

GOING GREEN

What does *that* mean?

Presented by:

Dr. Jennifer L. Languell



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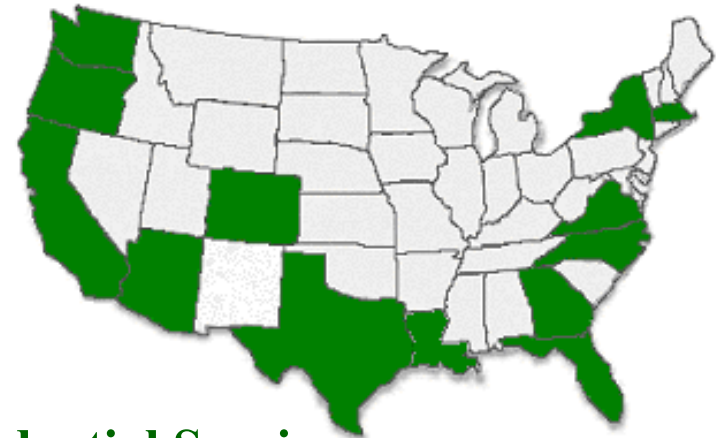


W C I Green Building
Demonstration and Learning Center

www.fgcu.edu/greenbuilding

ConstructGreen, Inc.

Formed in 2000



General Services

- Corporate / Organizational Greening
- Green Building Training
- Marketing Consulting

Commercial Services

- LEED™ Tracking Tool Development and Management
- Project Specific Consulting
- Project Acquisition Consulting
- Green Building Charrette Facilitation & Project Peer Review
- LEED™ Project Management

Residential Services

FGBC Green Home Standard

- Design Review
- Green Project Management
- Certification
- Energy Analysis

FGBC Green Development Standard

- Green Visioning
- Charrette Facilitation
- Design Review
- Green Project Management
- Certification

Introduction to ConstructGreen, Inc.

Partial Client Listing

Owners/Developers

Capital One Services
Emory University
Kennesaw State University
University of Florida
Duke University
Florida Gulf Coast University
WCI Communities
The Bonita Bay Group

CM/GC

DPR Construction
Bovis Lend Lease
Beers Skanska
Beacon Skanska
Hardin Construction
Whiting-Turner

A/E Firms

BR+A
Stang & Newdow
HGBD
Gora-McGahey
VOA Associates
Parker/Mudgett/Smith

Manufacturers

ABS Systems
Tailored Foam

Municipalities

City of Stuart
Martin County
Alachua County

Residential Builders

London Bay Homes
Imperial Homes of SW Florida
Marco Bay Homes
Southern Bay Homes
Lyons Housing Corp
Daniel Wayne Homes

Arthur Rutenberg Homes
Royal Palm Builders
Keevan Homes
Wyman Stokes Builder
Marvin Homes
Gulfstream Homes

Centex
WCI

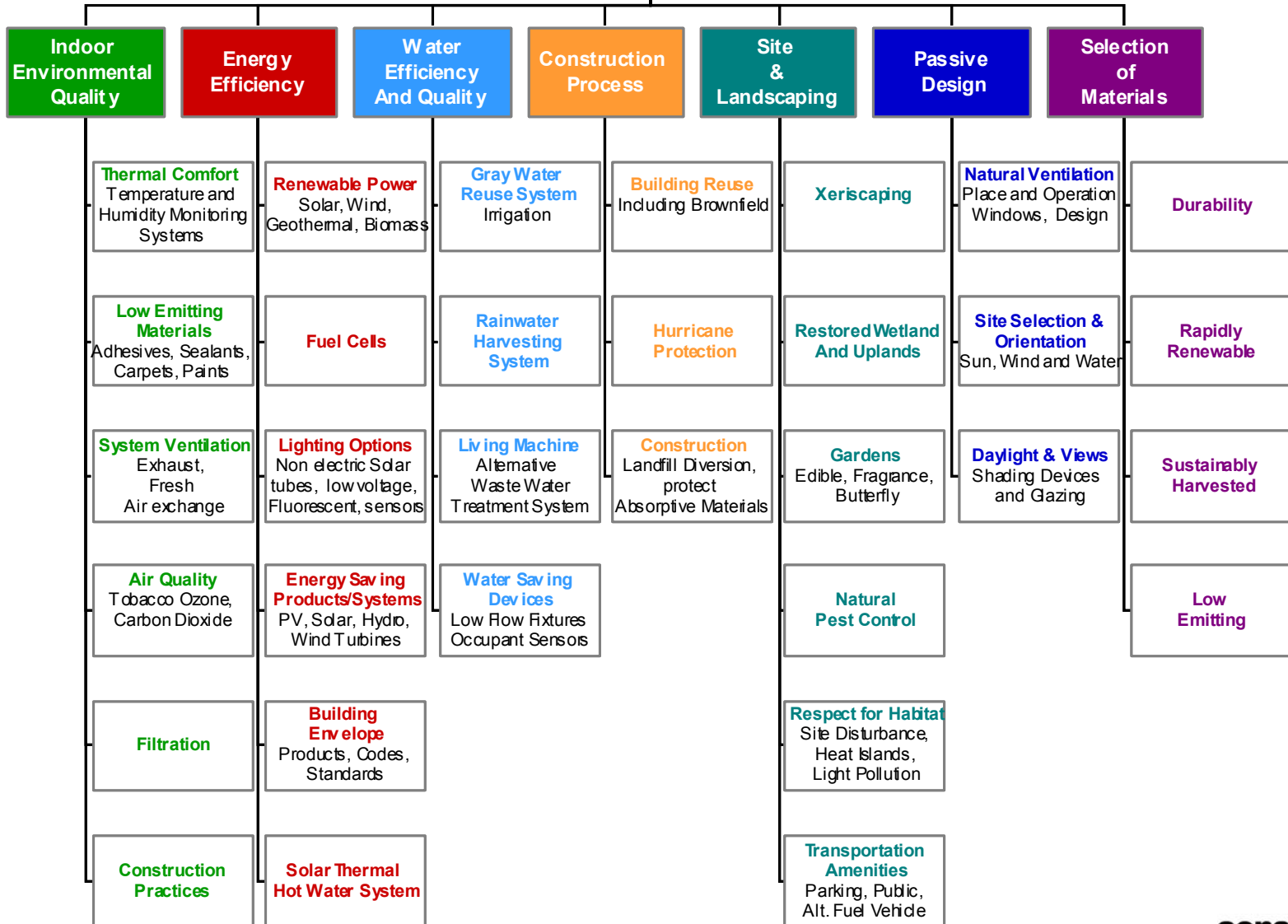
FGCU Green Building



Florida Gulf Coast University
Proposed WCI Demonstration and Learning Center
May 16, 2002

Gora
McGahey
ASSOCIATES IN

Building Exhibit Space



Building Programs

Education

- K – 20 Student Education
- Academically Centered
- On Campus at the Green Building
- Colloquium
- Monthly → Weekly



Community Outreach

- Off Campus Programs
- Lectures, Seminars, Workshops
- Local businesses, residents, and community groups
- Quarterly → Monthly



ROBB & STUCKY
Furniture and Design Studio



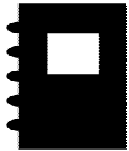
Training



- Architects, Engineers, Developers, CM's, GC's, Subcontractors
- Residential and Commercial Construction
- Non Construction Industries – Health Care & Hospitality
- Implementation Oriented
- Quarterly → Monthly



Research



- Faculty, Staff, and Student collaboration on Proposals
- Leadership and Distinction in Sustainable Research
- National and International Conferences/Publications
- Need 1 – 2 years of funding cycles
- Weekly → Daily

Demonstrations



- In-House in conjunction with Education and Training Sessions
- New Product Demonstration
- Application Techniques
- Community introduction to innovative products
- Quarterly → Monthly

Green Building



Energy Efficiency

Water Efficiency & Quality

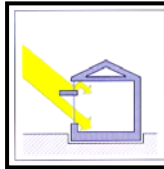
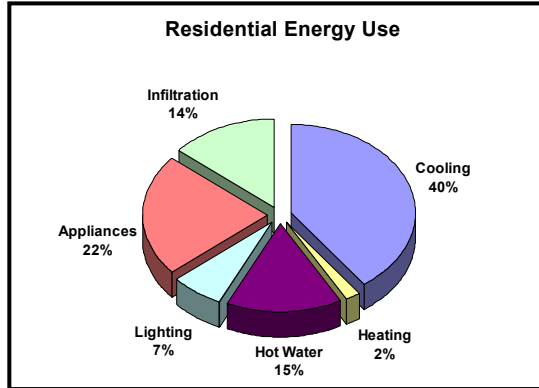
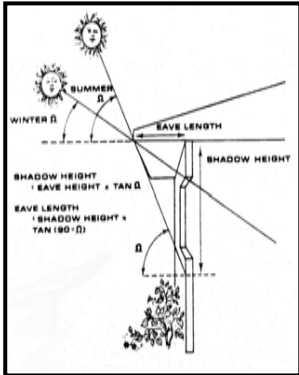
Indoor Environmental Quality

Passive Design

Site & Landscape

Construction Process

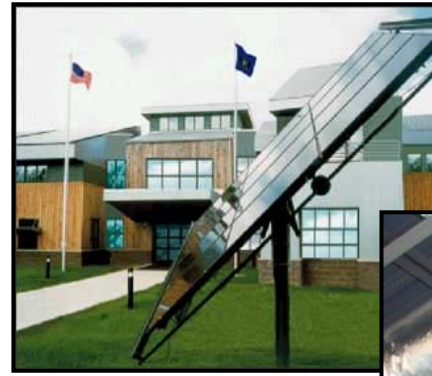
Selection of Materials



Energy & Buildings

Commercially available, cost-effective technologies could reduce energy consumption by 1/3.

US Department of Energy



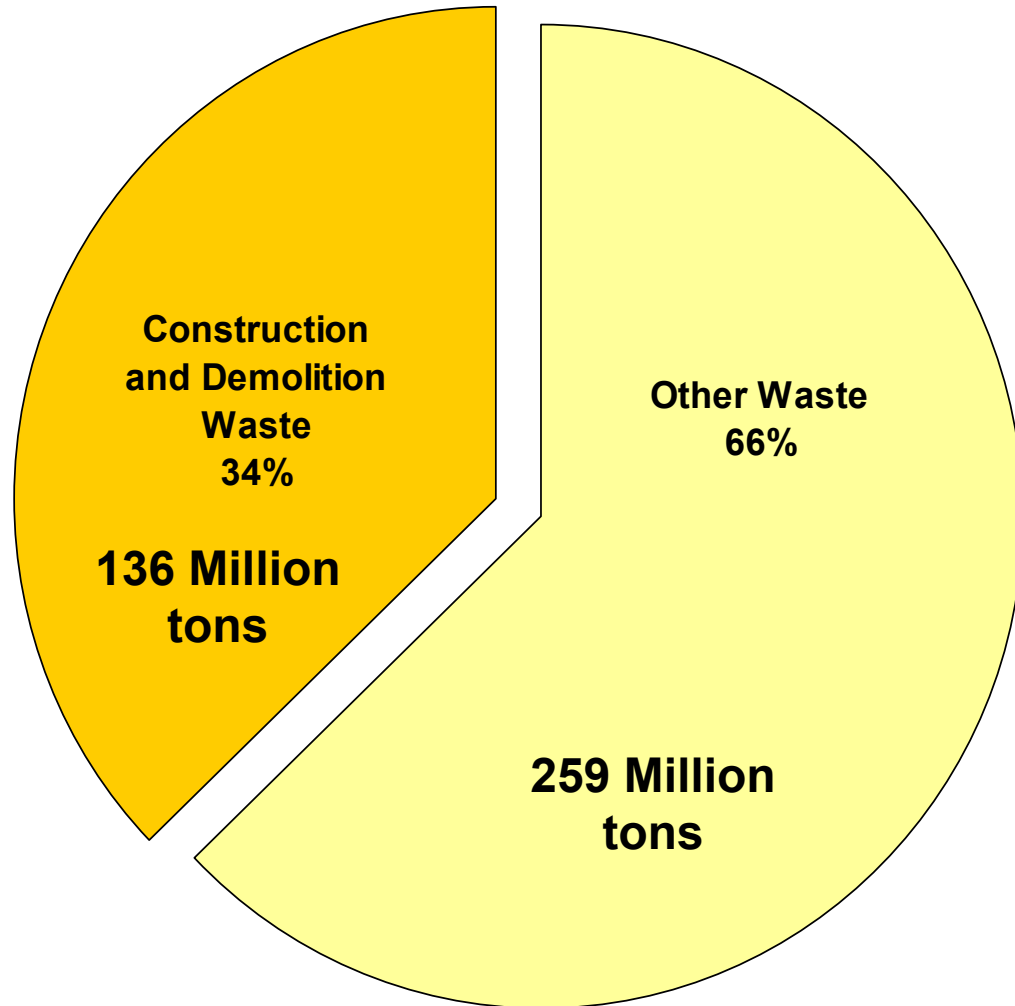
Health & Buildings

- 30% - 50% of all US Buildings have or are developing Sick Building Syndrome
- EPA has ranked Indoor Air Pollution as 4th largest of 31 environmental concerns
- Lost Productivity & Sick Leave estimated at \$60 billion dollars

Water & Buildings

- Average water use is 125 gallons/person/day
- Approximately 1/2 goes to landscape
- The US consumes 5 billion gallons of potable water/day just to flush toilets
- 22% of Water Usage of typical commercial construction goes to Landscaping

Waste Production





\$32 Million Award

[Back to Toxic Mold Updates](#) [Back to WSH&B Home](#) [Email to Stephen J. Henning](#)

Insurers watch mold case

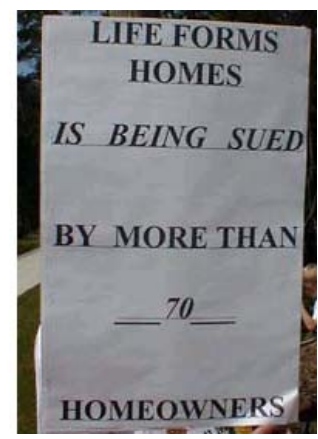
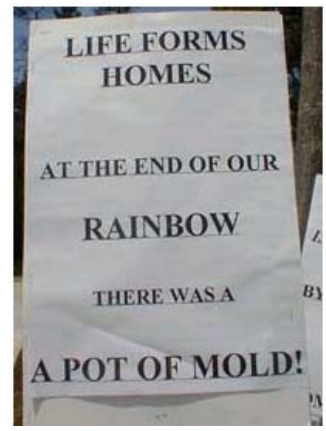
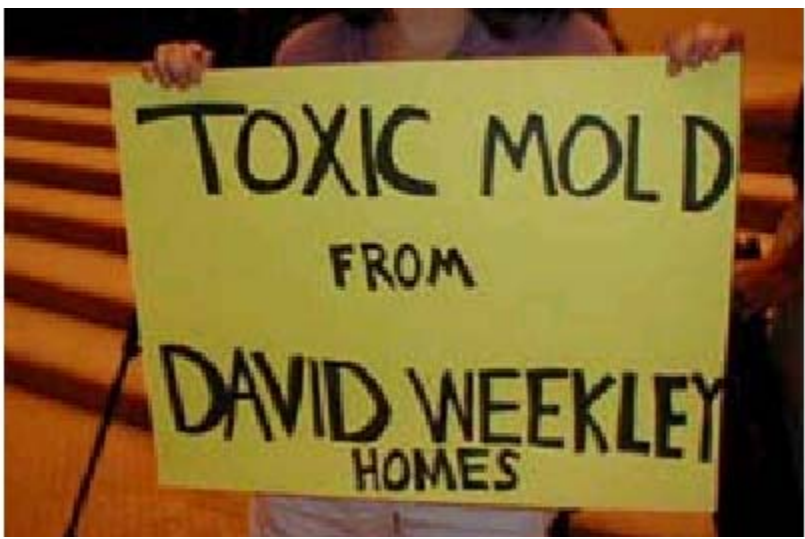
\$32 million award sends tremor through industry

Life Forms Homes In The Woodlands, Texas



INDOOR POLLUTION

Legal Liability for Mold Contamination



Which of these is a Green Building?



**They
all
are**

“Green” Programs

National Programs



Raising the Standard for Home Environments



State Programs



Built Green Colorado
HBA of Metro Denver



Florida Green Building Coalition



Federal Programs



Green Builder Programs



Clark County HBA



Denver HBA



Kitsap County HBA



City of Austin



Central New Mexico
HBA



Suburban Maryland Building
Industry Association

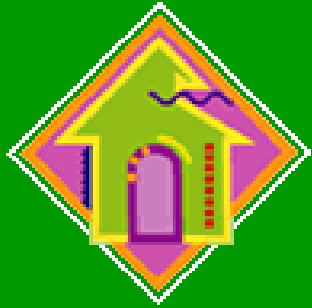
Greater Atlanta HBA

City Programs



State Green Building Programs

Florida Green Building Coalition



Florida Green Home Designation Standard Checklist

1. Energy (Building Envelop/Systems)

- Code/Ratings
- Design

2. Energy (Appliances, Lights, Amenities)

- Energy Efficient Appliances/Amenities
- Energy Efficient Lighting

3. Water

- Appliances
- Greywater
- Rainwater Harvesting
- Installed Landscape
- Installed Irrigation

4. Site

- Native tree and plant preservation
- On-site use of cleared materials
- Erosion control/topsoil preservation
- Drainage/retention

5. Health

- Combustion
- Moisture Control
- Ventilation
- Source Control
- Cleanability
- Universal Design

6. Materials

- Structure
- Sub-Assembly
- Partition/Trim
- Finishes
- Durability
- Waste Management

7. Disaster Mitigation

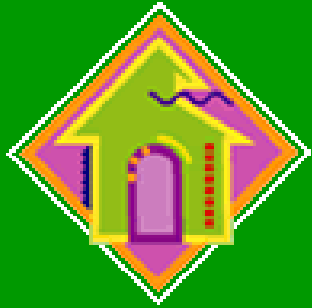
- Hurricane
- Flood
- Wild Fire
- Termites

8. General

- Small House Credit
- Renewable power generation
- Reconfigurability
- Lot Choice
- Other

State Green Building Programs

Florida Green Building Coalition



Florida Green Development Designation Standard

1. Protect Ecosystems and Conserve Natural Resources
2. Create a Green Circulation System
3. Green Utilities Practices
4. Amenities
5. Covenants and Deed Restrictions
6. Provide Educational Information to Help Achieve and Promote Green Living Practices

Commercial

Sections of the Program

Sustainable Sites	14 Points
Water Efficiency	5 Points
Energy & Atmosphere	17 Points
Materials & Resources	13 Points
Indoor Environmental Quality	15 Points
Core LEED™ Points	64 Points
Innovation and Design Process	5 Points
TOTAL LEED™ Points	69 Points

Certified 26-32 Silver 33-38 Gold 39-51 Platinum >52

Existing Programs



for
New
Construction

For building owners and design teams that address the new building design and construction or major renovations process. Also referred to as LEED 2.0.



for
Core and
Shell

For developers and design teams that address the new building design and construction process for buildings where the interiors are not part of the initial design process.



for
Commercial
Interiors

For building owners, tenants and design teams that address commercial interiors design and installation process. (Note: process can be driven by either owners or tenants.)



for
Existing
Buildings

For building owners and service providers that address building operation and on-going upgrades and performance improvements.



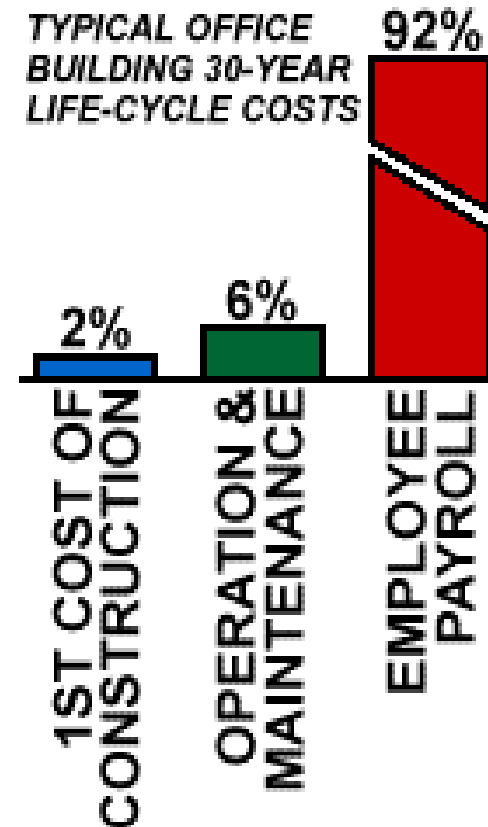
for
Residential
Buildings

For residential building owners, developers and design teams that address the new residential building design and construction process.

Why are Owners striving for Green/LEED™

Improved Indoor Environmental Quality

- Indoor Environmental Quality Enhancements
 - Air Quality
 - Light Quality
 - Water Quality
- Productivity Enhancements (\$\$)
 - Increased output (ranges from 5%- 16%)
 - Better Accuracy (20%)
 - Higher Sales (40%)
 - Reduced Absenteeism (by 15% to 40%)
- Sick Building Syndrome Liability Reductions (\$\$)



Facts provided by the Green Building Alliance

Why are Owners striving for Green/LEED™

Cost Reductions

- First Costs
- Life Cycle Costs
- Company Operational Cost (People)
- Facility Operations Costs (Buildings)
 - Energy Savings of between 25% - 50% are common
 - Some buildings have achieved as high as 90%
- Maintenance Costs

- First Costs are higher if design synergies are not utilized. The costs go up exponentially the further into design the project goes.

Corporate Greening

Green Learning

- Common Knowledge Base
- Green Team Formation
- Business Unit/Division Greening

Green Visioning

- Corporate Vision
- Quantifiable Goals
- Goal Prioritization

Green Action Plan Development

- Roadmap Goals
- Vision & Support from the “top”
- Solutions from the “ground up”

Corporate Greening

Evaluate

- Reward innovation
- Quantify and Qualify Benefits
- Making money vs. Saving money
- Shareholder Value
 - Life Cycle Cost Analysis
 - Liability
 - Public Opinion

Benefits: Image

- Reduced Impact of Design and Construction
- Reduced Impact of business operations
- Leadership in Corporate Caring
- Environmental Consciousness
- Employer of Choice
- Good Corporate Citizen – Minimizing Impact
- Market Differentiation
- Dow Jones Sustainability Index
- ISO 14001 Compliance

Clients of the Green Movement

Federal & State Government

National

- GSA Public Building Service
 - “Buy Green” Program
 - “Build Green” Program
 - Largest Land owner
 - Over 400,000 facilities
- EPA
- Dept of Energy
- Dept of Defense (SPiRiT)
- National Park Service

States

- ◆ State of Pennsylvania
- ◆ State of California
- ◆ State of Washington
- ◆ State of Oregon
- ◆ State of Colorado
- ◆ State of New York
- ◆ State of Florida
- ◆ State of Wisconsin

Clients of the Green Movement

Regional & City Government

Cities

- Chicago, IL
- Seattle, WA
- Portland, OR
- Eugene, OR
- San Francisco, CA
- Los Angeles, CA
- San Diego, CA
- San Mateo, CA
- Santa Monica, CA
- San Jose, CA
- Gainesville, FL
- Pittsburgh, PA
- Austin, TX
- Dallas, TX
- Atlanta, GA
- Las Vegas, NV
- Fayetteville, AK
- Cambridge, MA
- Boulder, CO
- Vail, CO
- Olathe, KS
- Buffalo, NY
- Binghamton, NY
- Fairfax, VA

Clients of the Green Movement

Corporate & Higher Education

Corporate

- Nike
- State Farm
- Blue Cross / Blue Shield
- Durst Organization
- Microsoft
- Oracle
- Interface
- Herman Miller
- Johnson Controls
- American Honda
- Technology Park Partners
- Goldman Sachs

Higher Education

- Emory University
- University of Florida
- Florida Gulf Coast University
- MIT
- Harvard
- Cal Poly
- UNC-Chapel Hill
- Stetson University
-Over 30 More

Project Greening

PRE-DESIGN

- Qualify Design Team
- Management Options
- Stakeholder Input – include employees & neighbors
- Vision and Goals – interdisciplinary design charrette
- Sustainability Matrix – environmental, functional & life-cycle cost objectives
- Incentives and Codes / Certifications
- Benchmarking



CONCEPT DESIGN

- Develop Sustainable Design Concepts
- Research and Analyze – feasibility of options, ex. systems & materials
- Prioritize Objectives – ex. LEED™ rating level

Project Greening

SCHEMATIC DESIGN

- Review Sustainability Objectives
- Sustainable Design Evaluation/Revision
- Modeling Energy & Life-Cycle Costs

DESIGN DEVELOPMENT

- Sustainable Design Systems and Materials
- Outline Green Design Specifications

CONSTRUCTION DOCUMENTS

- LEED™ Certification Requirements
- Green Specifications
- “Check-off”

Project Greening

CONSTRUCTION

- Worker Environmental Education
- Sustainable Construction Process – ex. C&D/Erosion

BUILDING COMMISSIONING

- As-builts
- “Owners Manual”

POST-OCCUPANCY

- Occupant Satisfaction
- Energy Star™ Benchmarking
- “Lessons-Learned”
- Certification/incentives

Questions

jennifer@constructgreen.com

(239) 229-3177