Construction Projects on a university campus or at an Extension office or research and development center can provide the ideal opportunity for students and volunteers to work with faculty, Extension agents, and administration in the planning and design of their facility. Large-scale projects provide a unique experiential learning activity for students and volunteers in landscape design and horticulture programs. By participating at various levels of the landscape planning and design process, students can learn about planning policies, levels of approval and decision making, donor contribution and budget limitations, division of responsibilities, and implementation procedures. Understanding the complexities of large-scale projects can give students and volunteers a new appreciation for the facilities they enjoy and an awareness of the skills and knowledge needed to be a team member on landscape design projects.

A Florida-Friendly Demonstration Landscape

Landscape design students in the Environmental Horticulture Department at the University of Florida participated in the planning and design of the landscape for the new Institute of Food and Agricultural Sciences (IFAS) Professional Development Center, the Straughn Center, on the university campus. IFAS administrators expressed the desire for a landscape that reflected the mission, values, and educational goals of the IFAS program. To support the IFAS message, the landscaping around the center was envisioned as a demonstration landscape for the principles of Florida-Friendly Landscaping™ (FFL), a trademarked joint venture between the University of Florida, IFAS, and the Florida Department of Environmental Protection (FDEP).

The social goal of the Florida-Friendly Landscaping™ program is to modify environmental behavior to protect the environment, particularly the quality of Florida waters. Demonstration landscapes are important tools for programs engaged in social marketing campaigns aimed at changing perceptions and encouraging the adoption of new behaviors (Miller et. al. 2004). Research has also shown that adults retain more information and are more likely to adopt certain behaviors if they learn in experiential settings that are relevant to them. The experiential setting of public demonstration gardens is one of the primary means by which adults can learn about environmental concepts and transform their perspectives about the environment (Bush-Gibson and Rinfret 2010; Myers and Roberts 2004). Several studies have shown that learning in pleasant natural environments improves creative problem solving and information recall (White and Stoecklin 1998).

Landscape design students worked with the FFL program to learn about the nine principles of Florida-Friendly Landscaping™. Working with the Florida-Friendly staff gave the students the opportunity to learn about university Extension programs and the role of Extension volunteers, such as Master Gardeners. Students also learned about the educational goals of Extension and the use of social marketing strategies to modify environmental behavior.

Project Scope

The students were challenged to design a functional landscape for the Straughn Center that would clearly demonstrate the Florida-Friendly principles and also be an attractive landscape that fit with the campus aesthetic. Students were instructed to consider the needs of the user, including the ease with which the garden displays they designed could be replicated by homeowners in their home landscapes. Before beginning the project, the students formed a strategy for developing the education and design
program and created a step-by-step process for addressing
the issues to be considered when designing demonstration
landscapes. The strategy was reduced to the checklist
shown in Table 1.

**Predesign Planning**

**Vision Development**
The predesign planning included developing a purpose
statement, determining the educational message, and
selecting design features based on educational goals, visitor
needs, and site resources. The students developed the
following purpose statement:

> The purpose of the demonstration landscape is to teach
> homeowners about Florida-Friendly landscape principles
> and demonstrate how the principles can be used in their
> home landscapes. The goal is to encourage homeowners
> to use the nine landscaping principles (http://fyn.ifas.ufl.
> edu/publications.htm) by creating a visually pleasing and
> ecologically healthy landscape that would inspire visitors
> to replicate the design in their yards.

The design of learning landscapes is based on fundamental
landscape design principles complemented with a sound
education program. The education experience is based on
three questions: 1) What do you want the visitor to do?
2) What do you want the visitor to feel? 3) What do you
want the visitor to learn? These three questions provide the
foundation for the objectives.

**OBJECTIVES INCLUDED THE FOLLOWING:**
1. Create a visually pleasing design to encourage visitors to
   walk through and study the displays.
2. Design the landscape for all users with an accessible
   pathway.
3. Inspire visitors to take home ideas for their yard by
   creating simple yet appealing displays that can be
   replicated by the average do-it-yourself homeowner.
4. Explain the FFL principles with attractive signage and
   user-friendly technology.
Site Analysis

The site analysis exposed several construction constraints that had the potential to affect the layout of the landscape. A maze of underground utilities and aboveground connections, including a fire hydrant and utility boxes, restricted the location of the pathways, and a stormwater swale along the road restricted the size of the entry plaza and the size of the plant beds along the walkway. The building design, however, offered the opportunity to include a large cistern to store rainwater for use in the microirrigation system as well as the opportunity to develop a rain garden as part of the stormwater conservation system. The IFAS facilities and planning staff and the architect worked with the class and the FFL staff to redesign the covered pavilion to include two internal downspouts, one to connect to the cistern and the other to drain into the rain garden (Figure 1).

Education Program: Topic And Theme Development

The educational message that guided the design was the nine principles of Florida-Friendly landscapes to protect Florida water bodies, including 1) right plant, right place; 2) water efficiently; 3) fertilize appropriately; 4) mulch; 5) attract wildlife; 6) manage yard pests responsibly; 7) recycle; 8) prevent stormwater runoff; and 9) protect the waterfront. The learning stations are based on the nine FFL principles and provided direction for the spatial organization of the landscape design. The students determined that principles 1, 2, 4, 5, 7, and 8 would be demonstrated with plants and other features in the landscape, and principles 3, 6, and 9 would be described with educational signage.

Because the target audience is so varied, from teaching faculty and Extension agents to Master Gardeners and the general public, it was determined that the educational message would be the primary influence for the design, and visitor needs would center around functional concerns, including spatial requirements, circulation, and comfort and safety considerations. To facilitate the use of the demonstration landscape, the program included an entry plaza that can accommodate 100 people, a 3-foot-wide walkway through the landscape, and educational signage at the plant and feature displays. Figure 2 shows the proposed signs for illustrating the nine Florida-Friendly principles throughout the site.

Design Development: Selecting Design Features

The central requirement in design development was the incorporation of the first principle of Florida-Friendly landscape design: using the right plant in the right place. Students used the FFL publication, *The Florida-Friendly Landscaping™ Guide to Plant Selection & Landscape Design*, as their resource for selecting plants. Additional Florida-Friendly features used in the landscape included a rain garden and cistern to capture rainwater from the pavilion roof. These features were included to demonstrate principles 2 and 8 (Figures 3 and 4). A wildlife/butterfly garden (Figure 5), was included to demonstrate principle 5, and mulch was included in the plant beds to demonstrate principle 4.

Other features included a front entry plaza, a loop pathway, and educational signs at each FFL demonstration area. General path design and layout standards were considered, such as the use of loop pathways, creating sight lines and focal points, and meeting Americans with Disabilities Act (ADA) standards for wheelchair access.

Final Design

The students used existing site features and the FFL principles that could be demonstrated to guide the layout and spatial organization of plant displays along the pathway. Twelve landscape designs for the garden were presented to IFAS Facilities and Planning, the project architect, and
members of the Florida-Friendly staff. The group chose the best features from several plans, and FFL staff created the final master plan (Figure 6). Two welcome signs and interpretive signage lead visitors along a winding path connecting the main entry courtyard to the west parking lot. A series of shade trees, longleaf pines, and cabbage palms line the path. A variety of plant materials create an inviting garden with suitable plant choices for use in home landscapes. Wildlife habitat and rain garden display areas demonstrate construction and planting techniques. The compost bin and cistern displays offer homeowners fertilizer and irrigation options. All of the plant material will thrive in the conditions found on site and was selected for low maintenance requirements. After establishment, the landscape will do well with very little supplemental water, which will be provided, when needed, by a microirrigation system supplied from the cistern on the north side of the building. Figure 7 shows an artist’s conceptual rendering of the mature landscape.

After the garden was installed, the Center for Landscape Conservation and Ecology (CLCE) designed plant identification signs with quick response (QR) codes (Figure 8) that visitors can scan for additional plant information. The QR scans include a photo of the mature plant and information about the plant’s growing requirements and characteristics.

**Implementation Strategies**

There are several considerations for implementing a demonstration landscape, including finding funding sources and deciding on professional or volunteer help for installation. Once the vision has been developed, there is usually sufficient information to determine the complexity of the project and the budget requirements. This information can be used to write grants to pay for the installation. The complexity and features of the landscape also determine the need for professional contractors or volunteer labor. The plants for the IFAS center were purchased with grant funds from the Florida-Friendly Landscaping™ program, and volunteers from the Master Gardener program will participate in the maintenance of the landscape.
Project Completion: Student perceptions and important considerations

The students were most excited about the prospect of working on a real project that could be included in their design portfolios or resumes. They were not intimidated by the planning and design process but expressed impatience with the numerous approval steps and implementation procedures. Most perceived the design process and program development to be logical and easy to follow, but they were disappointed in the numerous revisions caused by budget restrictions and site constraints. When using “real” projects in the classroom setting, it is often difficult to consider the constraints and still allow the students some flexibility with design and creativity. The most common problem with students is overbuilding and being overbudget, which sometimes results in disappointment when the project architects and managers reduce their designs. Students often start with complex designs and too much hard surface with costly materials. Although the designs were simplified, the students were happy with the final plan. During site visits after installation, they were surprised with how well the simple plan worked. Most commented that the complexity of the plant material made the design seem more complex and rich, and they had not been able to visualize the detail and interest the plants would bring to the landscape.
IMPORTANT CONSIDERATIONS FOR SUCCESSFUL PROJECTS INCLUDE THE FOLLOWING:

1. Work with the architect and project manager from the start of the project to provide input at important points in the design process.

2. Use an educational theme that is well defined and has tangible principles or goals that can be illustrated in a display within the landscape. Design development is much easier for students when they can incorporate specific materials and visual components that are central to the theme. The cistern and rain garden are two examples from the FFL garden.

3. Include students in the vision development. Guide them through the process using a workshop-type setting, and require all students to participate. Encourage many discussions in class.

4. Be familiar with and follow all of the required rules, regulations, and codes, and know the process for project design, submittal, and approval for your campus or facility. Let your students know what to expect at each stage of the approval process.

5. Give the students a budget. If you don’t, they will create complex designs useless for the final plan because significant revisions will produce a gutted and tattered design.

6. Be certain that the instructor is well versed in the design process and has substantial design experience to guide the design of an effective and functional public space.

Summary

Demonstration landscapes are designed to be visually pleasing, inspiring, educational, and technically correct, all characteristics that require attention to the art and science of landscape design. It’s important to take the time to develop a vision and identify the goals and objectives. Define the purpose of the garden, who the garden is for, and what the site has to offer. Develop a clear, well-defined educational message to guide the spatial layout of the landscape and help determine the features needed to bring the message to life. And finally, design a visually appealing landscape to inspire visitors to use the ideas in their own landscape.

References


