



## Will Your Green Building Fall Short of Your Client's Expectations?

A recent study finds about **25% of LEED Certified buildings use more energy than expected and about 12% use more energy than allowed by the minimum code!**

In field testing of over 100 commercial buildings, we identified failures that cause unexpected performance problems and energy waste including:

- Air and thermal envelope defects
- Uncontrolled air flows
- Inefficient ventilation and humidity control methods

Ensure *your* next green building achieves high performance.

Attend the training series:

### DESIGNING AND MAINTAINING THE HIGH PERFORMANCE GREEN BUILDING

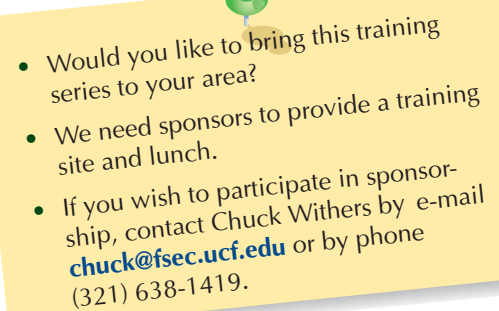
A five-course series taught by building science experts and research faculty of the University of Central Florida.

Sponsored by:



U.S. Department of Energy  
**Energy Efficiency and Renewable Energy**

(Your organization here)

- 
- Would you like to bring this training series to your area?
  - We need sponsors to provide a training site and lunch.
  - If you wish to participate in sponsorship, contact Chuck Withers by e-mail [chuck@fsec.ucf.edu](mailto:chuck@fsec.ucf.edu) or by phone (321) 638-1419.



SOUTHERN ENERGY EFFICIENCY CENTER

*Building Energy Solutions for the South*



FLORIDA SOLAR ENERGY CENTER®  
A RESEARCH INSTITUTE OF THE UNIVERSITY OF CENTRAL FLORIDA



# Designing and Maintaining The High Performance Green Building Course Series

Attend all five courses of this series and pass the exam in courses 1-3 to earn FSEC\* Green Commercial Building Design and Maintenance Certificate.

## Course 1: Designing Building Envelopes to Control Air and Moisture in High Performance Green Buildings

Course provides a balance of lecture, live model demonstrations and class exercises so students will understand building envelope characteristics that control heat and moisture transport. Participants will become familiar with the four types of water movement – bulk, capillary, vapor diffusion, and air transport in hot and humid climates. We'll learn the relevance of material properties to energy efficiency, moisture accumulation, and durability, within the envelope assemblies. 7 hours.

## Course 2: Designing and Maintaining Building Air Flows in High Performance Green Buildings

Air flow and pressure problems are silently undermining green goals of maintaining healthy, energy efficient and, durable buildings. This course uses several case studies and research by instructors with first-hand experience to help students understand how the four primary forms of uncontrolled air flow are likely to undermine LEED certified buildings. We recommend specific measures as part of commissioning or recommissioning. 7 hours.

## Course 3: Designing and Maintaining HVAC Systems for High Performance Green Buildings

This course examines cooling system characteristics, advanced dehumidification systems and ventilation control strategies. HVAC systems can be an important part of conserving energy, maintaining comfort, and controlling humidity in green buildings. Case studies will be used that highlight re-commissioning measures that result in significant energy savings. This course is designed to accommodate those not very familiar with HVAC who want to learn more, but has detailed information about advanced systems that will benefit those more experienced. 7 hours.

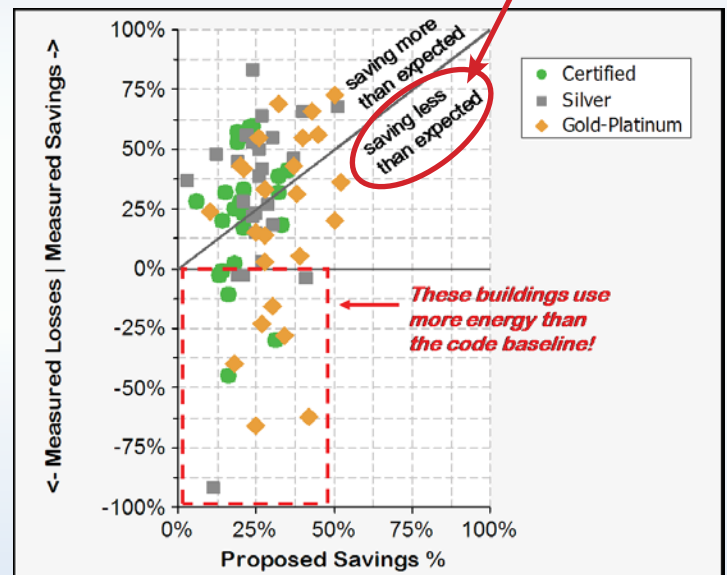
## Course 4: Design Charrette-Practice Design of a High Performance Green Building

This course applies knowledge gained from the first three segments of the five course series "Designing and Maintaining the High Performance Green Building Series." Students will benefit from the experience of other professionals. Participants will work in small groups to discuss ideas and describe construction and equipment details for achieving a high performance green school building. Each group will discuss their design ideas at the end of the day. 7 hours.

## Course 5: Commercial Energy Code and Green Building Modeling using EnergyGauge Summit

This course will teach participants how to use software for energy code compliance for Florida and other states that use ASHRAE 90.1. Students will also learn how to generate ASHRAE 90.1 ratings, evaluate federal tax deductions for energy efficient buildings and calculate LEED credits, including easy on-line reporting feature. Designed for first time and experienced users, students can work alone or in teams to input data and generate output reports which illustrates energy impacts. Come and see how easy it is to model building energy use. 7 hours.

You don't want your building to end up here!



### Measured versus Proposed Savings Percentages

Source: Cathy Turner and Mark Frankel Final Report to USGBC "Energy Performance of LEED® for New Construction Buildings" New Buildings Institute March 4, 2008

\* The Florida Solar Energy Center (FSEC) is a research institute of the University of Central Florida, conducting building energy research and training since 1980.