

**FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
INNOVATIVE RECYCLING GRANT IG01-02**

Final Report – December 2003

**CONSTRUCTION AND DEMOLITION
REUSE AND RECYCLING NETWORK**



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1.0 Introduction - Project Conception

Charlotte County requested and received funding from the Florida Department of Environmental Protection (FDEP) Innovative Recycling Grant program to create Florida’s first Construction Materials Reuse Network to effectively manage construction and demolition debris (C&D) through source reduction, pollution prevention and recycling. This section is organized into sub-sections as follows:

1. Background of project
2. The project goals & objectives
3. What made the project innovative?
4. Formal presentation of project

1.1 Background of the Project

This project began as a collaborative brainstorm of several organizations interested in furthering the reduction of construction materials waste through reuse in particular, and recycling. These participating partners include:

- Charlotte County Environmental and Extension Services, a governmental entity;
- Habitat for Humanity of Charlotte County (HFH), a not for profit organization;
- Recycling Task Force of Hillsborough County (RTF), a not for profit organization;
- University of Florida Powell Center for Construction and Environment (UF-CCE), an educational institution;
- Southwest Land Developers, Inc. (SLD), a private landfill and recycling entity; and
- Resource Management Group, Inc. (RMG), a private consulting firm.

These participant organizations are collectively known as the “project team” in this document.

The project team brings together entities with a rich background in handling recyclable and reusable building materials. Charlotte County sought a strategy to reduce materials being disposed in the region, and a system to track diversion for reporting purposes. HFH sought a revenue producing business to generate funding for its home-building mission, new technical expertise to salvage building materials from houses being demolished, and diversion of reusable materials to serve the community instead of burdening the landfill.

The RTF had been involved with several potential building materials reuse projects and sought to increase opportunities for diversion of building materials for its members. UF-CCE had been developing construction materials reuse tools and deconstruction strategies, and was interested in creating additional resources to teach others how to deconstruct houses and reuse materials, additionally they were seeking opportunities to place educational resources into the hands of contractors and residents and get feedback on strategies that work.

SLD sought to evaluate the cost-effectiveness of expanding its recycling operations to include reuse and to explore possible collaboration with non-profits and government agencies to demonstrate diversion. RMG sought to develop educational resources for the community, and create online tools to disseminate information to a broad audience of potential reusers of building materials.

In addition to the core project team, several other entities participated in the project. Sarasota County Government supported the concept and offered to participate by promoting the project locally and offering collaboration on outreach and education. Other professionals, individuals and organizations were consulted and participated in the project, including The Used Building Materials Association (UBMA) and Richland Construction (located in Tampa, FL).

The project team would like also to acknowledge and appreciate the Florida Department of Environmental Protection (FDEP), a governmental entity, without whose financial support made this project possible. FDEP put out a solicitation for innovative recycling projects, with specific goals and objectives for diversion and cost-effectiveness as well as transferability of the project results to other Florida counties. This solicitation enabled the project team to meet and consider developing a demonstration diversion project.

The project team came together on several occasions and decided to submit a proposal to FDEP around the common interests of Construction Materials Reuse and because of the multi-county nature of the participant organizations and the potential to use the Internet to disseminate information, the project team conceived of the project as building a regional network to support diversion and reuse of building materials.

1.2 Project Goals & Objectives

The goals of the project were to:

1. Implement innovative and cost effective technologies and processes aimed at effectively diverting construction and demolition debris from the waste stream.
2. Create effective education, training and marketing materials and processes aimed at successfully reusing C&D materials.
3. Establish adequate information, knowledge and market systems to ensure the project's continued success and transferability to a variety of demographic and geographic areas.

To support these goals, the project team agreed upon several objectives, including:

1. Create a web site to disseminate information
2. Create a web site to act as a virtual warehouse, online exchange, and/or classifieds for used building materials
3. Create learning tools to assist Florida residents and businesses to begin salvage and deconstruction activities safely and efficiently

4. Divert materials in demonstration projects and document experiences through case studies
5. Market the concept of deconstruction and project resources to the general public

1.3 What made this project Innovative?

This project offers to Floridians innovations with broad benefits including those not in common use in Florida, new applications of existing technology, and ways to overcome obstacles to recycling. Overall, the project was innovative because it simultaneously developed a source of recovered materials, markets for diverted materials, and a way to bring stakeholders together.

When this project began, there were no electronically based warehouses, websites, online inventories, or construction materials exchanges that focus on Florida and have an educational component. Building99.com and DeconstructionInsitute.com fill that gap offering a Florida online exchange and a website with educational resources as well as a network of suppliers to bridge the communication gap between stakeholders and to increase awareness of opportunities to deconstruct as well as to buy and sell materials. Since C&D disposal/processing facilities do not typically advertise on the Internet to market their inventories of diverted materials, this project establishes a clearinghouse marketplace as a mechanism where any C&D disposal or processing facility can participate.

Deconstruction is not currently widely utilized as an approach to significantly decrease the volume of end-of-life structures needing disposal. Demolition and landfilling is the far more prevalent means. This project developed curriculum and training that focuses on deconstruction methods and marketing techniques to allow contractors to wholly and/or partially deconstruct buildings in a safe manner that preserves maximum value in the material diverted.

The Benefit Calculator, Feasibility Tool and Green Demolition Certification offer additional educational tools for contractors, governments and other individuals so that they might understand the environmental and economic impact of deconstruction versus demolition.

1.4 Formal Presentation of the Project

Members of the project team spoke at eight conferences and workshops throughout the Grant period as depicted in **Table 1 - Conference and Workshop Presentations**:

Table 1 - Conference and Workshop Presentations			
Date	Name of Presentation	Presenter	Venue
2001-Dec.3	Deconstruction: Research & Education, Market Development	Michael Murphy	ReBuild Sarasota, local meeting ~35 people in attendance

Table 1 - Conference and Workshop Presentations			
Date	Name of Presentation	Presenter	Venue
2002-June 5	Working Together to Increase Construction Materials Reuse	Barb Kula	Recycle Florida Today, State Conference, ~75 people in attendance
2003-Apr. 10	Innovative Grant Overview	Ellie Gibeau	SWANA -Regional Spring Conference, ~55 people in attendance
2003-May 7	Building99.com - the challenges of an online building materials exchange	Ellie Gibeau	UBMA national conference, ~75 people in attendance
2003-May 8	Green demolition certification	Brad Guy	UBMA National Conference, ~75 people in attendance
2003-May 9	Challenges of opening a building materials reuse store	Jesse White	UBMA National Conference, ~75 people in attendance
2003-May 9	School deconstruction and historic preservation	Michael Murphy	UBMA National Conference, ~75 people in attendance
2003-Jul. 31	Beyond Salvage: Boosting Waste Reduction through Deconstruction	Michael Murphy	FLPPR Pollution Prevention, State Focused Conference, ~65 people in attendance

Table 1 - Conference and Workshop Presentations

Additionally, the project team made many informal presentations at numerous venues throughout the project and plans to propose additional formal presentations for the Recycle Florida Today annual conference in 2004, the National Recycling Coalition Annual Conference 2004, and the UBMA National Conference 2004.

2.0 Project Implementation

The project team implemented the project in phases. Several activities were worked on simultaneously by different team members. All the activities were coordinated by Charlotte County Government to assure compliance with Innovative Grant guidelines.

This section is organized into sub-sections as follows:

1. Equipment and/or services purchased and how utilized
2. How the project demonstrated cooperative recycling effort with other counties
3. Description of project elements/components
4. Problems encountered and how they were resolved or addressed

2.1 Equipment and/or services purchased

This grant funded the creation of tools and resources. Consequently, the funding was utilized to pay for labor and consulting services. These resources are readily available online at www.DeconstructionInstitute.com and www.Building99.com as well as hard copies of resources available from Charlotte County and the other project partners.

The project funded the following strategies used to accomplish the project goals:

1. Working with Charlotte County Environmental and Extension Services to manage, facilitate, and promote the project.
2. Partnering with Habitat for Humanity of Charlotte County to monitor the diversion of their existing reuse store, train the volunteers and staff in deconstruction techniques and safety and the use of special tools, and assist the organization with the design and implementation of a stand-alone building materials reuse store.
3. Working with the University of Florida Powell Center for Construction and Environment to develop training and educational materials related to the diversion and reuse of C&D materials.
4. Working with a C&D landfill to collect and measure diverted building materials.
5. Creating a website to link recovered C&D materials and education to markets and consumers.
6. Securing the professional expertise of other companies, individuals and/or non-profits in the recycling/reuse industry as needed.
7. Developing methods, processes and strategies by which the project can become self-sustaining after the grant period.

The project did not fund any capital acquisitions.

2.2 Demonstration of cooperative recycling effort

The project is inherently cooperative due to the fact that project partners from four (4) Florida counties actively participated in the project. These counties are: Alachua, Charlotte, Hillsborough, and Sarasota. Deconstruction activities, workshops, and presentations occurred in all of these counties during the project period.

Additionally, www.Building99.com, the online building materials exchange, allows searches by one of four (4) counties (Charlotte, Hillsborough, Manatee, or Sarasota). Additional counties can be added, as the reuse network expands to a larger geographical area.

The benefits of this project are transferable to other Florida communities and counties. The websites are on the World Wide Web, allowing for nearly universal access. With continued promotion and administration these online resources will continue to be a well-used educational tool and online marketplace in the future.

2.3 Description of project elements

The project consisted of four integrated elements, as follows:

1. **“Virtual Warehouse” and Information web site** The project team created two websites. www.Building99.com was created as a marketplace for diverted materials from homeowners, salvage stores, reuse stores, contractors, and anyone else who has a building related item that they would like to buy, sell, trade or donate. www.DeconstructionInstitute.com was developed as a deconstruction educational portal. The website sections include: The Learning Center, Deconstruction Benefit Calculator, Articles, Case Studies, Links, Directory of related businesses and organizations, Photo Gallery, Forum, and Downloads.
2. **Institute for C&D Materials Recovery, Reuse, and Recycling** The project team developed many educational tools to enhance deconstruction and materials reuse activities during the grant period and for use after the grant period, including: Green Demolition Certification, Feasibility Tool and Users Guide, Benefit Calculator and the Guide to Deconstruction in workbook form. These resources enable the knowledge gained through this project to be easily transferred to other Florida counties. Workshops were held in various locations to teach deconstruction to contractors, non-profit staff and volunteers and homeowners.
3. **Diversions Programs** Deconstruction activities and diversion were documented into case studies. Habitat for Humanity Charlotte County Affiliate (HfH) was the project’s primary field partner and diversion was documented through tracked sales at its reuse store in Charlotte County as well as demolition sales and deconstruction/salvage activities. A C&D landfill diversion pilot was performed and documented. HfH also fundraised for and began developing a retail warehouse store dedicated to the sale of used/recovered and/or salvaged construction materials.

- 4. Marketing of Deconstruction and Reuse** The project utilized different means of promotion to get the word out about deconstruction opportunities and construction materials reuse. Some methodologies that were used include: presentations at regional and national trade conferences, print advertising, media releases, promotional pieces such as rack cards, trade newsletters, and participation in local events in participating counties.

Each of these project elements are described in greater detail, below.

2.3.1 Virtual Warehouse and Information Websites

Using the Internet as a way to increase diversion was Charlotte County’s primary reason for establishing www.building99.com and www.DeconstructionInstitute.org and www.DeconstructionInstitute.com. This section discusses the development and implementation of these websites.

2.3.1.1 The Design of Building99

An online listing of building materials to buy and sell did not exist in Florida for the Florida community. Thus Charlotte County established the first electronically based warehouse with online inventories with a focus on Florida. Other exchanges that existed had a national scope and did not have an educational component.

Area contractors and architects indicated to the project team that one barrier to diversion and resale of materials salvaged from construction jobs is not having enough storage space for salvaged items prior to sale. One local builder complained that his garage was full of “perfectly good treasures” that he had collected over the years. “How can I get rid of this stuff in a responsible way”, he asked.

Many builders, architects, and homeowners do not have room to store household items that they no longer need, or materials that they have salvaged from a renovation or demolition. Yard sales take time to plan – a commodity that most contractors and many homeowners do not have. As the Internet is used more and more by businesses and families, the online marketplace becomes the economical way to shop – even for salvaged materials.

The Online Marketplace provides an exchange between buyers and sellers without the expense of warehousing materials prior to sale. An online sale results in a direct exchange between buyer and seller. The vision of an online marketplace is to facilitate an exchange that saves transportation costs and other environmental impacts. Building99.com provides an effective way