Green Building Science Institute – Targeted Community Solutions Program
Education, Certification, Program Administrator

StalwartBuilt Homes – Stalwart Re-NEW, Stalwart MED
GE - Healthymagination, Ecomagination, City Solutions
(Water, Sewer, Renewable Energy, Electric, Transportation)

Southeast Energy Efficiency Alliance
(Grant Asst. Program Administration)

Development Manager Program (DMP)

Department of Energy – Builders Challenge
Zero Energy Homes Program

Environmental Protection Agency
Energy Star, Water Sense, Indoor Air Plus

Florida Solar Energy Center
Solar Education,
Project Certification Provider for the USGBC, EPA, DOE

MASCO Industries – Water Sense Certification Provider
Well Home, Environments For Living
The Green Building Science Institute – Targeted Community Solutions program was created as a solution to address several major issues that cities are facing today. The program is a solution to putting local community workers in a position to service the needs of their own community while gaining new valuable skills that will allow them to compete for better paying jobs related to sustainability.

The program also empowers the targeted city to create solutions for dealing with an aging building stock by utilizing the RENEW portion of the program. Existing buildings can achieve energy reductions from 20% to 70%, and reduce water consumption by at least 40%. New construction buildings can reduce energy consumption by 50% to near zero energy.

By creating a micro assembly plant in targeted locations, new high performance buildings that have superior indoor air quality, reduced utility consumption, and improved lifecycle of sustainability are produced while creating jobs for all in the community who have an association to the real estate transaction.
What is the Targeted Community Solutions Program

A workforce development program with a strong emphasis on education and training to address the retrofitting of existing buildings and new construction needs. The program is implemented as a holistic community approach to sustainability, and utility savings for energy, and water.

GBSI and its affiliate partners are in the business of performing Residential & Commercial Development Services that includes:

Planning and Design Services, Construction Management and Administration Services, Construction and Operation Management.

The team also provides Building Certification and Finance placement services on a nationwide basis. The team brings its years of experience, controls, systems, procedures, personnel, and associates to apply the successful completion of community based projects.
Each Plant covers a 200 mile radius for the shipment of Market Rate and Blight Replacement houses.
Summary of Potential Direct Jobs

100 Targeted Cities

<table>
<thead>
<tr>
<th>Category</th>
<th>Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rehab</td>
<td>20,400</td>
</tr>
<tr>
<td>Building Science</td>
<td>5,200</td>
</tr>
<tr>
<td>Manufacturing/Assembling</td>
<td>6,500</td>
</tr>
<tr>
<td>Manufactured Product On-site Assembly</td>
<td>20,400</td>
</tr>
<tr>
<td><strong>Total Potential Direct Jobs</strong></td>
<td><strong>52,500</strong></td>
</tr>
</tbody>
</table>
Building Solutions

- Residential
- Institutional
- Civic
- Commercial
- Government
- Faith Based Organizations

IGBF - Gulf Coast Assembly Plant

New Construction

Our building solutions program delivers highly energy efficient, healthy, sustainable, storm resistant, long life cycle buildings that are designed to last 100 years.

Housing Solutions

Program funding and management for Blight Replacement, Affordable, Senior, First Responder, Workforce, Special Health needs and Market Rate housing.

Green designated community design services with custom amenities and services to promote the feeling of home and unity. While lowering environmental impacts, utilizing the latest in alternative fuel technologies such as geothermal and solar PV coupled with the high performance housing solution to produce quality carbon credits and maximum CO2 reduction.
Working with the Local Building Community

- Builders attend training and gain certification in systems built construction methods
- Gain continuing education credit
- Advantage of buying at bulk pricing direct from the factory
- Training and support for certified sub-contracted labor
- Community and project marketing support for chosen mediums of advertising
- Training and marketing support for the realtor(s) working the project
- Builder gains “green designation”

Additional Benefits
- Shorter construction cycle
- Less call backs
- Higher profit margins
- Certification and testing to ensure the building is built and functions properly
Assumptions For Manufacturing Job Creation

IGBF Micro Plant Community Facility

- 100 Manufacturing plant direct jobs created
- Plus 160 Onsite Assembly direct jobs created
- Plus 26 Building Science direct jobs created
- Each Targeted Region is assumed to average 200 Homes per year
The Targeted Community Solutions Program will provide blight replacement and market rate homes with energy upgrades to accomplish one of four levels of home performance.

<table>
<thead>
<tr>
<th>Status</th>
<th>Maximum Investment Cost ($)</th>
<th>HERS Rating</th>
<th>Electric Cost per year ($)</th>
<th>Savings ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>0</td>
<td>100</td>
<td>2350</td>
<td></td>
</tr>
<tr>
<td>Stalwart Level 1</td>
<td>4,000</td>
<td>80</td>
<td>1600</td>
<td>792</td>
</tr>
<tr>
<td>Stalwart Level 2</td>
<td>10,000</td>
<td>70</td>
<td>1260</td>
<td>1136</td>
</tr>
<tr>
<td>Stalwart Level 3</td>
<td>18,000</td>
<td>55</td>
<td>980</td>
<td>1419</td>
</tr>
<tr>
<td>Stalwart Level 4</td>
<td>36,000</td>
<td>25</td>
<td>480</td>
<td>1919</td>
</tr>
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</table>

**Certifications:**
1. Environments for Living
2. Ecomagination
3. Energy Star 2 and after April 2.5
4. Indoor Air Plus (EPA)
5. Water Sense (EPA)
6. Builders Challenge
7. LEED for Homes
8. Near Zero Energy

**LEVEL 4**

LEVEL 4 expands the BASE program (1 - 3) plus LEVELS 2 & 3, and adds the following:

- Solar PV panels or other alternative fuel methods

Brings HERS Score to 30 or below, enables home to cost effectively accept alternative fuel

- Allows access to Tax Credits
- Allows access to Federal, State, Utility, Foundation Grant Funding where applicable

**Estimated energy savings = 77-80%**

**Estimated water savings = 40% greater**

**Annual Estimated Savings $ 1919.00**

Including:
- General Contractor Fee
- 501(c)(3) Contribution
- Testing & Certification
- Development Management Fee
- Stalwart Science Integration Fee
Sustainability Guidelines Checklist

This is a 76 point check list designed to ensure program compliance with all certifications and inspections required to meet the performance standards of StalwartBuilt high performance buildings both residential and commercial.
Assumptions for Rehab Job Creation
Stalwart-Renew Program

• 51 Jobs Created for every 120 Rehab Projects
• 240 Projects Per City Per Year is Estimated
• 102 Jobs Created Per City Per year
• Plus 26 Supplemental Building Science Jobs Created
Stalwart Renew Program - Rehab & Retrofit – All Building Types

- Audit
- Solution
- Retrofit
- Commissioning
- Quality Assurance

Workforce development engine implemented as Adult Education through the local community college to provide green jobs training in a variety of fields. Locally qualified, certified companies utilize the trained certified workforce to implement the program solution. Program management provided by GBSI, GREE, FSEC, Masco and GE. Works in unison with the 501(c)(3), Housing Authority, local workforce training programs.
Rehab & Retrofit – All Building Types

- 30-75% efficiency gain per structure
- 30-50% market penetration
- 5-7 year performance period
- Public-private partnership
- Self-sustaining approach
- Replicable model

Managed by the Nonprofit organization: energy and water efficiency program, implementer for the local community.

- Outreach and marketing on the advantages of efficiency
- Financing source for energy and water related improvements provided by GE – City Solutions, DOE, EPA, SEEA, JCI, Public Institutional Sources and Private Foundations.
- MASCO – Well Home Program is the Quality Assurance provider for property owners and occupants
- Certified Carbon Credits
The Targeted Community Solutions Program will assess the targeted homes for energy upgrades to accomplish one of four levels of home performance.

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<tr>
<td>Current</td>
<td>0</td>
<td>150</td>
<td>2350</td>
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Not to exceed - $10,000

* Model will include Federal, State and local rebates and tax credits

* Includes verification testing to be at or below Code 100 HERS - existing 150 HERS

**LEVEL 1** is a program that will focus on a ‘BASE’ upgrade of:

1. Additional attic insulation & air sealing
2. Enhanced HVAC system
3. 100% CFL Light Bulbs

4. Low flow water fixtures
5. Performance and certification audits

Bring HERS Score below code rating of 100

Estimated energy savings = 32-35%

Estimated water savings = 40% or greater

Annual Estimated Energy Savings $ 792.00

Including:
- General Contractor Fee
- 501(c)(3) Contribution
- Testing & Certification
- Development Management Fee
- Stalwart Science Integration Fee
GREEN BUILDING
SCIENCE INSTITUTE

LEVEL 1

BUILDING ENERGY RATING GUIDE
$2399
Reference $1695

0 MBtu
75.3 MBtu
53 MBtu

Proposed Home
Cost Basis: Gulf Power Co.
Florida Average
Statewide Prices

SOLUTION

NOT CERTIFIED
This rating must be registered.

HERS Index*: 163

NOT CERTIFIED
This rating must be registered.

HERS Index*: 98

NOT CERTIFIED
This rating must be registered.

NOT CERTIFIED
This rating must be registered.

1 HERS Index calculated in accordance with 2006 RESNET standard, Section 303.2 (Reference home = 100, Zero energy use = 0).
A better system for a Beyond Green home. The building science used in a StalwartBuilt home incorporates high performance green technology within a system-built process. All aspects of the home are designed as an integrated system, with components working together to create a building that maximizes performance within any given climate. The result is a healthier, energy-efficient living environment that not only meets the high “green” standards of national and federal government certification standards, but also includes other high performance attributes that make StalwartBuilt homes…Beyond Green.
Location: Callaway, Florida

Inner city mobile home park converted to a high performance green single family community.

First LEED Platinum Certified House in the State of Florida.
Zero Energy Home

First LEED Platinum Home in FL

Stalwart Built Homes
NZEH
Callaway, FL
Prototype House Peer Review
February 25, 2009

Eric Martin
D. Parker, J. Sherwin, C. Colon

HERS Index = 27

LEED® Facts
Stalwart Built Homes
Panama City, Fl

LEED for Homes Program
Certified on: March 21, 2008

Platinum 86

- Locations & Linkages 9
- Sustainable Sites 12
- Water Efficiency 7
- Energy & Atmosphere 34
- Materials & Resources 7
- Indoor Environmental Quality 10
- Innovation & Design 5
- Awareness & Education 2

SEE ENCLOSED CASE STUDY
Location: New Orleans, LA
Community destroyed by Hurricane Katrina. Urban redevelopment infill project. Re-built to Stalwart Beyond Green and LEED certification standards.
Pierce Home Site:
2,600 square feet conditioned space

Grade elevated 6 ft. to meet FEMA requirements.
Garage: site built

One day set and dry in. Security system activation.
**BENEFITS**

- Independent third party verification rating by the Green Building Science Institute, Panama City, Fl. Provider compliance approval by the Florida Solar Energy Center, Cocoa Beach, Fl.
- Approved by EPA for Energy Star label
- Qualifies the home for Energy Efficient Mortgage products
- Energy savings count as positive income for the home buyer
StalwartBuilt Homes / GBSI
Proprietary
Data Monitoring and Home Automation Solution
Targeted Community Solutions Program

Does not require additional capital investment

Data Collection
- Energy – Solar PV / Total Usage
- Water – Temp / GPM / Irrigation
- Geothermal – In/Out - HVAC
- Humidity – Outdoor / Indoor
- Universal Design / Medical Monitoring
- Appliance Performance Tracking
- Security – Windows/Doors – Open/Closed
- Lighting Control

Legend
CC=Cable Company  SBH=StalwartBuilt Homes  GBSI=Green Building Science Institute  SG=Smart Grid  501(c)(3) Community
Building Partnerships

ENVIRONMENTS FOR Living®

CERTIFIED GREEN

In Collaboration with ecomagination®

Green has grown up. And it’s ready for business.
WellHome Business Model

MHS will make homes operate better and more efficiently by providing whole home performance services

- Acquire interested homeowners
- Conduct comprehensive home assessment
- Sell turn-key improvement packages
- Perform work
- Follow up to create a customer for life

- Direct marketing
- Channel partners
- Set in-home appointments
- Energy and comfort audit using diagnostic tools such as:
  - Blower door
  - IR Scanner
  - Duct Blaster
  - Laptop
- In-home selling
  - Projects will include:
    - Air sealing
    - Duct sealing
    - Insulation
    - HVAC upgrades
    - Window upgrades
    - Renewable energy installations and Others
- Project scheduling
- Project management
  - Sub-contracting
  - In house crews
- Quality assurance
- Measure customer satisfaction
- Track savings
WellHome Services

Assess & Recommend
We assess your home, then discuss our recommendations on how to improve your comfort and energy-efficiency.

Install
WellHome or one of our selected service providers performs the improvements you've selected, with a focus on quality, convenience, and service.

Guarantee
Ensure improved home performance with the Whole Home Energy Savings Limited Guarantee.
WellHome Guarantee – Customer for Life
Sustainable community from GE
1. Continue to increase revenues from ecomagination products

2. Double investment in R&D

3. Reduce greenhouse gas emissions and improve energy efficiency of GE

4. Reduce water use and improve water reuse

5. Keep the public informed

- 50% reduction in GE’s energy intensity
- 25% reduction in water consumption
- Inspire a competitive green economy
Foley Lighting Audit Review and Next Steps

Expected Outcomes

- Review of lighting audit
- Discussion of next steps
- Framework of phased plan to keep Foley – The Forward City
<table>
<thead>
<tr>
<th>Project</th>
<th>Scope</th>
<th>Estimated Operating Impact</th>
<th>Estimated Environmental Impact</th>
<th>Comments One for one replacement</th>
<th>Payback Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comm. Dev.</td>
<td>100 Lighting Fixtures</td>
<td>• $1,368 / yr. savings</td>
<td>• Equals 3 cars or 5 acres of trees</td>
<td>Replaced T12 incandescent with T8Energy Smart</td>
<td>3.1</td>
</tr>
<tr>
<td>Fire station</td>
<td>156 Lighting Fixtures</td>
<td>• $2,687 / yr. savings</td>
<td>• Equals 5 cars or 8 acres of trees</td>
<td>Replaced T12 incandescent with T8Energy Smart</td>
<td>1.7</td>
</tr>
<tr>
<td>5 buildings</td>
<td>1,005 Lighting Fixtures</td>
<td>• $8,008 / yr. savings</td>
<td>• 32% Energy Reduction</td>
<td>Deeper dive suggested, based on Foley’s metrics</td>
<td>2.7</td>
</tr>
</tbody>
</table>

* Foley City Solutions 2
# Foley Parking Lot Case Studies - Outdoor

<table>
<thead>
<tr>
<th>Project</th>
<th>Scope</th>
<th>Estimated Operating Impact</th>
<th>Comments One for one replacement</th>
<th>Payback Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Justice Dept.</td>
<td>26 Lighting Fixtures</td>
<td>$2,500 / yr. savings</td>
<td>Move to LED lighting</td>
<td>8.1</td>
</tr>
<tr>
<td>City Hall/Library</td>
<td>37 Lighting Fixtures</td>
<td>$3,559 / yr. savings</td>
<td>Move to LED lighting</td>
<td>9.0</td>
</tr>
<tr>
<td>2 Lots Studied</td>
<td>63 Lighting Fixtures</td>
<td>$6,059 / yr. savings</td>
<td>Multiple solutions suggested</td>
<td>8.9</td>
</tr>
</tbody>
</table>
#1 Government need: cut budgets yet develop economy for jobs
#1 Budget item outside of salaries: energy plus always increasing
Your ideal next steps

Meet
- City stakeholder leads meeting: fleet, management, procurement with Johnson Controls to determine needs

Survey
- Survey departments for EV truck needs, identify funding & process procurement

Show
- Showcase success, demonstrate savings & integrate with grid

Smart Meters, Smart Grid, Sustainable City

The real power of the Smart Grid concept for municipal utilities goes far beyond metering technology and better system control. It lies in the communication network that makes the concept possible – while creating opportunities to deliver popular new services, attract businesses, energize economic growth, and engage residents in community improvement with sustainable solutions.
How do you pay for your energy budget cuts, retrofits & upgrades: energy savings
Education Solutions

Targeted Community Solutions
Curriculum Offering
Class Room and Online Courses
GREEN BUILDING SCIENCE INSTITUTE
FOLEY CAMPUS

LEGEND
1. IGFB MODEL HOME
2. AUDITORIUM
3. CLASSROOMS
4. RAIN WATER CISTERN
5. PHOTOVOLTAIC PANELS
6. COMMUNITY RECYCLING CENTER
7. COMMUNITY GARDEN
8. NEIGHBORHOOD COMPOST
9. HEAT REFLECTIVE METAL ROOF
10. DEMONSTRATION WIND TURBINE
11. XERISCAPE
The Targeted Community Solutions Program education initiative is offered as adult education. We work in partnership with the local college to design flexible schedules and core curriculum for workforce training.

We offer a blended curriculum of On-Line and Classroom courses. The majority of our course offering have CEU credits.

Program content is provided by our team partners. We supply our own certified instructors, additionally we offer “train the trainer” courses for some content.
Demonstration House Programming

GBSI proposes a demonstration house located at the Community College that would be used by the College, GBSI and the green building community for education and “Green Events”

- The House would be a “Behind the Walls” that shows the functional systems of a Zero Energy House
- Finishing of the house would be part of the kick-off for education programming
- House would be changed approximately every 2 years to keep pace with building and technology changes

House provided by StalwartBuilt Homes & IGBF
Public Training / Seminars

- Local college interns
- College projects (like solar decathlon, etc.)
- Understanding green (realtors)
- Appraising high performance homes
- Energy efficient mortgage/underwriting training
- Questions to ask your contractor
- Sustainable and high performance incentives for homeowners:
  - Federal, State & Local Governments
  - Utility Companies
  - Private / Public Foundations
- Efficiency improvements for existing homes (best bang for your buck)
- Home energy management (understanding peak utility rates the methods to save water, power, in your daily routine etc.)
- New Urbanism
- Sins of Green Washing (prioritizing green through third party certification)
- Alternative construction methods
- Indoor air quality threats, causes, and solutions

Conferences

GBSI works with its national, regional, and local partners to co–sponsor and provide education content in green building and development events through out the Gulf Coast area.
Marketing Program

Vendors Partners
&
Community Participation Campaigns
Local & National Community Participation Campaign

**Eco- Expo** and all educational events will be advertised and marketed through a coordinated community effort.

- White Paper Case Studies by Dept. of Energy
- National & Local Media Programs
- Local cable stations
- Community College
- Chamber of Commerce
- USGBC chapters and local “Green” organizations
The CDC or 501c-3

STRATEGIC COMMUNICATION PLAN

This planning track will develop a strategic plan to enhance communications and planning with the key community stakeholders during the planning process. This track will focus on communication with key groups connected to the planning process.

Communication Plan Components

- Resources and Expertise
- The Objectives
- The Targeted Audiences
- The Program of Work
- Informing the Community
- The task Timetable for Work
- Methods of Communication
- Evaluation Process Description

Methods of Communication

- Written Information
- Media Relations Announcements
- Marketing and Sales Materials
- Internal & external Comm. Procedures
- Taskforce & team Comm.
- Report Summaries & Procedures
- Surveys or other methods of feedback
- Website(s)
- Periodic Print Publications
- Public Relations Materials
- Legal & Legislative Documents
- Online Communications
- CDC Updates & Newsletters
- Special & Confidential Reports
- Paper or Electronic Signage
Thank You

On behalf of the
Green Building Science Institute
and our strategic alliance partners.