

2004-05 INNOVATIVE GRANT APPLICATION FORM

Project Information

Applicant Name: City of Tallahassee – Solid Waste Services

Primary contact person: Greg Wilkerson, Administrative Services Manager

Complete Address: Solid Waste Services
2727 Municipal Way
Tallahassee, FL 32304

Telephone Number(s) (including SunCom number): **(850) 891-5255**

E-mail address: wilkersG@talgov.com

Project Title: The Municipal Green Building Certification
Voyage

Grant Request Amount: \$ 150,000

Length of project (months): 18 months

Authorizing Signature

General Manager

Title

PROJECT ABSTRACT

Due to a need for additional space, the City of Tallahassee has decided to completely renovate its 30-year old Solid Waste Services Administration building. During initial planning of this renovation project, the City decided that the renovated building should set a standard for environmentally responsible design and building practices. To this end, the City plans to proceed with the renovation with the intent of obtaining a Green Building Certification through the Leadership in Energy and Environmental Design (LEED) and/or the Florida Solar Energy Center (FSEC) / Florida Green Building Coalition (FGBC) Certification for a Municipal Building. The original budget for the building renovation is \$1.13 million. The City of Tallahassee expects to spend an additional 20-30% to make this a green building and obtain Green Building Certification.

The FGBC has not yet completed their Commercial Green Building Standard and certification guidelines, and will partner with this project to use it as a pilot for their FGBC Green Building Certification program.

Throughout the project, all activities will be documented, from the planning and conceptual design stages, through design review and construction drawings, to the bid procurement, pre-construction meetings, construction, and renovation completion. A cost-benefit analysis will be used in the purchase of Green Building materials.

At its completion this project, will produce and publish a case study report. We will also develop an electronic Florida Green Building Material Supply, Vendor, and Certified Building Directory/Database for uploading onto the Florida Green Building Center's website. The FGBC will complete their guidelines and certification process.

PROJECT DESCRIPTION

With increasing awareness of the environmental impacts of building construction and demolition, creation of a cost-effective, innovative Green Building is both a challenging and needed project. The City of Tallahassee Solid Waste Services (SWS) Department will seek Green Building Certification of their soon-to-be renovated SWS administration building, located at 2727 Municipal Way in Tallahassee. By adhering to the requirements of the Leadership in Energy and Environmental Design (LEED) and/or the FSEC/FGBC certification process, the City will design, renovate and operate a Green Building that enhances the well being of its employees and minimizes negative impacts on the community and local environment. The City of Tallahassee is ready to embark on the Green Building Certification Voyage.

The SWS administration building is 30-years old. Needing additional workspace, the City will expand and renovate the building in 2004-05. The entire interior and roof will be removed, leaving only the exterior walls and concrete slab. A second story will be added and a new floor plan will be designed based on Green Building standards and guidelines, which require builders to use more resource-efficient models of construction and renovation.

A Green Building Team (GBT) consisting of staff from the SWS, City Public Works Engineering, Kessler Consulting Inc., McGinniss & Fleming Engineering Inc., FSEC/FGBC, and DEP Pollution Prevention, will be established to manage, support and document this project. The GBT will be responsible for ensuring that the building is awarded enough points to obtain certification. LEED/FGBC certification is achieved by meeting minimum standards in five areas: **energy** (e.g., natural lighting, energy saving), **water** (e.g., low-flow toilets, xeriscaping), **construction material** (e.g., cellulose insulation, fly ash concrete), **waste minimization** (building deconstruction, efficient framing), and **indoor environmental quality** (e.g., no-VOC materials, proper air circulation).

The GBT will collaborate on conceptual design and construction drawings. SWS-approved drawings will be submitted to City Permitting (Growth Management) for approval. During the renovation process the GBT will help prepare bid specifications to ensure that materials conform to Green Building guidelines; contract with experienced green builders; and document the construction process and materials used during the project.

The GBT will prepare a building deconstruction waste reduction plan to minimize and manage the construction and demolition (C&D) waste stream. Components of this plan will include reuse of building material components and recycling of C&D discards such as cardboard, wood, gypsum, drywall, metal and fluorescent lamps. The plan will also incorporate efficient framing practices, efficient material purchasing and supplier take-back policies.

Throughout the project, the GBT will compile the necessary documentation, then prepare and submit a formal request to the LEED/FGBC seeking Green Building Certification for the renovated SWS administration building.

As an educational component of this project, a case study of this Green Building Certification Voyage will be written and featured by the FSEC/FGBC. A Florida Green Building Material Supply, Vendor, and Certified Building Directory/Database will also be developed and promoted.

Criteria 1: TECHNOLOGIES

Sub-criteria 1 – Not in common use in Florida

Based on literature reviews, Internet searches, and discussions with the FSEC/FGBC representatives, *no Florida municipal building has obtained an LEED certification*. At this time, the FGBC has not finalized their Municipal Green Building Standards, therefore the FCBC will utilize this renovation project as the pilot to review, refine, and possibly implement the FGBC Municipal Green Building Certification program. To our knowledge, this will be the first FGBC Municipal Green Building.

Sub-criteria 2 – Novel application of an existing technology or process

Recycling and waste reduction will be implemented not just after construction is completed, but also at the project outset and throughout the renovation. Deconstruction of the existing structure will allow for reuse of existing building material, and recycling of wiring, wood, drywall, metal, fluorescent lamps and other materials that are normally landfilled as C&D debris. The use of efficient framing techniques, efficient material purchases and supplier take-back policies will reduce waste during construction.

The use of green building materials and incorporation of reclaimed material into the bid requirements will help to support the markets for these materials.

Sub-criteria 3 – Overcoming obstacles to recycling/waste reduction in new or innovative ways

There is a common public perception that Green Buildings are more expensive than traditionally constructed buildings. However, according to a recent study conducted by the California Integrated Waste Management Board (CIWMB), green building is a wise financial investment because life cycle savings far outweigh the upfront investments.

To overcome the persistent belief that these methods are too costly, this project will measure the economic costs and benefits of green building design elements, materials reuse during a renovation process, recycling of building materials during demolition, acquisition of green building materials. By performing a cost-benefit analysis on the results of this project, this project will make real-world data available to the public demonstrating that a Green Building can be cost-effective in the state of Florida. A life-cycle analysis will provide data on the long-term impact to building overhead and maintenance costs, as well as employee health and safety in the workplace.

Criteria 2: TARGETS

This project targets municipal **Construction and Demolition (C&D) material**.

The building being renovated is an institutional building belonging to the City of Tallahassee, the SWS administration building. During demolition of the existing building, innovative deconstruction techniques will reuse and recycle materials. Discarded wiring, wood, drywall, gypsum, metal, fluorescent lamps and other materials will be recycled. Items such as doors, bathroom fixtures, lights and windows will be salvaged for reuse or may be sold to a secondary market. All these materials are normally landfilled as C&D debris.

Source reduction *during* and *after* construction will also be implemented. During construction, innovative, efficient framing techniques, efficient material purchasing and supplier take-back policies will reduce C&D generation. The existing exterior walls and concrete slab will remain and be incorporated in the new structure. Desks, furniture, cabinets, computers, etc. that are not reused will be auctioned through the City's asset auction program.

The Green Building Certification also requires Environmentally Preferable Purchasing (EPP). In most cases, environmentally preferable items are manufactured from material diverted or recycled from the normal waste stream. Examples of recycled-content products include cellulose insulation, fly ash concrete, plastic lumber and ceramic tiles. Purchasing these materials benefits the recycling industry by creating demand for recycled-content products and the recovered materials from which they are manufactured. Advertising or marketing the City's use of these materials will have an ancillary benefit of making others aware that use of these products is practical and economical.

The building design and layout will incorporate elements to facilitate the office recycling program that will be implemented when the renovation is completed. Space will be allocated for collection and transfer of recovered materials, and recycling guidelines and practices will be an integral part of building operations.

Criteria 3: BENEFITS

Sub-criteria 1 - Environmental Benefits

Methodology - The environmental benefits of this project will be realized through four (4) key environmental areas:

- *Waste Minimization & Management*: Reuse and recycling during deconstruction, waste reduction during construction through efficient building practices, reuse of office furniture and supplies in new offices, and recycling C&D discards.
- *Energy Conservation*: Utilization of renewable sources of energy such as solar power; energy-efficient electric lighting (e.g. compact fluorescent lights); lights and exit signs with timers, dimmers, or occupancy sensors; energy-saving appliances and air-conditioning equipment; solar or on-demand hot water heaters; and day-lighting design techniques (common sense building design using the sun's location).
- *Water Conservation*: Installation of low-flow toilets and water conserving fixtures not requiring out-of-the-ordinary installation and utilization of water-efficient landscaping.
- *Environmentally Preferable Purchasing*: Utilization of building materials that have a reduced effect on the environment throughout their life cycle with consideration for low toxicity, recycled-content, energy efficiency and biodegradability.

Toxicity - One of the main goals of this project is to minimize the impact of a building and its construction on the surrounding environment. Green Building guidelines require the use of less toxic materials in construction. Common items such as newly installed carpet, paints, varnishes, caulks, adhesives, treated wood, and composite wood products release toxic compounds. Alternative materials can be used in place of these conventional materials. Modular wall systems, furniture, flooring systems, sealants, adhesives, and paints and other low-VOC products will be used to reduce the level of toxic materials released and employee exposure to them.

Sub-criteria 3 – Economic Benefits

In general, the cost of constructing a green building is higher than that of a conventional building. However, a CIWMB study found that a 2% investment in green building construction yielded a life cycle cost reduction of 20%. This means that a \$100,000 green building investment on a \$5 million project should result in a savings of \$1 million over the life cycle of the building. Through lower energy, water, and waste disposal costs; lower environmental and emissions costs and lower operation and maintenance costs, we anticipate that this project will also yield a net benefit over time. These economic benefits will be documented through this project.

Sub-criteria 4 – Cost Effectiveness

The project consultant will perform a cost-benefit analysis. FSEC/FGBC will assist with weighing the cost factors for recycling, reuse, and utilization of green building materials, so that the cost of each will be weighed before it is included in the project.

The “Green Building” is sometimes referred to as the “Sustainable Building” since the operational saving and environmental benefits will continue long after the initial cost has been borne.

Criteria 4: TRANSFERABILITY

Sub-criteria 1 – Transferability of technology and processes

The pilot program can be used as a model project for virtually any new municipal building construction or renovation project, as well as a guide for green building in general. The guidelines and certification process that will be demonstrated, completed and studied in this project will be used throughout Florida to educate individuals in the construction and solid waste industries and to certify other green building construction and renovation projects.

Local and state government are the largest employers in the State of Florida. As these entities grow and continue to construct new buildings, it should become a priority for them to join the green building voyage both for environmental reasons and the long-term financial benefits.

Sub-criteria 2 – How project will promote transferability (5 points)

This building, situated in the state capital, will be a living model of green building principles. The City SWS will make the building available for tours, and literature and signs in the building will highlight key elements of green building's five components (energy, water, construction materials, waste minimization, and environmental quality) as well as the life cycle benefits achieved by the project. This project will serve as a case study to promote the green building process for all municipalities and counties, as well as for state agencies.

This project will aid the FGBC in finalizing its green building guidelines and certification process. The finalized certification process will serve as the standard not only for government building but also for commercial building throughout the State. As the inaugural FGBC certified building, this project will be used as an example of how the process is done and certification is achieved. The certification process will no longer be a concept but will be a reality. FGBC will promote the case study on its Website.

The Florida Green Building Material Supply, Vendor, and Certified Building Directory/Database will:

- Promote the use of green materials and green builders to other government agencies (state, county, city), as well as private contractors and building owners.
- Provide a list of Green Building material supplies.
- Provide a list of Green Building certified professionals.
- Provide a listing of Certified Green Buildings (private and public) in Florida.

Green Building Team members will also promote the project's results and the technologies demonstrated through various solid waste and building industry conferences and journals.

Criteria 5: LOCAL SUPPORT

As summarized below and detailed on the following page, the estimated value of local support that will be provided by project participants during the 18-month project is \$656,250, or 81% of the total project costs.

City of Tallahassee:

The City of Tallahassee will initiate the project in winter 2004/05, and will have made the following estimated investment in the project before the summer/fall 2004 when the grant would be awarded.

City of Tallahassee estimated Green Building material purchases: \$ 202,500

City of Tallahassee other estimated construction related expenses: \$ 443,750

- Non-recoverable C&D disposal,
- construction material purchases,
- equipment,
- building contractors and subcontractors,
- City SWS and Building department staff, and
- engineers and architects.

Miscellaneous Partners:

Estimated value of technical research and staff time of other project partners: \$ 10,000

- Florida Solar Energy Center (FSEC)
- Florida Green Building Coalition (FGBC)
- United States Green Building Coalition (USGBC)
- Southern Waste Information Exchange (SWIX)

BUDGET

As shown below and detailed on the following page, the total project budget (excluding construction cost) is \$806,250.

Local Match – Cash	\$646,250
Local Match – In-kind	\$10,000
Grant Request	\$150,000
Total Project Budget	\$806,250