Green Infrastructure in Stormwater Management

Green infrastructure promotes on-site infiltration and reuse of rainwater. In contrast to conventional gray infrastructure methods that concentrate and discharge surface runoff, green infrastructure filters runoff through landscape features and harvests rainwater. Working with other site design professionals, landscape architects are well equipped to weave this infrastructure into the design of a site, making it a performing asset of the project and not simply a utility.

UT Landscape Architecture Faculty and Students to Write Green Infrastructure Guide

Professor Brad Collett and his students didn’t set out to write the book on using green infrastructure to manage stormwater, but as a result of a partnership between UT and PlanET, that’s about to happen.

UT’s College of Architecture and Design has pledged an in-kind contribution to PlanET that includes a series of semester-long design studios that focus on regional issues. The first studio tackled stormwater management, offering green infrastructure solutions to reducing storm runoff, channeling it in cleaner, environmentally-smarter ways, and finding uses for water that otherwise would drain unchecked to area streams.

The graduate students presented their work to PlanET members who saw such value in it that they asked the college to take it a step further and produce a regional guide to stormwater management using green infrastructure. Collett, with help from other UT faculty and landscape architecture research assistants, will repurpose the class work into a guide that will help local engineers, designers, developers, and the general public who are looking for better ways to manage stormwater.

Collett says, “East Tennessee’s water resources are of significant value to our regional economy, society, and environment. By partnering with PlanET in the creation of this guide, we hope to educate municipalities, developers, and the public about protecting these resources.”

And the guide couldn’t come at a better time. A new phase of the Clean Water Act went into effect recently, requiring communities to meet stricter runoff requirements.

Challenges to managing stormwater differ from place to place throughout the region. Development ranges from the high-rises of downtown Knoxville and Maryville, to shopping centers and housing in the suburbs, to wide-open rural areas. Stormwater problems can include runoff from parking lots and rooftops or erosion of silt from graded areas, draining into local streams.

And, because storm runoff doesn’t stop at county lines, it’s important to take a regional view when addressing these issues.

Once Collett and the students have finished their guide, a team of local engineers, planners, and developers will review it to ensure that best practices for all development types have been included and that the guide keeps a focus on regional concerns.

MPC Director Mark Donaldson thinks the community will see more benefits from PlanET partnerships. “As the PlanET process progresses, we need to ensure that a regional focus is maintained.”

And so, the guide they are working on will take on different forms in different areas of the region. Ultimately, the PlanET process will create a series of guides that are specific to different regions that can be shared and adapted as needed.
Follow PlanET:

The PlanET regional partnership includes: Anderson, Blount, Knox, Loudon, and Union Counties

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East Tennessee Farmers Losing Ground

East Tennessee has a rich agricultural heritage. Its hundred-acre farms, backyard gardens, roadside stands, and farmers markets make up that tradition. And it’s not just a rural culture. Even city folks can know the joy of walking out to the garden and plucking a ripe tomato off the vine for supper. Community gardens in urban areas and a recent ordinance that allows keeping chickens inside the City of Knoxville show a region-wide interest in homegrown foods.

Unfortunately, agriculture as a business is on the decline locally. The amount of land used for farming and the profitability of farm operations are shrinking.

In the five-county PlanET region, comprised of Anderson, Blount, Knox, Loudon, and Union counties, total farmland decreased by more than 15 percent between 1992 and 2007, a faster rate than the rest of Tennessee. Loudon County lost 46,000 acres, accounting for 75 percent of regional losses.

While farmland shrunk, the number of operations grew, meaning that local farms are becoming smaller. Average size dropped from 109 acres in 1992 to 84 acres per farm in 2007.

Production costs are rising at a higher rate than the value of products brought to market. From 1992 to 2007, costs climbed more than 60 percent. Even farms selling more crops and livestock than before are making less money. Loudon was the only county in the region to boast an average net profit for farmers in 2007. All other PlanET counties reported losses.

The region’s farms tend to be small, family operations. As the current generation of farmers grows older—the average age in 2007 was 59—and profits continue to fall, many farmers are abandoning the profession. And fewer members of younger generations plan to continue family farming.

Despite these challenges, farmers in East Tennessee still enjoy strong local support. Farmland preservation, more farmers markets, and more locally grown food were among the wants voiced by folks at PlanET forums and online.

Will this support be enough to attract a new generation of farmers or will East Tennessee continue to lose farm operations in the coming years?

For more information on the state of agriculture and other topics, visit the PlanET website and download the Livability Report Card.