



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



Building Energy Codes

Stretch Your Training Dollars

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Objectives

- Provide information on common (innovative) training methods
- Provide information on training support available from DOE
- Brainstorm to refine key elements for successful training
- Gather information to help DOE provide better training materials for you
- Provide training resources to help you stretch your training dollars



Overview of Common Training Types

- Stand up training
 - Traditional method for code training. Typically one presenter in a training room with power-point style presentation.
- Web-Cast (video based satellite)
 - Provides live video to many locations simultaneously. Typically involves primarily video-based content. May be taped for future use.
- Web-Ex (online presentation)
 - Web based power point training with a speaker that can be directed to an individual desktop or small groups in multiple locations.
- Online Videos
 - Web based videos that allow a user to view them individually, at no specific time.
- Online Training (self paced)
 - Web based interactive training that provides information in a self-paced format. Typically done by an individual as time permits.



Characteristics of Typical Audience

- Code Official
 - May have a slight preference for traditional training. Typically has a very limited travel budget.
- Builder
 - Varies greatly. More builders are becoming familiar with technology and web-based tools, but many still prefer other (traditional) training methods. Time constraints may prevent travel.
- Architects and Engineers
 - Comfortable with technology (web-cast, web-ex, online self-paced training). May have continuing education requirements.





Overview of BECP materials

- Materials and presentations (may be customized for your region and code)
 - Case Studies (commercial and residential)
 - REScheck
 - Inspecting for the residential IECC (2000/2003)
 - COMcheck
 - Overview of most model energy codes (including notes)
 - Residential IECC (2000/2001/2003)
 - Commercial Envelope
 - Commercial Lighting
 - Commercial Mechanical
 - ASHRAE 90.1-1999/2001
 - Available online at:
<http://www.energycodes.gov/training/presentations.stm>
- Other materials that you need?



Summary of Approaches

- Partnership with DOE/PNNL may be a method to reduce cost and technical difficulty.

	Technical Support Needed	Implementation Cost*	Best Application
Stand up training	None	Low-Moderate	Small groups in one region
Web-cast (video/satellite)	May be needed	Moderate-High	Large groups with general subject
Web-ex (web presentation)	Required	High if broadcast tool is purchased.	Medium or Large groups, may be targeted to regions
Online Videos	May be needed	Moderate-High	Large groups with general or specific subject
Self-paced online training	Required	Low	Individuals with high motivation

*Implementation costs will vary significantly for different applications.



Stand up training

➤ Examples:

- Energy Code training offered earlier this week on the PA code

➤ Pros and Cons

- Can be very effective, especially in teaching technical topics
- Interaction at its best - Attendees can easily ask questions
- Satisfaction rates dependent on quality of presenter
- Best used when attendees are at the same “skill level”
- Relatively expensive on a per-person basis as class size should be limited.

➤ Technology Requirements

- Typically power point and a projector
- Adequate space and registration are critical to success





Web Broadcast Videos

➤ Examples:

- BECP satellite broadcast on ASHRAE 90.1
http://www.energycodes.gov/news/broadcasts/cast_01.stm

➤ Pros and Cons

- Attendees get benefit of group environment (when meeting in central local location), and can ask questions at the end.
- Best for informational forums versus technical instruction.
- Expensive to set up and administer, inexpensive for participants.

➤ Technology Requirements:

- Tool to broadcast the video (requires IT support)
- Appropriate presentation material
- Toll-free call in number
- Easily posted on a website for long-term education needs



Online Videos

➤ Examples:

- Arkansas – Kneewall Insulation
<http://www.1800arkansas.com/clearinghouse/index.cfm?page=indexBody&category=6>
- California – Ceiling Insulation
http://cec.ishow.com/mod/index.cfm?ModCon=fiin&SubCon=buen_res&TxtModCon=fiin_txt

➤ Pros and Cons

- Development cost high, low delivery cost.
- Can link to videos developed by others (i.e. BECP, etc.)

➤ Technology Requirements:

- Appropriate website/server and associated maintenance (typically requires IT support)



Web-Ex (online presentation)

➤ Examples:

- Idaho and Nevada Vented Crawlspace (group based)

➤ Pros and Cons

- Able to reach people in remote locations with little/no travel costs.
- Participants don't become lost because instructor controls the slides.
- Technology not widely available, and tech support may be needed.
- Interaction with instructor is limited, and can be awkward.

➤ Technology Requirements:

- Tool to broadcast the presentation (requires IT support)
 - Macromedia Breeze Meeting (<http://www.macromedia.com/>)
 - Meeting One (<http://www.meetingone.com/>)
 - PNNL system
- Toll-free call in number



Web-Ex (online presentation)

Macromedia - Breeze Overview - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://www.macromedia.com/software/breeze/overview/index.html?promoid=breeze_home_getstarted_demo_040604

Breeze Overview

1. Breeze Overview
2. Challenges
3. Imagine...
4. Macromedia Breeze
5. Breeze Capabilities
6. Breeze Solution
7. Leveraging Standards
8. Breeze Uses
9. Customer Success
10. Learn More

Macromedia Breeze

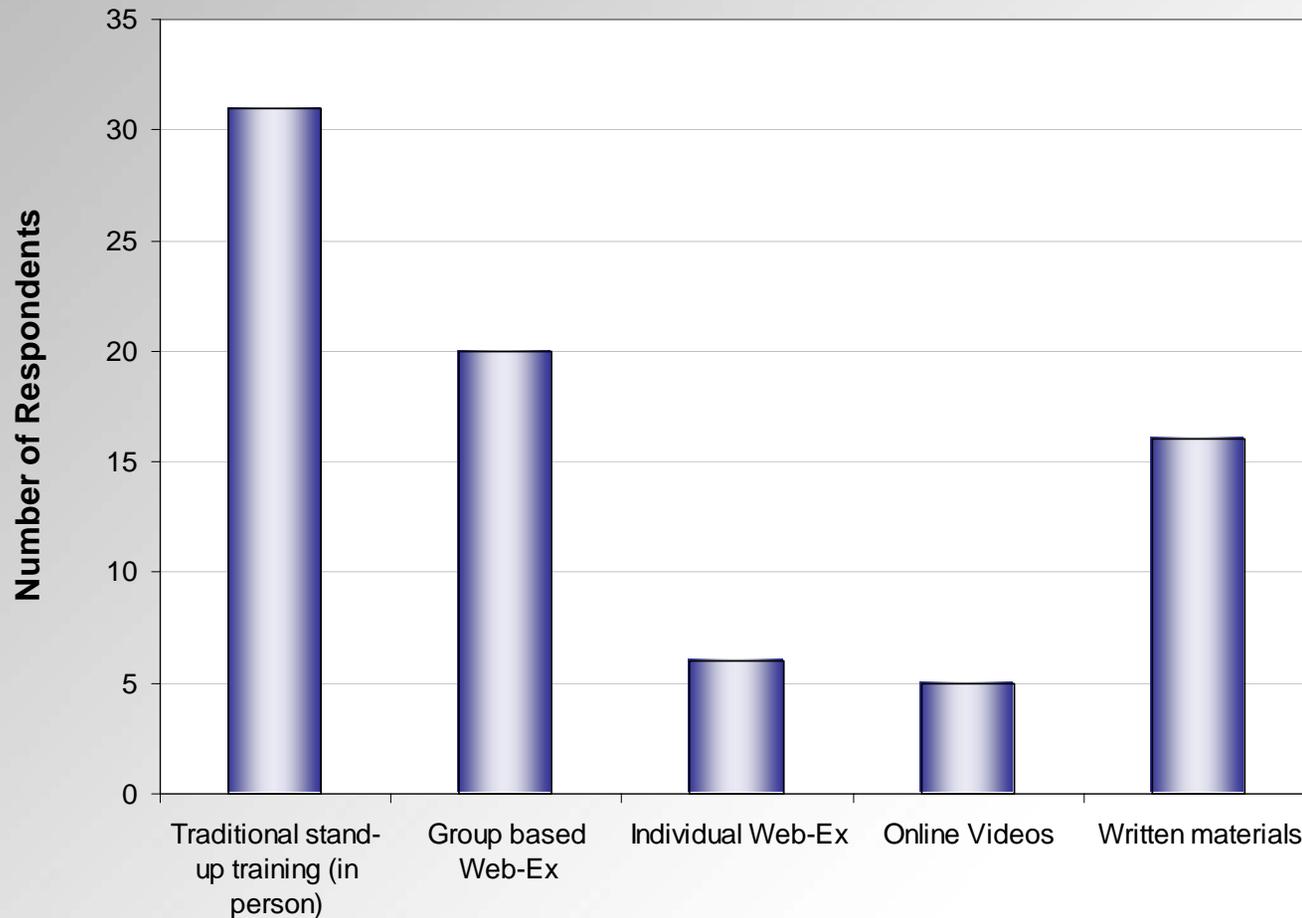
- Communicate...
- Collaborate...
- Train...
- ...Online with ease

Slide Notes [Pause] [Next] [Previous] Slide 4 / 10 | Playing 00:09 / 00:21 [Volume] [Macromedia Breeze logo]



Feedback from a recent Web-Ex (primarily code officials and HVAC contractors)

What types of training methods do you find most effective?





Self-paced Online Training

➤ Examples:

- http://www.energycodes.gov/training/res_wbt/index.stm
- <http://www.aia.org/conted/contedonline.asp>

➤ Pros and Cons

- Little/no interaction with instructor
- More effective when coupled with certification
- May be low cost if properly implemented
- Allows learners to move at their own pace, however this can mean that the training is never completed.



➤ Technology Requirements:

- Website with some scripting to control the content (typically requires IT support) for host



Self-paced Online Training: AIA

AIA | Continuing Education - Education Online - Microsoft Internet Explorer

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Address <http://www.aia.org/conted/contedonline.asp> Go Links



M P E C



THE AMERICAN INSTITUTE OF ARCHITECTS

Learn about Knowledge Communities

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- continuing education
- career center
- components
- AIArchitect
- awards and competitions
- college of fellows
- public affairs
- FAQs
- about the AIA
- find an architect
- buy AIA products
- purchase contract documents
- calendar

AIA eClassroom

Education Online, All the Time!
Achieve your lifelong learning goals and fulfill your continuing-education requirements with **AIA eClassroom** - 24 hours a day, 7 days a week. Offering many short, targeted courses, it's fast, simple, and easy to use!

Adding Value Through Mixed-Use Redevelopment	2 LUs (HSW)	<div style="background-color: #333; color: white; padding: 5px; text-align: center;">Highlights</div> <div style="background-color: #eee; padding: 5px;"> <p>Daniel Libeskind Convention Presentation For a limited time the Daniel Libeskind AIA convention presentation from May 10 is available at a 50% discount, and is available for \$49.95 for AIA members, and \$74.95 for nonmembers.</p> </div>
Building Codes Need Not Stifle Creative Design	2 LUs (HSW)	
The Expanding Universe of Architectural Services: New AIA Scope of Service Documents	1.5 LUs (HSW)	
Recent Significant Trends and Legal Cases Affecting the Architect	2 LUs (HSW)	
2002 Gold Medalist Forum	2 LUs (HSW)	

Done Internet



Self-paced Online Training: ICC

The screenshot shows a web browser window titled "International Code Campus - Microsoft Internet Explorer". The address bar shows "http://12.150.226.188/index.cfm". The page content includes a navigation menu on the left with items like Home, Newsletter, Online Catalog, Demo Course, Course Prices, About Us, Contact Us, Code Question of the Week, Submit Your Code Question, South Carolina Code Enforcement Officers, CEU Info, How to Enroll, and ICC Home. The main content area features a "Welcome!" message, a list of course areas, and a "Notice" section with a link to practice courses. A logo for "ICC CAMPUS Online" and the website URL "www.icccampus.org" are also present.

International Code Campus - Microsoft Internet Explorer

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Address <http://12.150.226.188/index.cfm> Go Links

*the online training resource
for the code professional*

ICC Campus Online

Username: Password: [New Users Register Here](#)

Home Welcome!

Newsletter

Online Catalog

Demo Course

Course Prices

About Us

Contact Us

Code Question of the Week

Submit Your Code Question

South Carolina Code Enforcement Officers

CEU Info.

How to Enroll

ICC Home

The International Code Council is setting the Standard for Building Safety. Courses on the campus are available in the following areas:

- Regulatory and Compliance
- Personal Development
- Community Safety
- Management Skills
- Accounting and Finance
- Office Skills
- Desktop Application

Notice

[Click here](#) for a list of the newly available 2003 Certification Examination Practice courses.

www.icccampus.org

Done Internet



Self-paced Online Training: AEE

AEEcenter Website - Microsoft Internet Explorer

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Address <http://www.aeecenter.org/training/> Go Links

Home
Membership
Certification
Shows
Buyers Guide
Books
Seminars
Jobs
Chapters
Online Journals
Msg. Board & Chat
Ask the Expert
Advertising
Links
News
Industry Newsletters
Insight Newsletter
Staff/Officers

AEE Online Seminars
www.aeecenter.org

Self-Paced Internet Training Courses

Currently registered on-line seminar students [CLICK HERE](#) to log-in.

Available courses:

- [Cogeneration and Its Uses](#)
- [Core Skills for Indoor Air Quality Professionals](#)
- [Building Energy Management](#)
- [Fundamentals of HVAC Systems](#)
- [Disaster and Recovery Planning](#)
- [Understanding Management System for Energy 2000 \(MSE 2000\)](#)

For more information, e-mail beth@aeecenter.org

AEE's self-paced online training seminars are designed to provide students, regardless of location or time constraints, the opportunity to participate in continuing education courses, earn CEUs and receive a certificate of completion.

Done Internet



Self-paced Online Training: ASHRAE

American Society of Heating, Refrigerating and Air-Conditioning Engineers - Microsoft Internet Explorer

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Back Forward Stop Refresh Home Search Favorites Media Mail Print W Go Links

Address <http://www.ashrae.org/template/EducationLinkLanding/category/1496> Go



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Please select..

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— Member Login —

Number:

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— Site Sections —

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[Consumer Center](#)

[Handbook](#)

[HVAC&R Research Journal](#)

[IAQ Applications](#)

[Government Issues](#)

ASHRAE Learning Institute/Courses



ASHRAE Learning Institute (ALI) Overview

- [About the ASHRAE Learning Institute](#)
- [Ways to Support the ASHRAE Learning Institute](#)

Professional Development Seminars

Professional Development Seminars are 1-2 day courses that provide in-depth information that is timely, practical, and advanced beyond a fundamental level. Each course is presented by one or more individuals who are experienced with standard practices and have been selected because of their expertise in the subject area. The course has a defined outline to provide structure and organization to achieve the stated learning outcomes.

Self-Directed Learning Courses

- [What is a Self-Directed Learning Program?](#)
- [Fundamentals of HVAC Systems](#)
- [Fundamentals of Thermodynamics and Psychrometrics](#)
- [Fundamentals of Heating and Cooling Loads](#)
- [Fundamentals of Air System Design](#)
- [Fundamentals of Water System Design](#)
- [Fundamentals of Heating Systems](#)
- [Fundamentals of Electrical Systems and Building Electrical Energy Use](#)
- [Fundamentals of HVAC Control Systems](#)
- [Fundamentals of Refrigeration](#)
- [Bookstore -- Self-Directed Learning Courses List](#)



Covering:

- Standards and

Internet



Summary of Resources

	AIA	EEBA	NAHB	ICC	ASHRAE
Stand up training	✓	✓	✓	✓	✓
Web-Cast (video based satellite)					
Web-Ex (online presentation)				✓	
Online Videos	✓			✓	
Online Training (self paced)	✓	✓		✓	✓



Teaming for Certification

- Architects
 - AIA [AIA | Continuing Education](#)
- Engineers
 - CEM [The Association of Energy Engineers, AEE, Home Page](#)
- Code Officials
 - ICC [ICC Online | Certification & Licensing](#)
- Others
 - EEBA [EEBA - EEBA Institute - Frequently Asked Questions](#)
(Building Technology Certification)

- Is more energy code specific certification needed?



Breakout Group Questions

- What type of training has worked well in your region? Why? Who have the target audiences been?
- What factor makes each of these training approaches successful? What could have made them more successful?
- Refresher on common training types:
 - Stand up training
 - Web-Cast (video based satellite)
 - Web-Ex (online presentation)
 - Online Videos
 - Online Training (self paced)



Conclusion

- Please take a few minutes to individually fill out our short survey based on this discussion.
- If you have other comments, you can always send an email to us about your training needs:
 - feedback@becp.pnl.gov