virginia, has probably done more with root paths than any other place I know. It’s a very exciting and effective technique.”

In areas where roads and drives must be fortified to be able to support the weight of emergency vehicles, per code, consider structural soils. “This is a blend of native soils and gravel,” says Whitehead. “Root systems are not super happy with it, but at least there is soil and nutrients mixed with the gravel and it allows the roots to penetrate.”

■ **Reduce soil compaction.** “Soil compaction is a tree killer,” says Coder. “We have terrible problems with this throughout the South. Construction sites can easily have 50% greater bulk density than native soils. And increasing bulk density by one-third can be expected to cost a tree one half of its root and shoot growth.”

POST-DEVELOPMENT

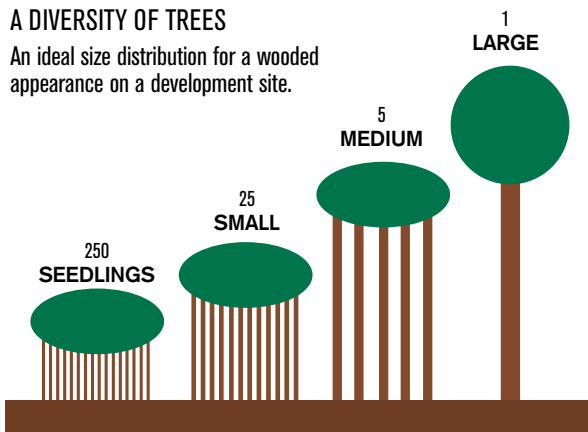
Once construction is done and the bulldozers and earthmovers have left the site, the tree expert’s focus shifts to identifying problems and associated treatments. Any severely damaged trees should be removed and replaced with plantings.

Post-development treatments include weekly water management and watching closely for pests and structural changes. Wait one growing season for minimal nitrogen applications, then maintain minimal levels for three to five years. “And make sure you have a tree health care provider that is monitoring the trees,” says Coder.

“The quality of life of a tree is dependent upon the design and development processes being tree-literate,” he continues. “Tree quality can be preserved, maintained and restored around development sites if we give trees a biological and ecological chance.” 🌱

A DIVERSITY OF TREES

An ideal size distribution for a wooded appearance on a development site.



Dr. Kim Coder, Warnell School, University of Georgia, 2010

How to Engage the LOHAS Market

Retailers who want to tout their “greenness” — and urban foresters who want to spread the word about the benefits of trees — would do well to know who their most receptive audience is. That would be LOHAS.

Who-HAS? LOHAS. Lifestyles of Health and Sustainability — a nearly \$300 billion U.S. marketplace for goods and services focused on health, the environment, social justice, personal development and sustainable living. Research shows that one in four adult Americans is part of this demographic group — nearly 41 million people.

And that number is growing. Over the next three to 10 years, another 38% of U.S. adults are expected to move into the LOHAS category. That means the majority of consumers could be making purchasing decisions on a fundamentally different set of criteria — not a product’s features and benefits alone, but also its impact on personal and planetary well-being. And they are willing to pay up to 20% more to buy those products and services.

The market segments that capture LOHAS dollars are personal health, green building, eco-tourism, alternative transportation, natural lifestyles and alternative energy. Personal health, which includes natural and organic foods, dietary supplements, personal care products, integrative health care, and mind/body/spirit products and services, claims the lion’s share of LOHAS spending, at \$117 billion. For more information, visit www.LOHAS.com.

So how do retailers and others reach this valuable demographic? LOHAS flock to forms of social media. This group is tuned in to Facebook, MySpace, Twitter, LinkedIn, YouTube and Flickr. They blog and they read blogs. “LOHAS are commentators, joiners, observers,” says Susan Granbery, an urban and community

forestry coordinator with the Georgia Forestry Commission. “They want information in ‘real time.’ So if you want to reach them, you must become familiar with the fast-changing media landscape.”

If you’re ready to give social media a try, here are a few tips:

➡ **Start a blog.** Given the popularity and influence of blogs, it is critical to create relationships with key bloggers to help advocate your mission and messages to target audiences. Key bloggers are people who blog about topics of interest to your target audience.

➡ **Create a Fan page on Facebook.** Develop interesting and engaging content to maintain people’s interest and post at least once a week. Respond to comments within 24 hours.

➡ **Post videos on YouTube.** Capture events, meetings and other interesting content you are involved in on video and post it to YouTube. Aim to post a new video at least once a month.

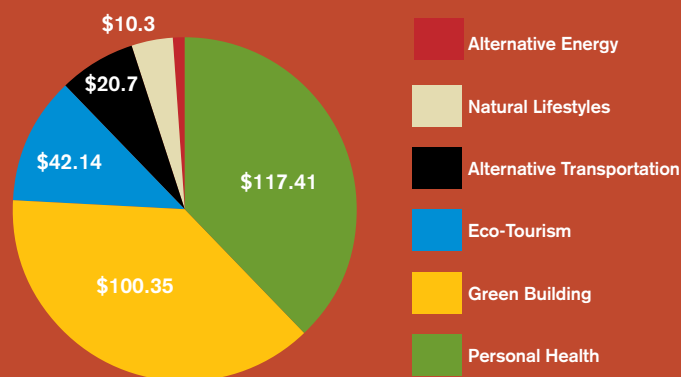
In Georgia, the Georgia Urban Forest Council and the Georgia Forestry Commission took a big leap into social media with a new website called GeorgiaGrove.org. The site was developed to engage families in taking

action to plant trees and then log on to The Grove to record the event. Electronically, The Grove could connect people and trees across state boundaries. Users would be encouraged to share personal stories about their trees, while also learning about the environmental, social and economic benefits of trees and forests in their cities, towns and across the state.

Users would also find a wide variety of information about specific trees and tree-related activities in Georgia: guides to planting the right tree in the best location, the cultural significance of certain species, seminars and meetings scheduled throughout Georgia, galleries for photos and opportunities to chat with other tree enthusiasts, to ask questions of the experts, and the option to donate via PayPal to the state’s Urban Forest Council.

The site proved so successful that The American Grove, serving 13 southeastern states, was launched on National Arbor Day in April 2010, and will grow nationally in 2011. In the words of Paul Reis, Director of Cooperative Forestry with the U.S. Forest Service, “The Grove takes us places where we have not been and where we need to be.” 🌳

Consumer Spending (in Billions)



Six market segments in the United States are capturing the LOHAS dollars to the tune of nearly \$300 billion in goods and services.



GEORGIA'S

Growing Green Project

Planting Trees & Creating Jobs

The 2009 economic stimulus package is stimulating tree planting in Georgia. The Georgia Forestry Commission claimed \$897,000 of the \$787 billion in federal funds made available by the American Recovery and Reinvestment Act of 2009 (ARRA), and it is pouring that money into north Georgia communities through “Georgia Growing Green” grants.

“When we applied to the U.S. Forest Service for an ARRA grant, we looked at two factors — where the change in the unemployment rate had been the greatest and where urbanization, and hence deforestation, was happening most rapidly,” says Sarah Visser, Georgia Growing Green program manager. “Those two factors pointed us to north Georgia.”

Indeed, the nursery and landscape industries in the northern part of the state had been hit hard by several years of drought and recession. North Georgia counties, including Lumpkin, Fannin, Dawson, Union, White, Clarke (Athens), Floyd (Rome), Gordon, Murray, Oglethorpe, Habersham, Morgan, Towns, Rabun, Gordon, Whitfield and Gilmer counties, experienced the highest net changes in overall unemployment rates. The City of Dalton in Whitfield County, known as the carpet capital, has seen one of the largest gains in joblessness in the nation.

At the same time, between 2001 and 2005, Georgia lost, on average, 273 acres of tree canopy per day, with 106 acres per day being converted to impervious surface, as

determined by the Natural Resources Spatial Analysis Laboratory (NARSAL).

Georgia Growing Green is an attempt to turn the tide with the help of some federal money. “We will be planting more than 1,550 trees,” says Visser. “And we expect to create about 30 jobs, and not just nursery and landscaping jobs. There is a ripple effect, as the local nurseries and landscapers buy tools and equipment and other local goods and services. It’s a boost to the entire local economy.”

To get a piece of the ARRA pie, local communities submitted grant proposals to the Georgia Forestry Commission. The Commission then doled out eight grants. The largest two, for approximately \$355,000 and \$236,000 respectively, went to conservation councils that proposed a total of 84 tree-planting projects between them. The other five grants, ranging from \$50,000 to \$10,000, were awarded to cities for specific projects.

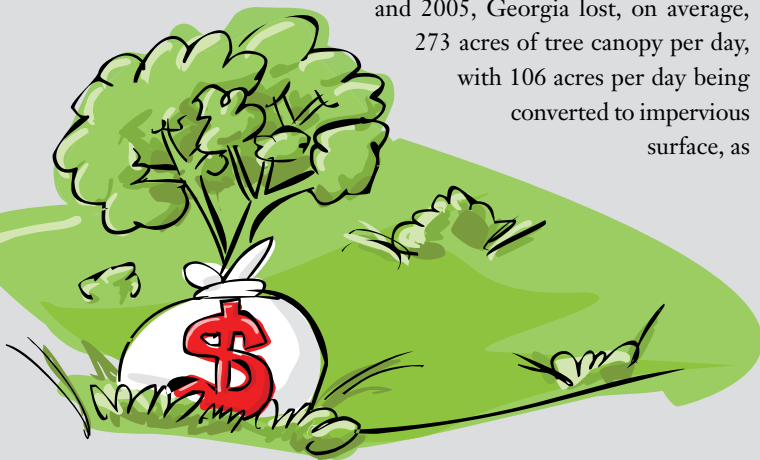
Here’s a look at a few of the Georgia Growing Green projects:

\$\$\$ Transforming a park

Edwards Park is a popular 109-acre athletic complex in Whitfield County. On any given day, you may find visitors jogging or strolling on one of the five walking trails, teams playing baseball, football, basketball or volleyball, and small groups enjoying an outdoor picnic. What you wouldn’t find, until recently, is a lot of trees.

“The back part of the park is still natural vegetation, but 60% of it had been cleared and most of it was pretty barren,” says Doug Cabe, resource conservation and development coordinator for Limestone Valley RC&B Council, which included Edwards Park as one of its 47 Growing Green projects.

With the ARRA funds, Limestone Valley planted 101 trees in strategic spots throughout the park — shading athletic courts and fields, picnic areas and the entrance.



“The trees have already made a big difference in the park,” says Cabe. “They have turned a playground into a park. But in the long run, their impact will be much bigger. These trees will provide huge environmental benefits in storm water management, heat reduction and a general improvement in quality of life. Within five to ten years, these trees are really going to have an impact.”

\$\$\$ Filling in the blanks

Two years ago, the City of Jefferson underwent a tree inventory, during which nearly 1,500 sites were identified as in need of more trees. Thanks to the \$50,000 grant the city was able to get through Georgia Growing Green, some of those sites will be addressed.

“We planted 110 trees where there were gaps in our tree canopy,” says Susan Russell, a certified arborist who was contracted by the City of Jefferson to oversee the planting. “We planted around the library, the school, public housing and corridors leading in and out of the city. Even people from out of town have noticed all the new trees.”

The city still has money left to plant 10 more trees, which will go into a downtown streetscape. “This has almost been like a marketing plan for what we want to accomplish in our community,” says Russell. “We want neighborhoods to purchase trees privately. We want new companies coming in to make sure they maintain their trees. We’re working hard to fill in those gaps in our canopy.”

\$\$\$ Ramping up the shade

The City of Hartwell divided the \$20,000 ARRA grant it received into two phases. In the first phase, which was completed in the spring, 10 trees were planted near the post office and adjacent parking. In the second phase, about 26 trees will be planted in downtown Hartwell, and the remaining 27 or so trees will go in near a new mega-ramp on Lake Hartwell.

“Many of the trees in our downtown area are Bradford pears, and they are old and falling down,” says Dan Spivey, zoning administrator for the City of Hartwell. “We’re replacing them with oaks and maples, which will really improve the downtown area.”

“And our new mega-ramp, which was put in for tournaments and other water events, really needs some help,” he continues. “It’s pretty barren down there right now, but these trees will be a big help. They will help with shade, heat, drainage and the ramp’s appearance.”

The ARRA funds have been a real stimulus for north Georgia. “We’re able to get dollars into the hands of industries that have been especially hard hit,” says Visser. “And we are planting trees that, down the road, will provide huge environmental benefits to their communities.”



The People Factor

A lifelong love of trees is the driving force that motivates these members of the Mansfield Tree Board.



Volunteers Alicia Lindsey, Beryl Budd and Steve Johnston admire a newly planted tree on the school playground.

By all accounts, **BERYL BUDD** was the catalyst behind the formation of the Mansfield Tree Board. As a forester with the Sustainable Community Forestry Program of the Georgia Forestry Commission, Budd works with tree boards all over the central part of the state, and he hopes to start one in every city of his home county, Newton. In 2007, after several years of prodding, Budd succeeded in getting a board formed in Mansfield.

Since then, the board has been busy organizing tree plantings. "A lot of the trees lining our streets here are old and declining," says Budd. "There hasn't been a tree planting program in many years. We started a tree inventory to identify tree planting locations within the city. I'd like

to replace the trees we've lost and increase our canopy."

It's a passion he's nursed since childhood. "As a kid growing up, I practically lived in the woods during the summers and was in them every chance I got during the school year," says Budd. "I'm sure that's why I chose a career in forestry. Even today, when I get home from work, I usually head right back outside to the woods and to the garden."

For **ALICIA LINDSEY**, education and trees go hand in hand. The Mansfield Elementary teacher has developed school gardens, created outdoor classrooms and organized Arbor Day events at schools where she's taught. "Anything to do with plants and trees, that was me," says Lindsey, who is chair of the

Mansfield Tree Board.

So it's not surprising that the board's largest project to date centered on the school. With a \$5,000 grant from the Georgia Forestry Commission and an additional \$5,000 in matching funds, the board planted 43 trees on the school's playground.

"It's not just for beautification," says Lindsey. "We tie the trees to our curriculum. We study their seasons, measure their circumference, take the temperature in the shade versus in the sun.

"For me, it's very rewarding," she continues. "I am able to impact our students and our community in a very positive way. The trees I help plant today will benefit generations to come."

STEVE JOHNSTON decided he wanted to work with trees when he was eight years old. "Anytime I heard a wood chipper, I would take off on my bike and then watch them working all day," he says. "The fellow who ran the crew got to know me and he'd take me up in the bucket and cut a few limbs off. I told him I wanted to do what he did when I grew up. He said, 'Naw, go to college and get a good job.'

"Well, I did go to college and get a good job, but I'm still doing what he did," continues Johnston, who is VP/ SE division manager of Bartlett Tree Experts.

With his tree expertise, he is a valuable addition to the Mansfield Tree Board. But his services with the board have taken him out of his comfort zone. "I understand trees. I understand business and sales.

But I have no idea how to fund-raise to help fund tree plantings," says Johnston. "To me that's very challenging, especially in a small community like ours." 🌳

EDUCATE THE PUBLIC

The Georgia Urban Forest Council's mission is to "sustain Georgia's green legacy by helping communities grow healthy trees." 2010 GUF C President Rusty Lee explains why an educated public can help save our community's trees, and suggests ways to engage the younger generation in the process.

SHADE: What urban forestry issues would you like to see brought into the spotlight?

RL: More education on the benefits of trees would be one thing I would like to see improved. Everyone has always heard that "an educated customer is the best customer." I think until we educate the general public on the benefits of trees, there will still be trees lost that should never have been. If the public has a basic understanding of why we need trees, how fragile they can be when working around them with construction, and how to take care of a young tree, then they can be the extra set of eyes that municipal arborists need in policing the community.

SHADE: Who are the individuals that need to be drawn into the dialogue?

RL: This could include many different segments of individuals within our communities. First and foremost, the general public needs more information presented in a manner that they can understand. This could be done with

PSAs, billboard messages, television spots, etc. that describe the benefits of trees as well as basic tree health issues. We need conversations between landscape architects, developers and community leaders who approve the construction permits and the arboriculture industry. I also believe we cannot overlook our younger generations. Considering that they will be the next generation of architects, leaders and arborists, I think we need to include them in the education process. I would like to see arboriculture and urban forestry classes taught at the middle school level so that we can start to shape these young adults at an earlier age.

SHADE: How can we introduce the younger generation to the urban forestry field?

RL: The old saying about "dangling a carrot in front of your face" comes to mind when talking about getting the children involved. Being the father of five kids, I know that sometimes all you have to do is just show them how much fun something is and they are hooked for life. Obviously, including some

short courses in the school system about the benefits of trees will help, but I think showing children how much fun our industry can be is all that it will take for them to become lifelong tree enthusiasts. A first step would be to share the thrill of climbing with the younger generation by having "fun climbs" where they actually get to climb trees with ropes and saddles. When high school students are considering their futures, their thoughts are usually, "What will I enjoy doing and what will make the most money?" For those who want to work outside, urban forestry is a viable option to enjoy the outdoors and to make a good salary.

SHADE: What other information would you like to promote?

RL: It's important to show the technological side of our industry. Most people think of flannel shirts, big axes and a blue ox when they hear the word "forestry." Once they see the new gear we use to climb trees, the instruments used to detect decay in large trees and the uses of silva cells and structured soils for creating more desirable growing areas for trees in urban/downtown settings, they will realize that this is not the same as it used to be. I think this would help to broaden the minds of the younger generation and let them know there might be a profitable future in our industry.

Smart Forestry Links

Alliance for Community Trees
www.actrees.org

American Forests
www.americanforests.org

The American Grove
www.americangrove.org

American Recovery and Reinvestment Act
www.recovery.gov

Georgia Grove
www.americangrove.org/ga

Keep Cobb Beautiful
www.kcb.cobbcountyga.gov

Lifestyles of Health and Sustainability
www.lohas.com

Trees Columbus
www.treescolumbus.org

US Forest Service
www.fs.fed.us

University of Georgia Warnell School of Forestry and Natural Resources
www.forestry.uga.edu

University of Washington College of the Environment
www.naturewithin.info/new.html



www.gufc.org

GEORGIA FORESTRY COMMISSION



www.gatrees.org



www.urbanforestrysouth.org

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