



**SOUTHERN ENERGY EFFICIENCY CENTER**

*Building Energy Solutions for the South*

**SEEC**  
**December 2008 Update**



# Mission

- ◆ The Southern Energy Efficiency Center (SEEC) is a pilot, high-performance buildings technology application center serving the southern United States.
- ◆ Its overall mission is to leverage the existing interactions and outreach activities of the SEEC principals and partners to **substantially increase the deployment of high-performance, beyond-code buildings across the southern region of the U.S.**
- ◆ Primary funding is from the U.S. Department of Energy Building Technologies Program, administered by the National Energy Technology Laboratory.



# Goals

- ◆ Build collaborative partnerships with
  - state and local governments
  - the building delivery industry
  - product manufacturers & supply chains
  - utilities
  - consumers and
  - other energy efficiency stakeholders



# Goals

- ◆ Establish consensus-based goals, priorities and strategies for deployment of high performance, beyond-code buildings at the regional, state and local levels



# Goals

- ◆ Media Outreach
  - Single-source web site
  - Regular releases, interviews and follow-up with media sources



# Goals

- ◆ Provide training, certification and education to a wide spectrum of the building design and construction, codes and standards, and consumer marketplace



# Goals

- ◆ Measure project energy savings using established verification tools

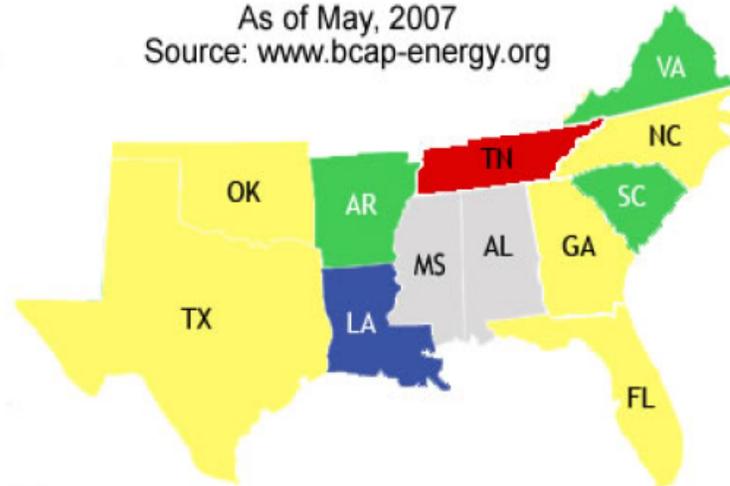


# Serving 12 States

## Residential State Energy Code Status

As of May, 2007

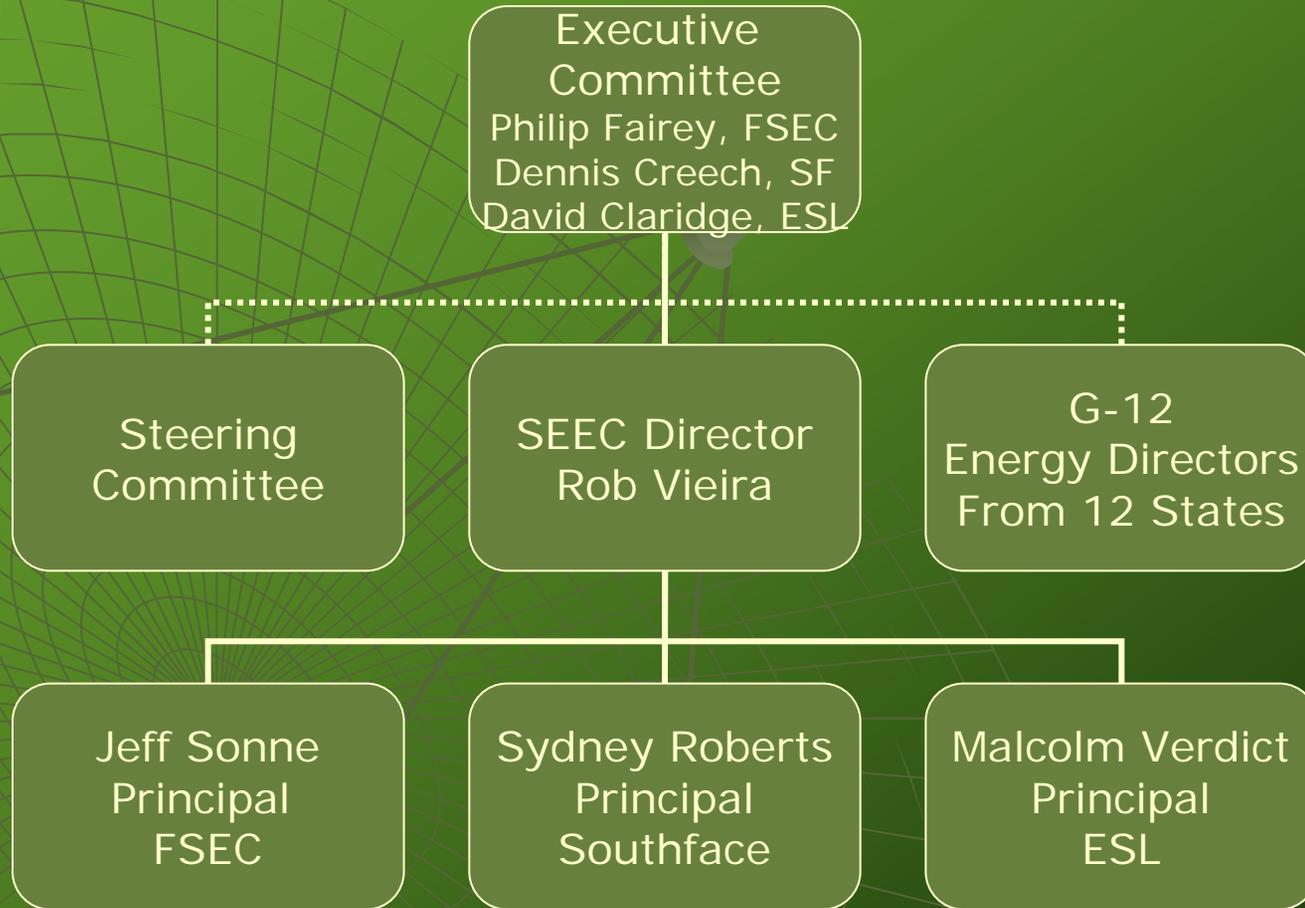
Source: [www.bcap-energy.org](http://www.bcap-energy.org)



- Adopted code meets or exceeds 2006 IECC or equivalent
- Meets 2003 IECC or equivalent
- Meets 1998-2001 IECC or equivalent (meets EPCA)
- Precedes 1998 IECC or equivalent (does not meet EPCA)
- No statewide code



# Organization





# Milestone Chart

Activity / Milestone *	Q1	Q2	Q3	Q4	Q5	Q6	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Teams (Lead first)
Activity codes:	S-Start	F-Finish	C-Continuing	G-Go/No-Go points	D-Deliverable	q-quarterly report													
<b>TASK 1.0 Partnership Development</b>																			
1.1 Establish SEO Group of 12	S		D1	F															All
1.2 Partnership Requirements	S			D2	F														All
1.3 Recruit Stakeholders	S				D3	F													All
1.4 Maintain Partnerships	S	q	q	q	q	D4,G	q	q	q	D4,G	q	q	q	D4,G	q	q	q	D4	All
<b>TASK 2.0 Resource Development</b>																			
2.1 Develop SEEC Web	S			D5	F														FSEC, ESL, SF
2.2 Regional Cost Database	S					D6	F							D6					FSEC, ESL, SF
2.3 Educational Materials				S		D7,G			D7				D7		D7	F			FSEC, ESL, SF
2.4 Existing Methods and Tools				S		D8,G				D8,G				D8,G				D8	ESL, FSEC, SF
<b>TASK 3.0 Technical and Policy Assist</b>																			
3.1 Regional Baseline(s)			S			D9,G				D9				D9				D9	ESL, FSEC, SF
3.2 Top 10 Regional Goals			S			D10	F												SF, FSEC, ESL
3.3 "Beyond Code" Ordinance(s)			S						D11	F									FSEC, ESL, SF
3.4 Building America Homes			S			D12				D12				D12				D12	FSEC, ESL, SF
<b>Task 4.0 Education &amp; Training</b>																			
4.1 Professional Training		S	D13	D13	D13	D13	D13	D13	D13	D13	D13	D13	D13	D13	D13	D13	D13	D13	SF, FSEC, ESL
4.2 Research that Works"				S		D14			D14				D14		D14			D14	FSEC, ESL, SF
4.3 Consumer Outreach	S			D15		D16		D15		D16			D16		D16			D16	FSEC, SF, ESL
4.4 Building Conferences	S					D17				D17				D17				D17	SF, ESL, FSEC

\* for key to milestone and deliverable codes see Table 3



# Deliverables

- ◆ By June 30, 2008
  - G-12 Meeting
    - ◆ Feb 2008 at NASEO, Washington DC
    - ◆ Also with most members at SEEA meeting in Atlanta, Nov. 2008
  - One workshop
    - ◆ Building Energy-Efficient Green Homes, April, Cocoa, FL





# Deliverables

- ◆ By Sept. 30 , 2008
  - Draft Partnership Agreements
    - ◆ Agreement drafted in March 2008
  - Website
    - ◆ [www.SouthernBuildings.org](http://www.SouthernBuildings.org)
  - Steering Committee Recommendations –
    - ◆ postponed until December





# Deliverables

## ◆ 30+ Stakeholders by Dec. 31, 2008

- [ACEEE](#)
- [AIA New Orleans](#)
- [Alabama Dept. of Economic & Community Affairs](#)
- [Arkansas Energy Office](#)
- [Atlantic Trust - Kendeda Fund](#)
- [Building Performance & Comfort, Inc](#)
- [Cambridge Homes](#)
- [Center for the Commercialization of Electric Technologies](#)
- [Cosella-Dorcken Products](#)
- [Dallas Fort Worth International Airport Board](#)
- [EarthCraft House](#)
- [EarthCraft Virginia](#)
- [Electric Power Research Institute](#)
- [Electric Utility Marketing Manager of Texas](#)
- [Energy Conservatory](#)
- [Energy Knowledge Group](#)
- [Enterprise](#)
- [Federation of American Scientists](#)
- [Florida Dept. of Community Affairs](#)
- [Florida Dept. of Environmental Protection](#)
- [Florida Natural Gas Association](#)
- [Florida Public Utilities](#)
- [Florida Solar Energy Research and Education Founda](#)
- [G.W. Robinson](#)
- [GA Environmental Facilities Authority](#)
- [GA Tech / College of Architecture](#)

## ◆ 30+ stakeholders

- [Global Green USA / New Orleans](#)
- [Greater Atlanta Home Builders Association](#)
- [Greenprints 2008](#)
- [Habitat for Humanity International](#)
- [Home Builders Association--Metro Orlando](#)
- [Home Depot Foundation](#)
- [Jacksonville Electric Authority](#)
- [Johns Manville](#)
- [Liberty Building Forensics Group](#)
- [Louisiana Dept. of Natural Resources](#)
- [LSU Ag Center](#)
- [NAIMA](#)
- [New Orleans Regional Planning Commission](#)
- [North Carolina State Energy Office](#)
- [Oncor](#)
- [PolySteel](#)
- [Progress Energy](#)
- [RESNET](#)
- [South Carolina Energy Office](#)
- [Southeast Energy Efficiency Alliance](#)
- [Southface](#)
- [Texas A&M / College of Architecture](#)
- [Texas A&M Engineering](#)
- [Texas State Energy Conservation Office](#)
- [Tommy Williams Homes](#)
- [USGBC - Atlanta Regional Chapter](#)
- [WCI Communites, Inc.](#)



# Deliverables

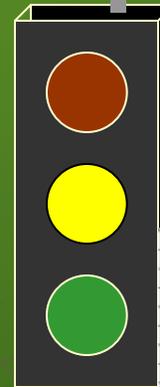
- ◆ 20 Workshops By Mar. 31, 2009
  - High Performance Building Series
  - Building Energy-Efficient Green Homes
  - Energy Efficiency and Green Building training for 25 Habitat for Humanity International affiliates.
  - Developing sustainable training for NeighborWorks Training Institute.
  - Developed RESNET Green Rater training. Taught at 2008 RESNET conference.
  - Will teach at 2009 national RESNET conference.

- Presentation on Builders Challenge at NC ENERGY STAR Conference.
- Updated EarthCraft House Builder training to incorporate Building America Builders Challenge. Taught courses.
- Updated EarthCraft House Realtor training to incorporate Building America Builders Challenge. Taught courses.
- Updated HERS training to incorporate Building America Builders Challenge. Taught courses.
- LEED for Homes course.



# Deliverables

- ◆ By Mar. 31, 2009
  - Steering Committee with Go – No Go
  - Cost Database Established
    - ◆ This task revised
  - Four sets of printed promotions
    - ◆ Top Ten Commercial Building Recommendations
    - ◆ Energy-efficient School Humidity Control
    - ◆ Two others TBD



Material	Unit	Quantity	Price	Total
Carbon Steel Pipe 3"	m	0.0000	0.00	0.00
Carbon Steel 20mm (3/4") Welded Sch 40	m	3.2808	4.67	15.42
Black Steel Pipe Gr-40 20mm (3/4")	m	3.2808	5.45	17.88
Carbon Steel 25mm (1") Welded Sch 40	m	3.2808	5.45	17.88
Black Steel Pipe Gr-40 25mm (1")	m	3.2808	5.09	16.70
Carbon Steel 3"			7.78	7.78
Carbon Steel 5"			11.88	11.88
Black Steel Pi			20.89	20.89
Carbon Steel 7"			23.35	23.35
Black Steel Pi			23.87	23.87
Carbon Steel 1			38.92	38.92
Black Steel Pi			34.06	34.06
			45.82	45.82
			96.52	96.52
			132.33	132.33
Welded Sch 40	m	ft	3.2808	252.99

**Enter Pro Rate Factor**

Please enter the material pro-rate factor.

**Top Ten Checklist**  
for Energy-Efficient Buildings  
for the Southern United States

Commercial and institutional buildings vary greatly from one to another, in size, use and type of construction. We cannot, in this brief document, address a wide range of building types. For purposes of this Top Ten Checklist we are assuming a medium-sized (20,000 to 50,000 SF) office building located in areas with hot and humid summers. The issues that are raised here may equally apply to schools, churches, theaters, and some retail buildings. Because of space limitations, we have included references (pointed to here) within the text to refer the reader to additional information sources.

**1. Building Design and Heating/Cooling Load Management**

**1. Create a high performance building envelope**

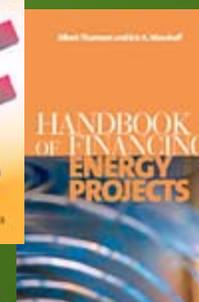
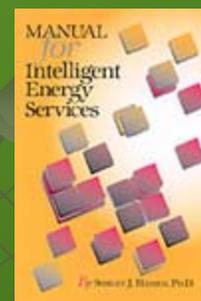
- During design, specify that the building envelope should be airtight. Consider setting a specific airtightness objective, and then test the building for compliance with this tightness specification once construction is complete.
- Locate the air and thermal insulation boundaries in the same plane, and maintain continuity from one plane to another. In most commercial buildings this would be implemented by locating the insulation at the roof deck and not venting the space above the ceiling. As a result, the ceiling space is located inside the air and thermal boundaries of the building. This approach creates a more energy-efficient environment, so that if there is leakage or unbalanced return air are occurring, from the same leaked air flows to and from the ceiling space introduce little water vapor to the building and create little energy waste. This also reduces the potential for moisture condensation problems, because the dew point temperature of the air in the ceiling space will generally remain below the temperature of ducts and chilled water piping.
- Take care in the placement of intentional and unintentional vapor barriers or retarders in wall assemblies (ASHRAE, 2000, 2004). In general, vapor barriers should be located on the warm side of the wall assembly. Avoid placement of multiple vapor barriers within building cavities. If moisture gets into the space between the two vapor barriers, it then becomes difficult for this moisture to dry either to the interior or to the outdoors. Consider use of vapor impermeable rigid insulation board in wall assemblies, which always has a warm side, thus eliminating an unvented condensing plane.
- Reduce convective solar radiation through windows, which can add considerably to cooling energy use, peak electrical demand, and time-of-day glare and comfort problems.
  - Limit window area to only that which is needed for daylighting and views to outdoors since the thermal resistance of windows are typically 1/10 times less than opaque wall sections.
  - Orient the building so that fewer windows are facing east or west.

Southern Energy Efficiency Center 1

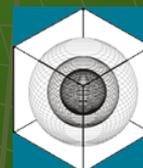


# Deliverables

- ◆ By Mar. 31, 2009 - continued
  - M&V protocol
  - Regional Baseline
  - Regional Goals
  - Outreach Plan
  - Specific Outreach
    - ◆ 5-course workshop series on High Performance Green Buildings
  - BA Case Studies
    - ◆ TBD
  - Two Conferences
    - ◆ Greenprints 2008
    - ◆ 16<sup>th</sup> Hot Humid Symposium



**GREENPRINTS 2007**  
Sustainable Communities *by Design*



Fifteenth Symposium on  
**Improving Building Systems  
in Hot and Humid Climates**



# Deliverables

- ◆ Beyond Mar. 2009
  - G-12 Meetings
  - Workshops
  - Outreach
  - Case Studies
  - Website and Cost Database Updates
    - ◆ Changed to webinars
  - Green Building Ordinances



# Only Green Building Program Partner

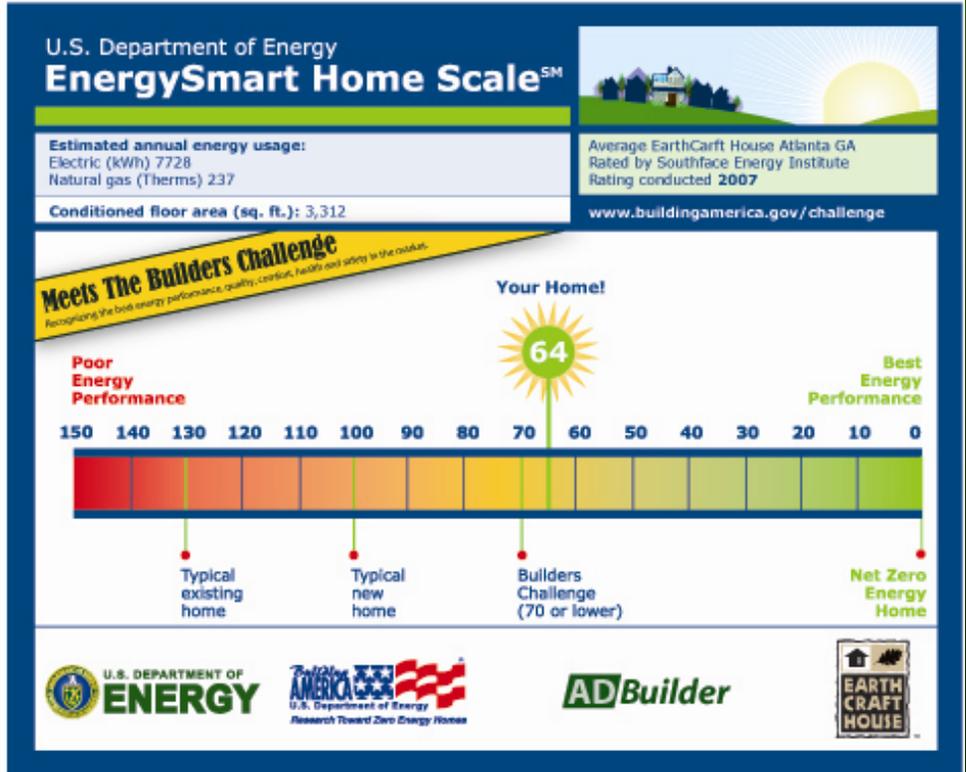


## Builders Challenge

Recognizing Energy Leadership in Homebuilding



Responsible Solutions for Environmental Living



# SEEC Schools Outreach

- ◆ Online module
- ◆ Presentations to decision makers and educators
- ◆ LEED admin and energy modeling for Georgia schools



**Southface** | ENERGY STAR for K-12 schools | [HOME](#)

**Green Schools Toolkit** | **Green Building Decision Guide** | **School Case Studies**

**ENERGY STAR Tools and Resources**

- [K-12 website](#)
- [Portfolio Manager](#)
- [Target Finder](#)
- [Kids website](#)
- [ENERGY STAR labeled Schools](#)
- [ENERGY STAR Challenge](#)
- [FREE web training](#)

Top performing ENERGY STAR labeled schools cost 40c less per square foot to operate than the average performers.

**Green Schools Toolkit**  
Tools and Resources for K-12 Schools

This website resource is designed to provide K-12 schools with resources specifically geared for school designers and builders, energy and facility managers, superintendents and boards of education, as well as teachers, students and parents. By simply clicking on the appropriate button below, you can start taking advantage of the abundant **AND FREE** resources available to you today.

- Architects, Designers, and Contractors**
- School Facility and Energy Managers**
- Superintendents, Boards of Education & Administrators**
- Teachers, Students, Parents**

Southface has been awarded a grant from the Department of Energy to help school districts in Georgia learn more about the free resources provided by the ENERGY STAR™ program. Together with the Georgia Environmental Facilities Authority (GEFA) and Southeast Rebuild Collaborative (SRC), our goal is to improve efficiency in our schools and institutions by at least 10% in the upcoming year.

**Allied Organizations**

[www.southeastrebuild.org](http://www.southeastrebuild.org)  
Rollover for info

[www.greenandhealthy.org](http://www.greenandhealthy.org)  
Rollover for info

**Georgia PTA**  
everychild.onevoice.<sup>®</sup>  
[www.georgiapta.org](http://www.georgiapta.org)

**Georgia Environmental Facilities Authority**  
Rollover for info

**SEEC** Southern Energy Efficiency Center

**Southface**  
Commercial Green Building Services  
[Webpage link - Rollover for info](#)

Southface Energy Institute is located at 241 Pine Street NE, Atlanta, Georgia 30308  
Phone: (404) 872-3549 Fax: (404) 872-5009



# Greenprints Conference



2008 Keynote  
Kenneth Ostrowski  
McKinsey



**March 25 & 26, 2009**  
**Atlanta, GA**



2009 Keynote  
Edward Mazria  
Architecture 2030



# Atlanta Green Building Task Force

## Commercial Green Building Ordinance

- ◆ 16 Lead Partner Meetings
- ◆ 3 Drafts of City of Atlanta Green Building Ordinance Released for Public Comment
- ◆ 4 Public Stakeholder Meeting
  - Average of 60 participants
- ◆ 6 Individual Stakeholder Meetings
  - Council for Quality Growth
  - Atlanta Apartment Association
  - Greater Atlanta Homebuilders Assn
  - ULI Atlanta Council
  - AIA Atlanta Chapter
  - City Council Membership
- ◆ Scheduled to be Presented to Atlanta City Council in January 2009



# Florida cost share

- ◆ Progress to Date:
  - Green Building Model Ordinance for Local Governments
    - ◆ Basis for Charlotte County
  - Campaign Plan for Green Buildings
  - New web site:  
*MyFloridaGreenBuilding.info*
    - ◆ Includes new Excel solar water heater calculator

## MODEL GREEN BUILDING ORDINANCE



Report of the Florida Green Building Workgroup to  
The Florida Building Commission  
Prepared By:  
Florida Solar Energy Center  
University of Central Florida  
January 25, 2008



# Florida cost share

- ◆ Also:
  - Cost and benefits of various building measures
  - Appliance standard recommendations
  - Tighter building codes





# More Information



SOUTHERN ENERGY EFFICIENCY CENTER

*Building Energy Solutions for the South*

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## Energy-Efficient Buildings

Reduce Costs...Improve Performance...Increase Comfort:

The Southern Energy Efficiency Center guides you to information, programs, incentives or people with the expertise you need to implement your project:

- Training and special events
- Data, facts, research reports, software tools
- Product and technology reviews
- Engineering analysis, design review or site assessments

## Mission Statement

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## What is DOE's New E-scale?



The E-Scale is an easy-to-understand graphic that allows homebuyers to see — at a glance — how the performance of a particular home compares to that of others.

See the Builders Challenge on the Programs page for more information.

[www.SouthernBuildings.org](http://www.SouthernBuildings.org)