



Energy Efficiency Training Series

In conjunction with the Association of Energy Engineers

Building Envelope

Making your building efficient from the outside in.

OVERVIEW

This course is designed for facility managers, engineering or maintenance staff, business owners, managers, or design professionals to understand and improve the performance of the building envelope. The morning session will familiarize attendees with the fundamentals of building science. The afternoon session will focus on the building envelope and its impact on energy use. We will discuss the advantages and disadvantages of various systems and clarify common misconceptions.

A properly functioning building envelope reduces energy costs and improves occupant comfort. Upon completion of this all day workshop you will gain an understanding of:

- Heat, air, and moisture flow in buildings
- Interactions between mechanical systems, occupants and the building envelope
- Pros and cons of different building envelope load estimation methods
- Goals for the performance of glazing, roofing, and rooftop systems
- Performance impacts of the building envelope on specialized building spaces, like data centers
- APS Solutions for Business incentive program

March 24, 2010

7:30 a.m. – 4:30 p.m.

Downtown Phoenix Sheraton
Paradise Valley Room
340 N 3rd St
Phoenix, AZ 85004

Breakfast and lunch provided

This is computer based training,
laptops are highly recommended.

REGISTRATION

**Building
Envelope**
March 24, 2010

COST

\$150

**\$75 for APS non-residential customers
and APS Solutions for Business Trade Allies.**

To Register, [Click Here](#)

**DEADLINE TO REGISTER:
March 19, 2010**

INSTRUCTOR

Chip Lamphere

Chip Lamphere joined Advanced Energy's Applied Building Science team to provide training and consulting services for programs benefiting builders and contractors throughout the country. Lamphere delivers training to classes nationwide, reaching hundreds of builders, realtors and subcontractors annually.

Dan Welch

With more than 25 years of energy efficiency and process improvement experience, Welch brings a wide range of experience to his work. He has been with Advanced Energy since 1994, focusing on energy intensive manufacturing processes and commercial buildings. He conducts training in a variety of technology areas and co-authored *Industrial Applications of Infrared Heating*. Welch's work with Advanced Energy also includes assisting customers with Strategic Energy Management plans, evaluating manufacturing problems and opportunities, and performing energy assessments for large commercial and industrial customers.

APS Energy Efficiency
Training Series in **2010**:

Indoor Air Quality

April 28, 2010
7:30 a.m. - 4:30 p.m.
Tempe Mission Palms

Retro Commissioning

May 19, 2010
7:30 a.m. - 4:30 p.m.
Downtown Phoenix Sheraton

Other classes coming in 2010

Whole Building Design
Motors
Pumping
Outdoor Lighting
Fan Systems

APS ENERGY EFFICIENCY PROGRAMS

The APS Solutions for Business program offers incentives for APS business customers who upgrade their facility with energy efficient equipment or construct a new energy efficient building. The program encourages business owners to invest in more energy efficient equipment and systems and provides support through energy study, design assistance, retro-commissioning and commissioning incentives. Contractors may apply to be approved program Trade Allies.

The program offers Energy Information Services (a web-based program) which can help you understand and control your facilities' electricity use. This service provides data on when, where and how much power is used in specific areas of each facility, so you can fine-tune equipment use and operations to optimize energy consumption.

Solutions for Business also provides a range of technical training opportunities. For a complete schedule of training workshops and detailed program information, please visit aps.com and click on "Business Rebates."

APS business customers can also take advantage of the many renewable energy resources available in Arizona like solar, wind, geo-thermal, biomass and bio-gas. To find out more about current APS Renewable Energy Incentives and program parameters, visit aps.com.