

## Comply! Energy Code Tools You May Be Missing March 15, 2007

### Building a Stronger Foundation for Energy Efficiency – slide 2

Our Goal –

To improve energy efficiency of the Nation's buildings by promoting the upgrade, adoption, and implementation of stronger building energy codes.

- Improve energy codes to make way for new technologies and better practices
- Help states easily adopt, implement, and enforce improved codes

### Introduction – slide 3

- A few things you might have missed
  - AreaCalc
  - Web Compliance
  - Online Permitting
  - Beyond Code Advisor
  - Self-paced Training
  - Code Notes
- A few things you've never seen
  - COMcheck 2006 IECC
  - User Forum
  - Podcasts
- An easy way to get help
  - techsupport@becp.pnl.gov

### Website – slide 4

[www.energycodes.gov](http://www.energycodes.gov)

- Hosts content for many of the other program features and efforts
  - Videos
  - Software
  - Web training
  - News
  - Calendar of Events
  - Resource Center

### Website – RSS Feed – slide 5

RSS - Really Simple Syndication

- Passive way to get news and information from the website
- Typical RSS readers include:
  - Google toolbar
  - Yahoo homepage
  - Browser add-ons
  - Many more

## Prescriptive Approach

- Simple, fast and easy
- Generally most stringent
  
- Requires minimum input
- Based on climate and WWR
- Uses a prototype building

### Residential

- Prescriptive Tables & Printed Guides
- REScheck Web Package Generator

### Commercial

- Prescriptive Tables / Printed Guides
- COMcheck Web Package Generator

## Trade-off Approach

- Trade-off between components
- Provides design flexibility
  
- Requires area & U/R-factors
- Uses UA calculation (REScheck) & regression equations (COMcheck)

### REScheck

- REScheck desktop software for Windows and Mac with AreaCalc tool
- REScheck-Web software

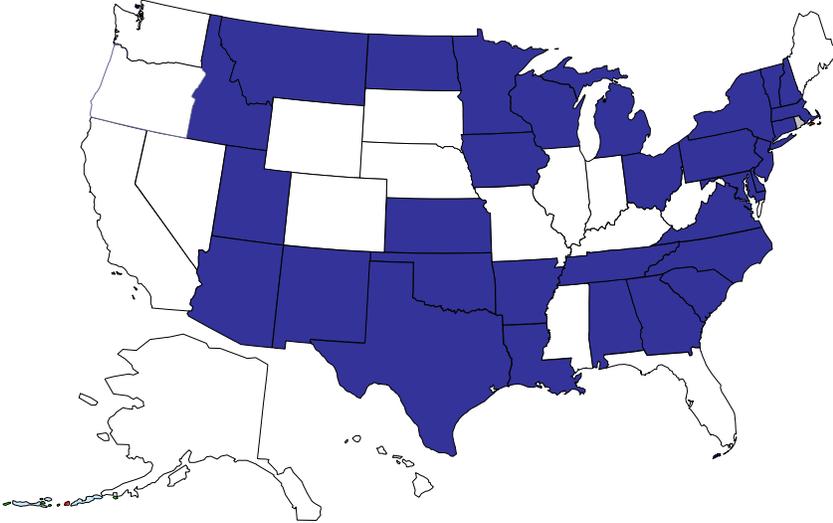
### COMcheck

- COMcheck desktop software for Windows
- COMcheck-Web software

## Desktop Tools – slide 7

Accessed from [www.energycodes.gov](http://www.energycodes.gov)

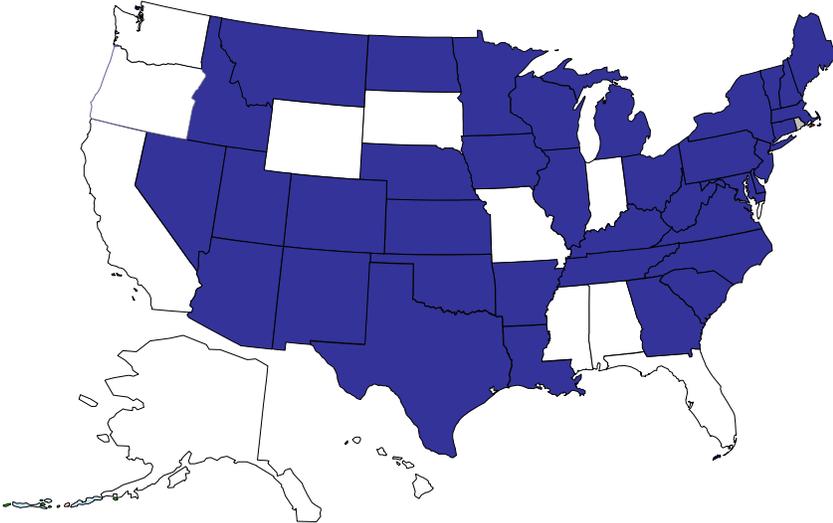
## States that Use REScheck – slide 8



Other jurisdictions and cities also use check tools, examples include:

- Clark County, NV
- Ft. Collins, CO
- Lincoln, NE.”

## States that Use COMcheck – slide 9



## REScheck 2006 IECC – slide 10

- Available Now (vs 4.0.1)
- Change in code support for WWR makes the tradeoff features different
- New performance-based equipment tradeoff
- Training now available on our website if you missed it

## REScheck 2006 IECC – slide 11

example.rck - REScheck Code: 2006 IECC

File Edit View Options Code Tools Help

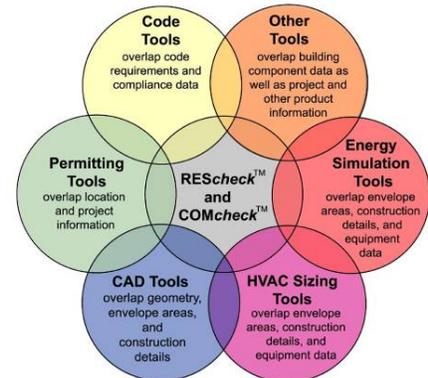
Project Envelope Mechanical

Ceiling Skylight Wall Window Door Basement Floor Crawl Wall

	Component	Assembly	Gross Area or Slab Perimeter	Cavity Insulation R-Value	Continuous Insulation R-Value	U-Factor	UA	Depth of Insulation (ft)
Building								
1	Ceiling 1	Flat Ceiling or Scissor Truss	729	ft2 38.0	0.0	0.03	22	
2	Ceiling 2	Flat Ceiling or Scissor Truss	592	ft2 30.0	0.0	0.035	21	
3	Wall 1	Wood Frame, 16" o.c.	1647	ft2 13.0	6.0	0.061	82	
4	Door 1	Glass	84	ft2		0.61	51	
5	Window 1	Vinyl Frame, Double Pane...	204	ft2		0.45	92	
6	Door 2	Solid	20	ft2		0.54	11	
7	Wall 2	Wood Frame, 16" o.c.	276	ft2 13.0	0.0	0.082	21	
8	Door 3	Solid	18	ft2		0.35	6	
9	Floor 1	All-Wood Joist/Truss, Ov...	938	ft2 19.0	0.0	0.047	44	
10	Floor 2	All-Wood Joist/Truss, Ov...	32	ft2 30.0	0.0	0.033	1	
11	Floor 3	Slab-On-Grade:Unheated	82	ft	8.0	0.779	64	2.0

## Online Permitting – slide 12

- Available Now
- Possible to submit your compliance report electronically
- In the future it may also be possible to exchange data with a wide range of other software tools



## Online Permitting – slide 13

- **Implemented in all desktop and web tools**
  - Allows compliance to be completely digital
  - Allows jurisdictions to easily collect reports and data
  - Allows users to avoid trips to the office
- **Leveraging technology**
  - XML tags can be distributed via email for a jurisdiction database (user requested)
  - XML is used to generate the pdf compliance reports
  - Digital signatures and PDAs are on the horizon

## Online Permitting – slide 14

File > Email Report

The screenshot shows the REScheck 3.7.3 software interface. A dialog box titled "Email Compliance Report" is open, displaying the following fields:

- Send Report To:**
  - \* Permitting Facility: Jurisdiction Name
  - \* Facility Email Address: code.official@jurisdiction.gov
  - Address(s) for CC:
- From:**
  - \* Your Name: Heather
  - Your Company:
  - \* Your Email Address: your.email@business.com
- Notes:** Electronic version of my compliance report for job #3456

Buttons for "Cancel" and "Send" are visible at the bottom of the dialog box. The background interface shows a list of building components (Ceiling, Wall, Door, Window, Floor) and a compliance summary at the bottom indicating "Compliance Passes" with a score of 11.1, which is "% Better Than Code".

## Future Work (Farther Out) – slide 15

- Palm-based compliance for every code official in the field
- Instant transmission of digital code information, documentation and compliance
- Integrated web-based systems allow jurisdictions to consolidate services (mechanical, electrical, building, plumbing, energy)

## Web Compliance Tools – slide 17

- **REScheck-Web and COMcheck-Web**
  - *Almost* a full mirror of the desktop tools
  - Provides users access from any location
  - No download required
  - Updates are provided to users immediately
  - Seamless integration with other online tools (website/Resource Center)
  - Client side java makes the applications run quickly for slow modems
  - Provides access to users who may have a less common operating environment (Linux, non-administrator)
- So What is Missing?
  - Newer energy codes transition in slowly
  - Not all browsers are fully supported

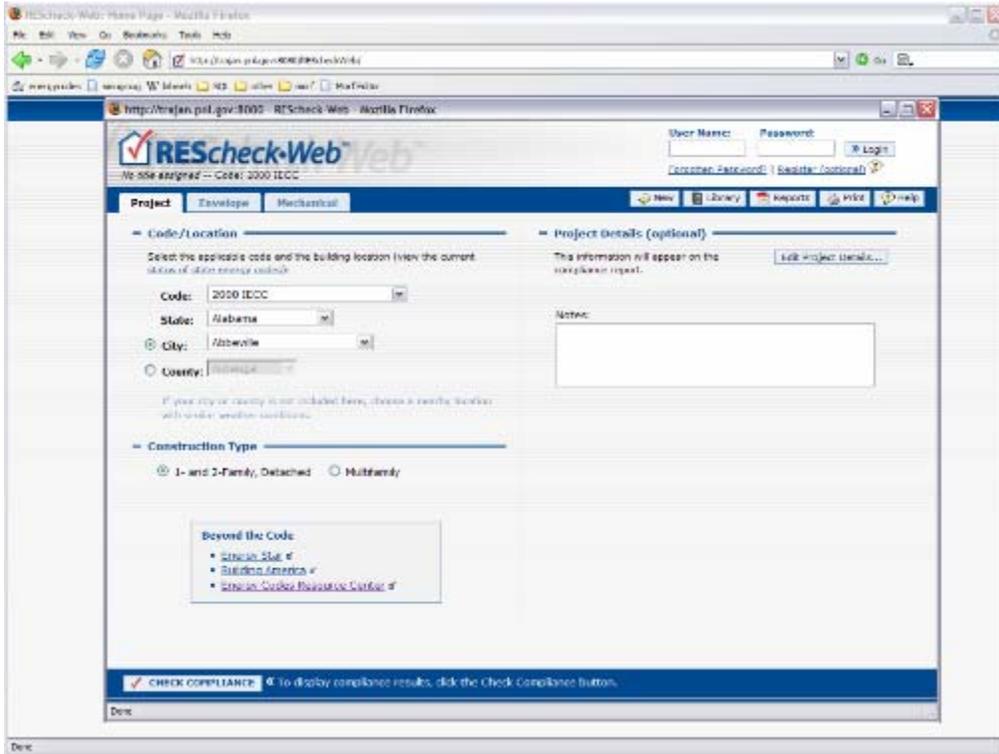
## AreaCalc – slide 19

- Available Next Year
- Integrates directly into the existing user interface (no longer a separate program launch)
- Will become available in both REScheck and COMcheck

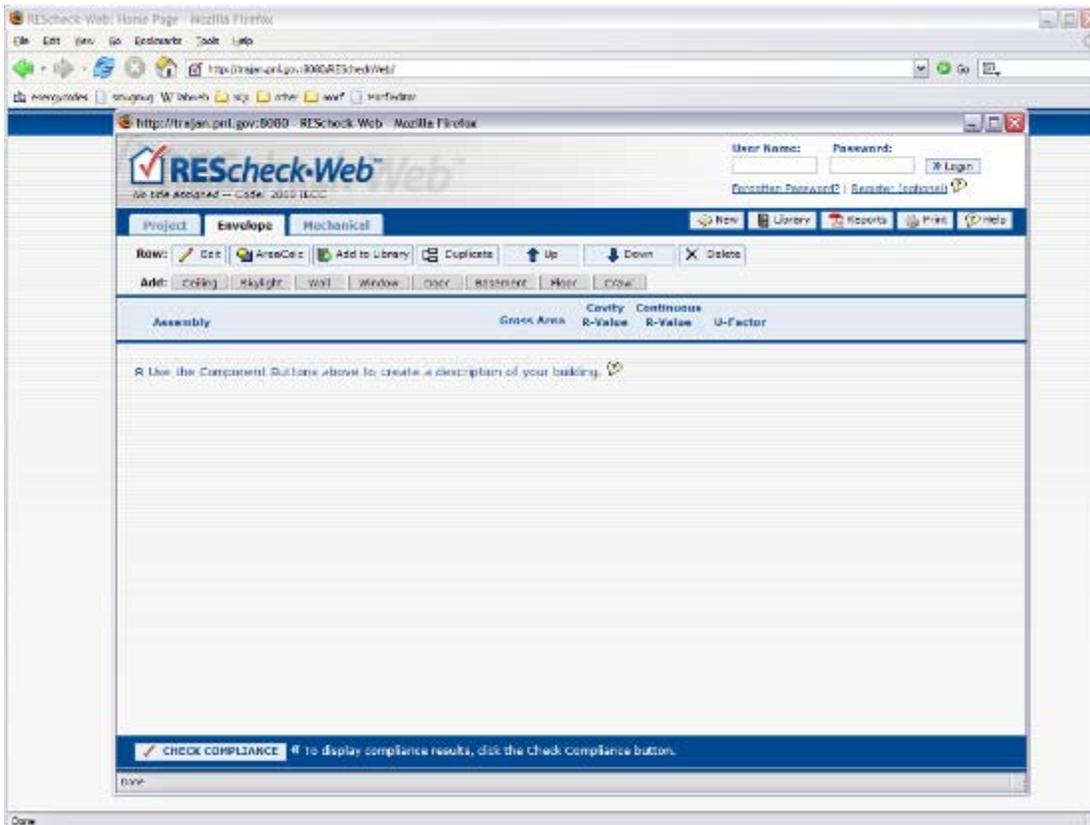
## Web Compliance Tools – slide 20



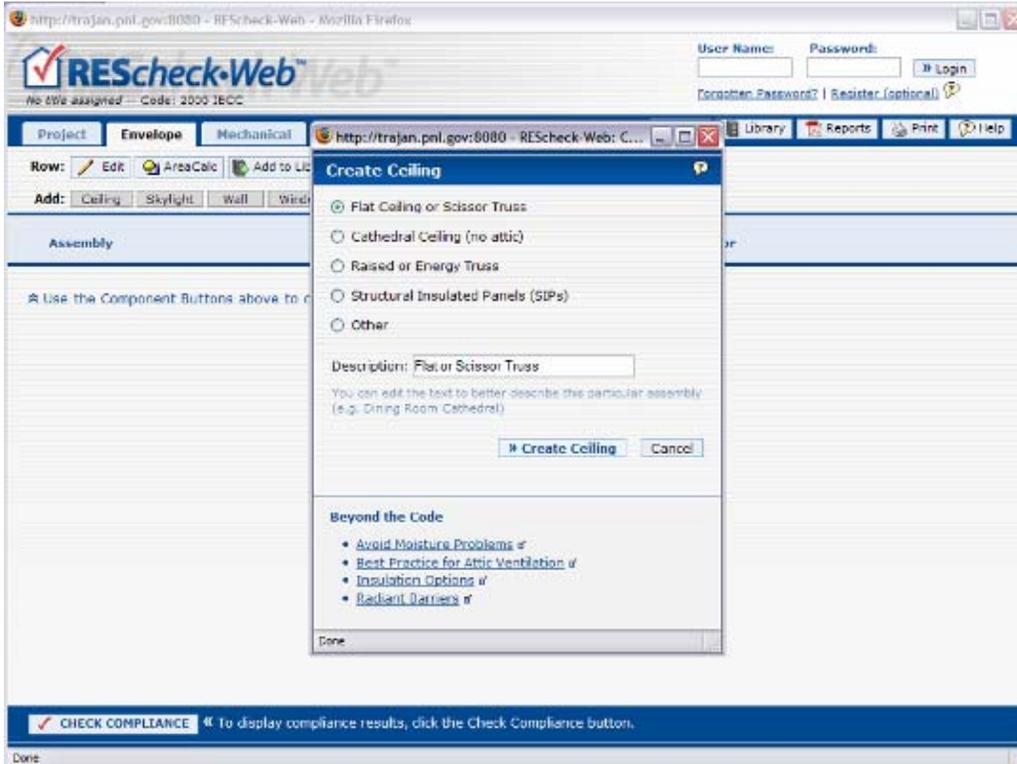
slide 21



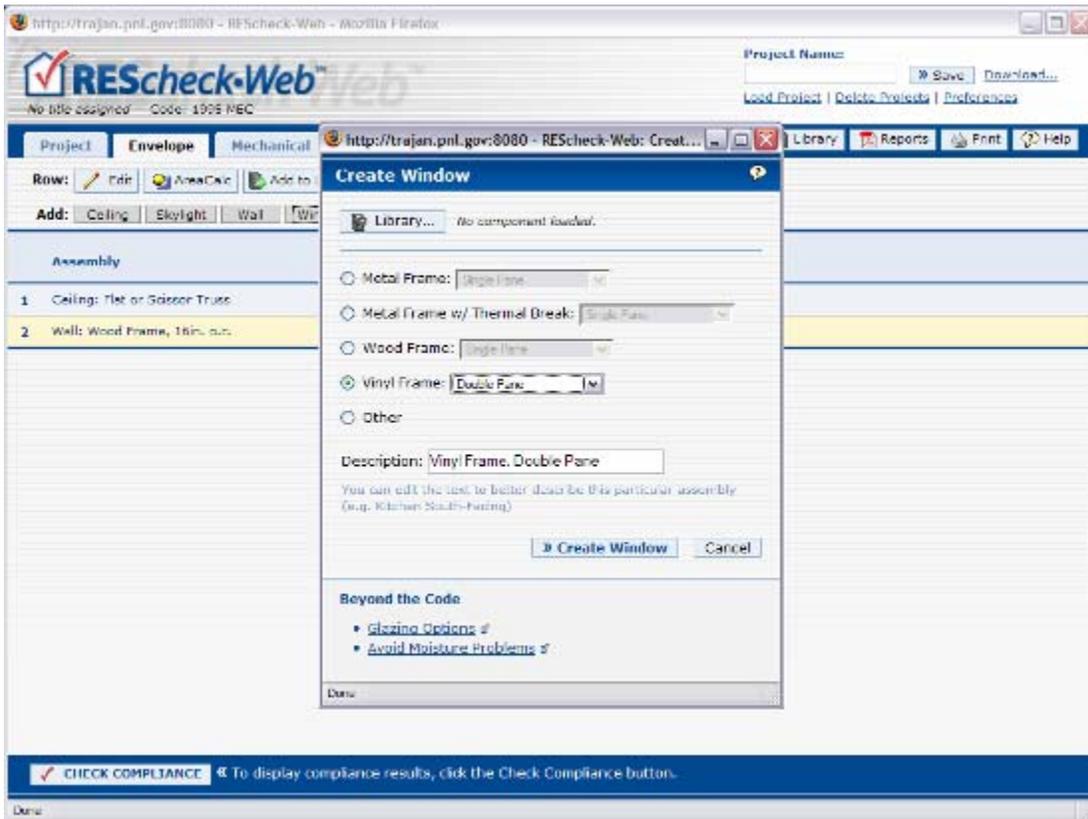
slide 22



slide 23



slide 24



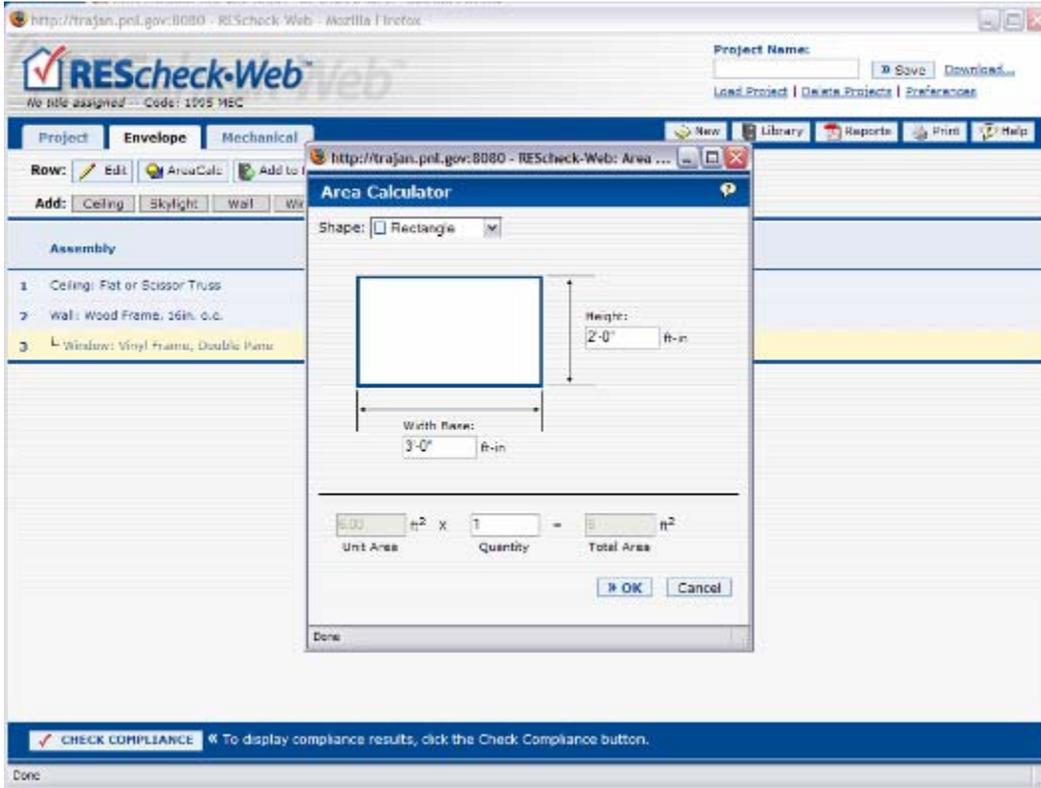
slide 25

The screenshot shows the REScheck-Web web application interface. At the top, the browser address bar displays "http://trajan.pnl.gov:8080 - REScheck-Web - Mozilla Firefox". The application header includes the "REScheck-Web" logo and a "Project Name:" field with "Save" and "Download..." buttons. Below the header is a navigation menu with "Project", "Envelope", and "Mechanical" tabs, along with "New", "Library", "Reports", "Print", and "Help" icons. A toolbar contains "Row:" actions (Edit, Area Calc, Add to Library, Duplicate, Up, Down, Delete) and "Add:" categories (Ceiling, Skylight, Wall, Window, Door, Basement, Floor, Crawl). The main data table is as follows:

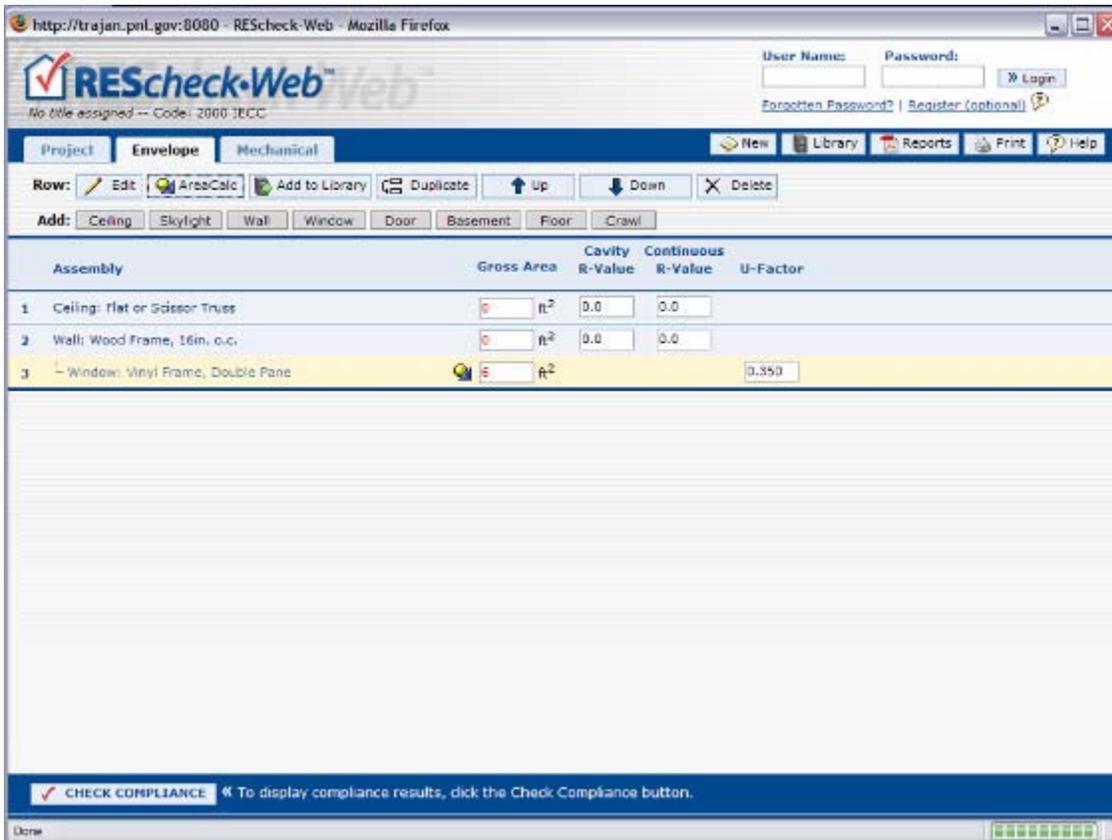
Assembly	Gross Area	Cavity R-Value	Continuous R-Value	U-Factor
1 Ceiling: Flat or Gable Truss	<input type="text"/> ft <sup>2</sup>	<input type="text"/> 0.0	<input type="text"/> 0.0	
2 Wall: Wood Frame, 16in. o.c.	<input type="text"/> ft <sup>2</sup>	<input type="text"/> 0.0	<input type="text"/> 0.0	
3 Window: Vinyl Frame, Double Pane	<input type="text"/> ft <sup>2</sup>			<input type="text"/> 0.000

At the bottom of the interface, there is a "CHECK COMPLIANCE" button and a note: "To display compliance results, click the Check Compliance button." The status bar at the very bottom shows "Done".

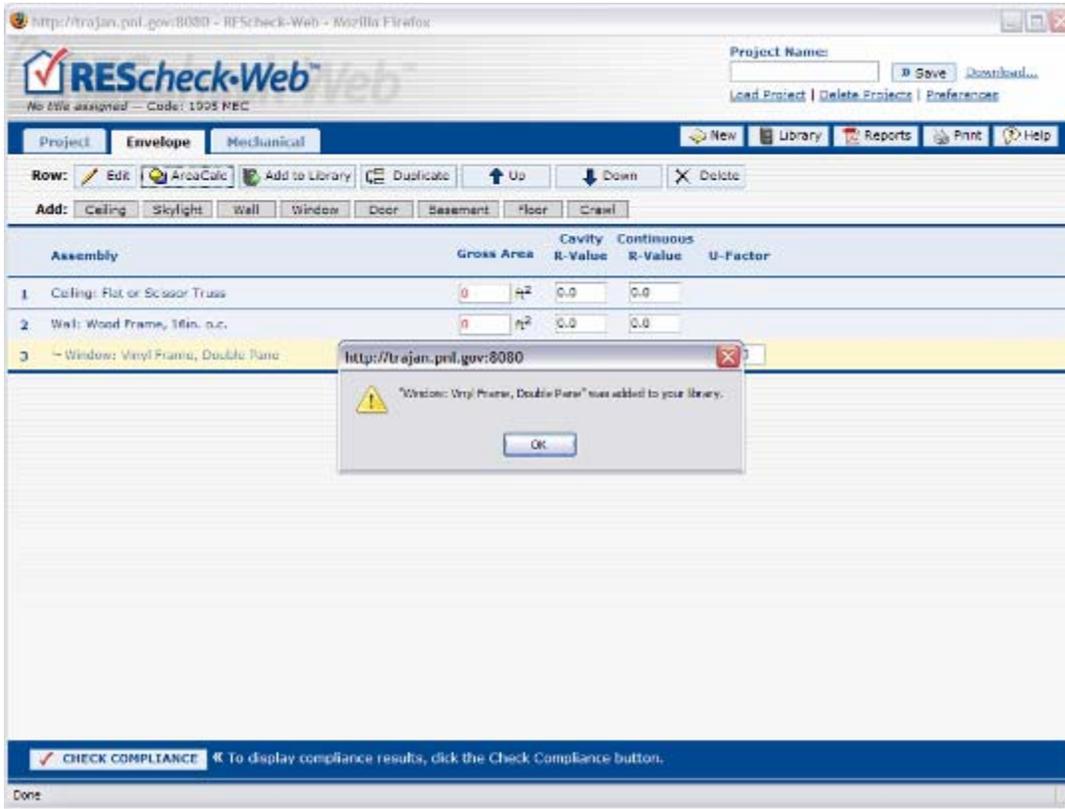
slide 26



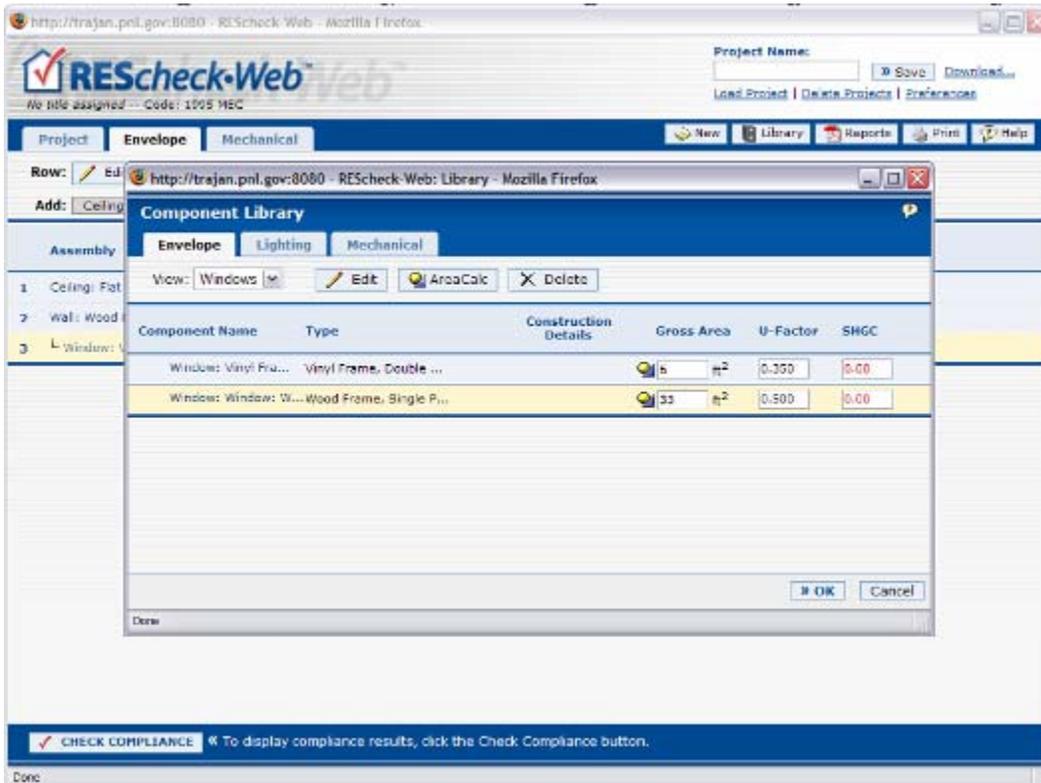
slide 27



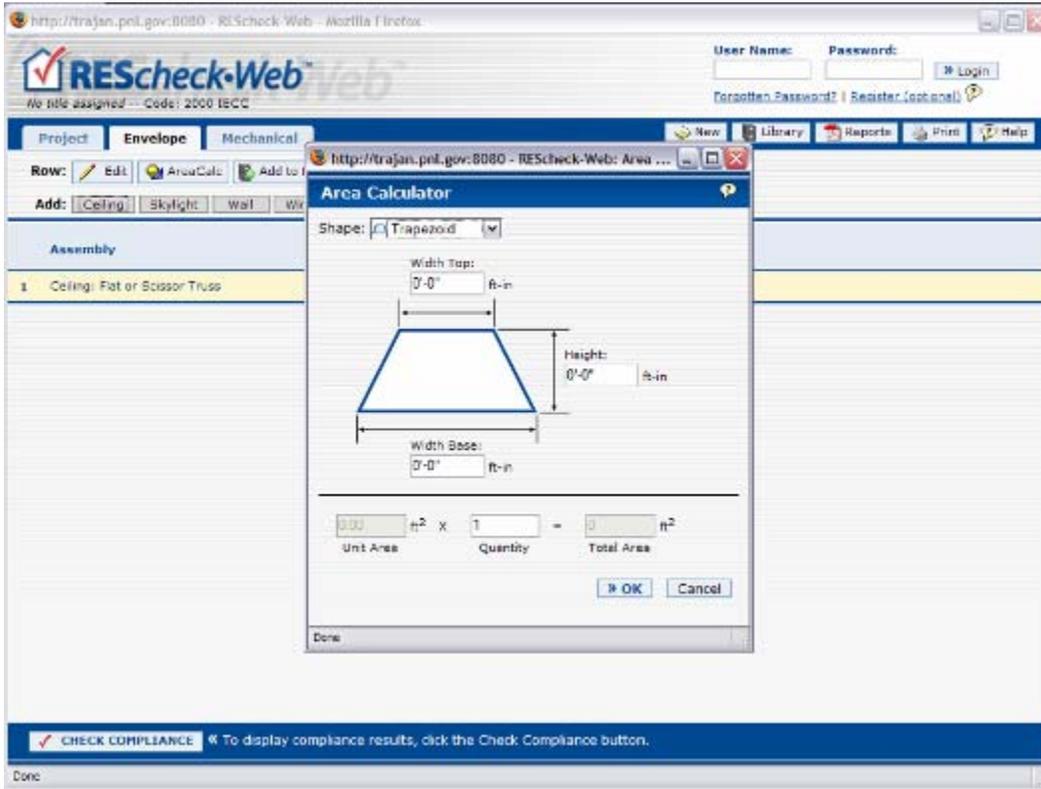
slide 28



slide 29



slide 30



## User Preferences – slide 31

The screenshot shows a web browser window with the address bar displaying "http://energycode.pnl.gov - REScheck-Web: Preferences". The page title is "Preferences" and there are four tabs: "General", "Project", "Applicant", and "Reports". The "Applicant" tab is selected, and the section is titled "Applicant Information".

Below the title, there is a instruction: "Enter any of the following information to use when starting the program or a new project." The form is divided into two columns: "Owner/Agent" and "Designer/Contractor".

Owner/Agent	Designer/Contractor
First Name: <input type="text"/>	First Name: <input type="text"/>
Last Name: <input type="text"/>	Last Name: <input type="text"/>
Company: <input type="text"/>	Company: <input type="text"/>
Address: <input type="text"/>	Address: <input type="text"/>
City: <input type="text"/>	City: <input type="text"/>
State: <input type="text" value="Alabama"/>	State: <input type="text" value="Alabama"/>
Zip Code: <input type="text"/>	Zip Code: <input type="text"/>
Phone #: <input type="text"/>	Phone #: <input type="text"/>
E-mail: <input type="text"/>	E-mail: <input type="text"/>

At the bottom right of the dialog box, there are two buttons: "» OK" and "Cancel". The status bar at the bottom left shows "Done".

## User Preferences – slide 32

The screenshot shows a web browser window titled "http://energycode.pnl.gov - REScheck-Web: Preferences". The page has a blue header with the word "Preferences" and a navigation menu with tabs for "General", "Project", "Applicant", and "Reports". The "Reports" tab is selected. Below the navigation is a section titled "Report Signatures" with a sub-header "Report Signatures". A note states: "Additional signature lines will be added to the Compliance Certificate when selected below." Below this is a table with three columns: "Name - Title", "Signature", and "Date". Underneath the table, a note says: "Enter a name and title to display on the 'Name-Title' line of each report (optional)." There are three input fields labeled "1st Line", "2nd Line", and "3rd Line", each with a checkbox to its left. Below this is a section titled "Email Reports" with a sub-header "Email Reports". A note says: "Enter any of the following information to use when emailing reports." There are three input fields: "Recipient Name(s)", "Recipient Email Address(es)", and "Email Address(es) for CC:". A yellow tooltip box contains the text: "(use a semicolon to separate multiple names and addresses)". At the bottom right of the form are "OK" and "Cancel" buttons. The browser's status bar at the bottom shows "Done".

## Web Tools (Package Generators) – slide 33

Accessible from [www.energycodes.gov](http://www.energycodes.gov)

slide 34

http://energycode.pnl.gov - REScheck Package Generator

REScheck PACKAGE GENERATOR

Untitled -- Code: 1995 MEC

User Name: Password: Login

Forgotten Password? | Register (optional)

**STEP 1: Code, Location, & Project Information** Start Over Print Help

Select the applicable code and the building location (View current [status of state codes](#)):

Code: 2003 IECC

State: Alabama

City or County: Abbeville

If you cannot find the city or county in which your building will be located, choose a location that is close to your building site and has similar weather conditions.

**Title/Site/Permit Information for Compliance Certificate (optional)**

Project Title: Untitled

Address:

City: State: Zip Code:

Permit #: Permit Date:

**Owner/Agent Information for Compliance Certificate (optional)**

First Name: Last Name:

Company:

Address:

City: State: Zip Code:

Previous 1 2 3 4 5 Next

Done

slide 35

http://energycode.pnl.gov - REScheck Package Generator

 **REScheck™ PACKAGE GENERATOR**

Untitled -- Code: 1995 MEC

User Name:  Password:  [» Login](#)

[Forgotten Password?](#) | [Register \(optional\)](#) 

---

**STEP 2: Building Information** [Start Over](#) [Print](#) [Help](#)

Construction Type:

Select either Single Family (1- and 2-family detached) or Multifamily (three stories or less in height with three or more attached dwelling units).

Glazing Area:

Enter Value: Up to  % of the wall

Calculate Value:  $100 \times \text{Glazing Area} \div \text{Gross Wall Area} = \text{\_\_\_\_\_\_} \% \text{ of the wall}$

Enter or calculate the maximum glazing area, defined as the sum of all glazing (including windows, sliding glass doors, skylights and windows in conditioned basements) divided by the gross wall area (excluding basement walls) expressed as a percentage.

Heating Type (optional):

Cooling Type (optional):

Heating and/or cooling equipment is only required if you would like to receive credit for high-efficiency equipment.

**NEXT »** [STEP 3: Select insulation and window U-factor levels](#)

---

[« Previous](#) 1 **2** 3 4 5 6 [Next »](#)

Done

slide 36

http://energycode.pnl.gov - REScheck Package Generator

REScheck PACKAGE GENERATOR  
Untitled -- Code: 1995 MEC

User Name: Password: Login  
Forgotten Password? Register (optional)

**STEP 4: Choose a Package** Start Over Print Help

Click on the radio button to the left of the package you want to select and click "Next" to continue to Step 5.

Compliance Package	Ceiling	Wall Cavity	Wall Continuous	Window	Basement Wall	Floor	Slab-on-Grade
<input checked="" type="radio"/> 1.	R-19	R-11	R-0	U-0.65	R-5	R-11	R-0
<input type="radio"/> 2.	R-30	R-11	R-0	U-0.75	R-5	R-11	R-0
<input type="radio"/> 3.	R-13	R-11	R-0	U-0.65	R-7	R-19	R-2
<input type="radio"/> 4.	R-19	R-11	R-0	U-0.75	R-7	R-19	R-2

Packages 1 - 4 of 4

**NEXT** » [STEP 5: Enter comments or modify R-values and U-factors](#)

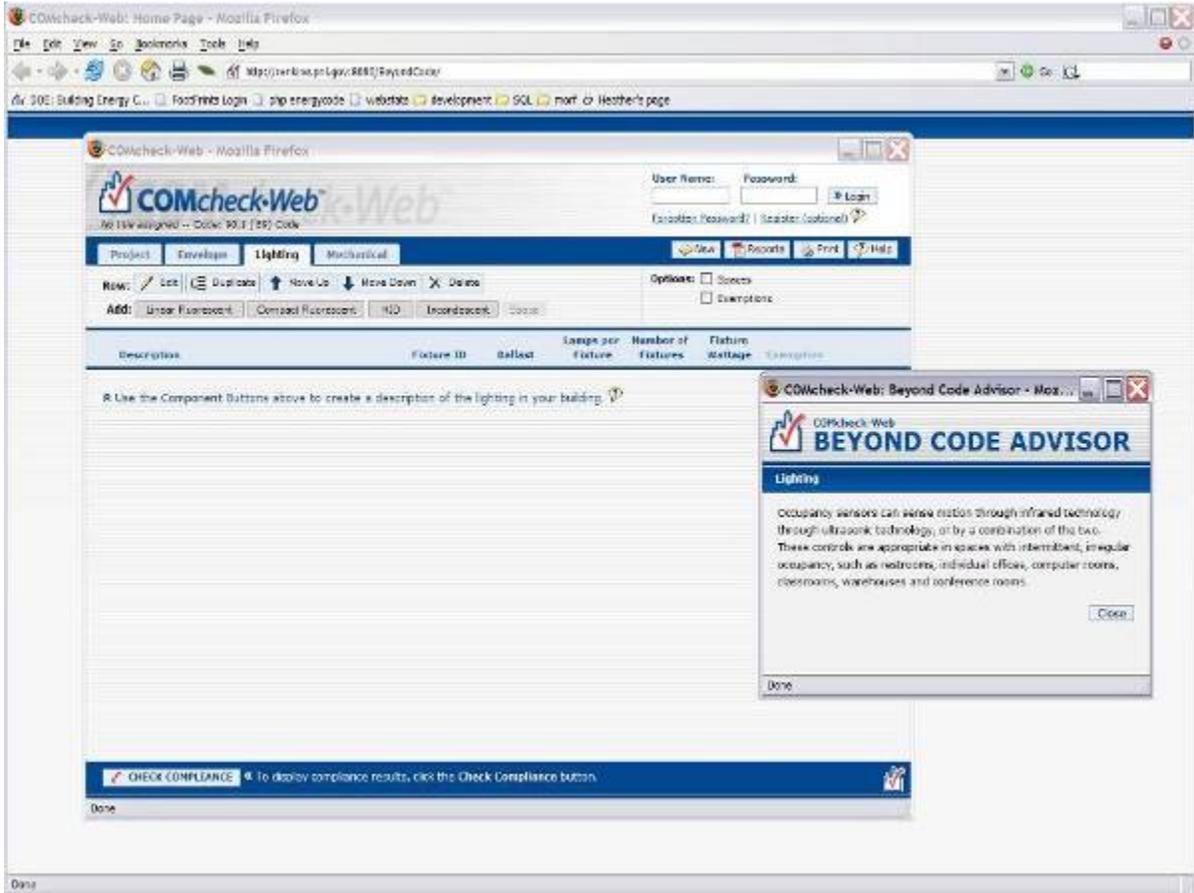
« Previous 1 2 3 **4** 5 6 Next »

Done

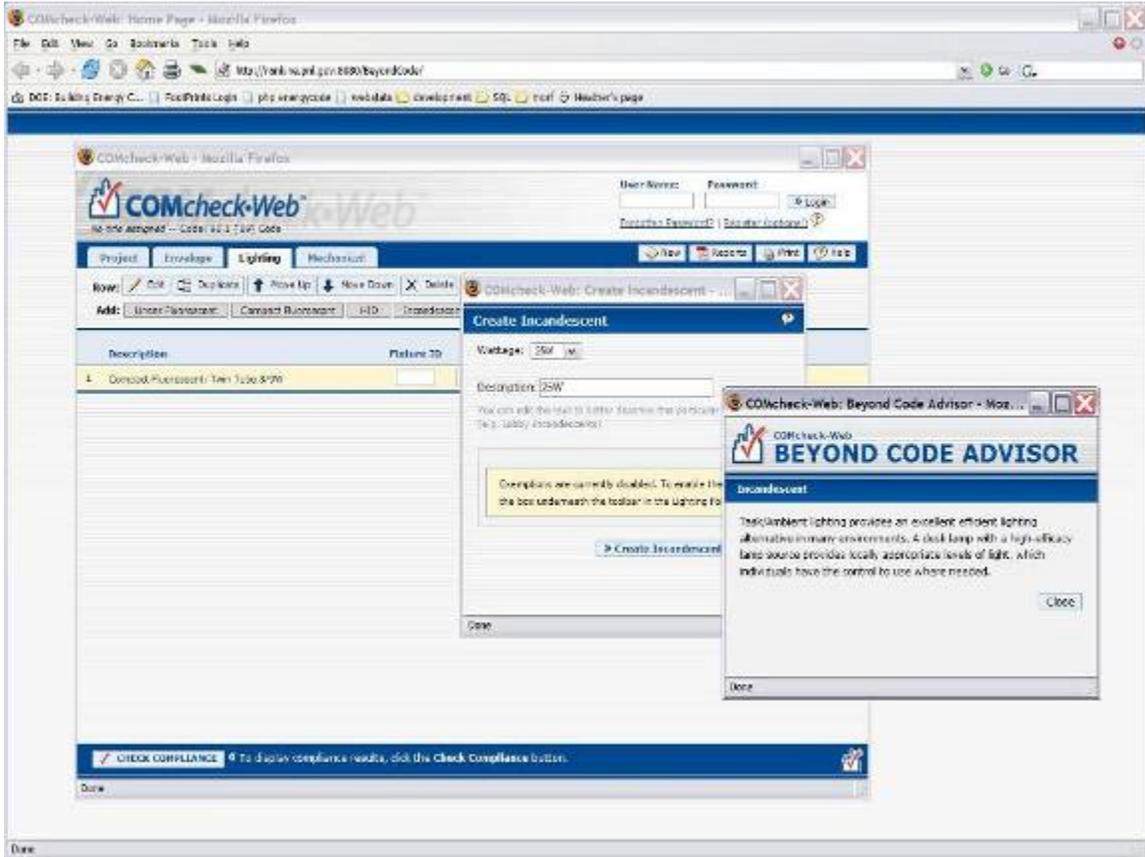
**Beyond Code Advisor – slide 37**

- Implemented in all COMcheck tools
  - Allows users to “troubleshoot” independently with the web
  - Enhances user ability to find above code information
  - Beyond code materials include Advanced Energy Design Guides and other tools

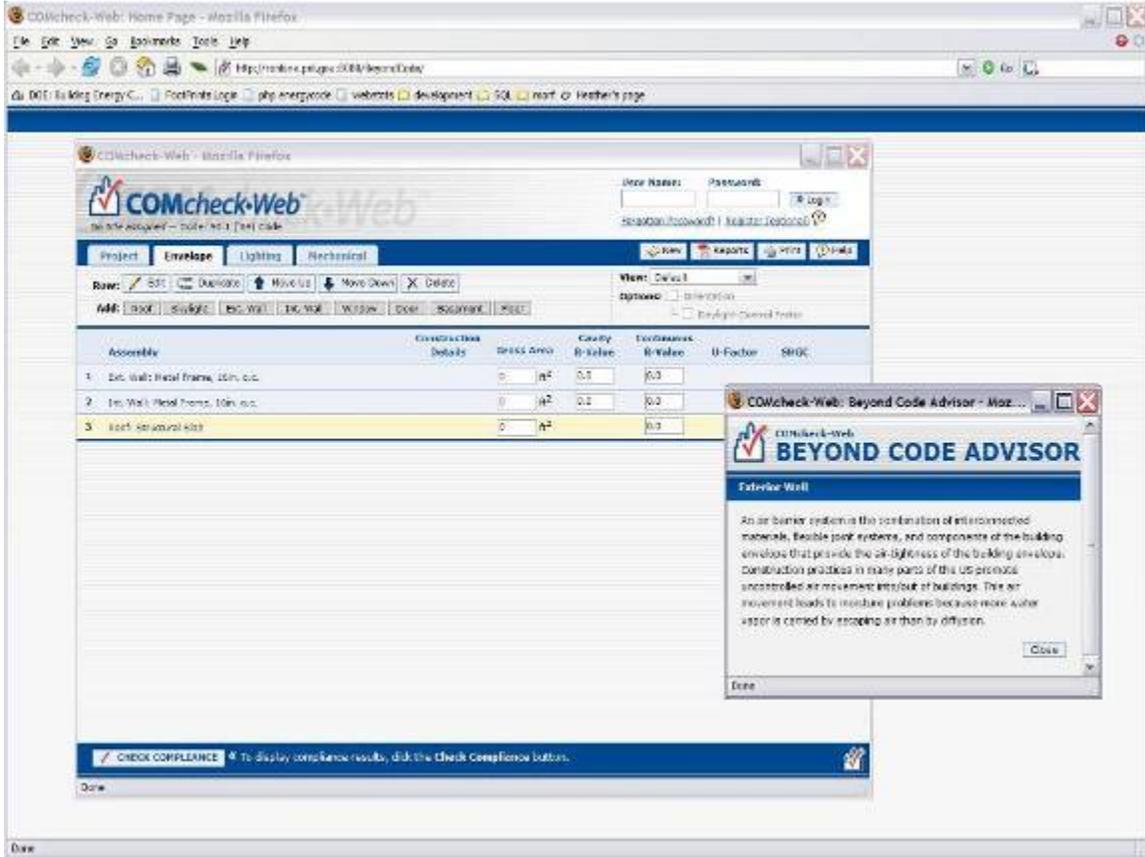
slide 38



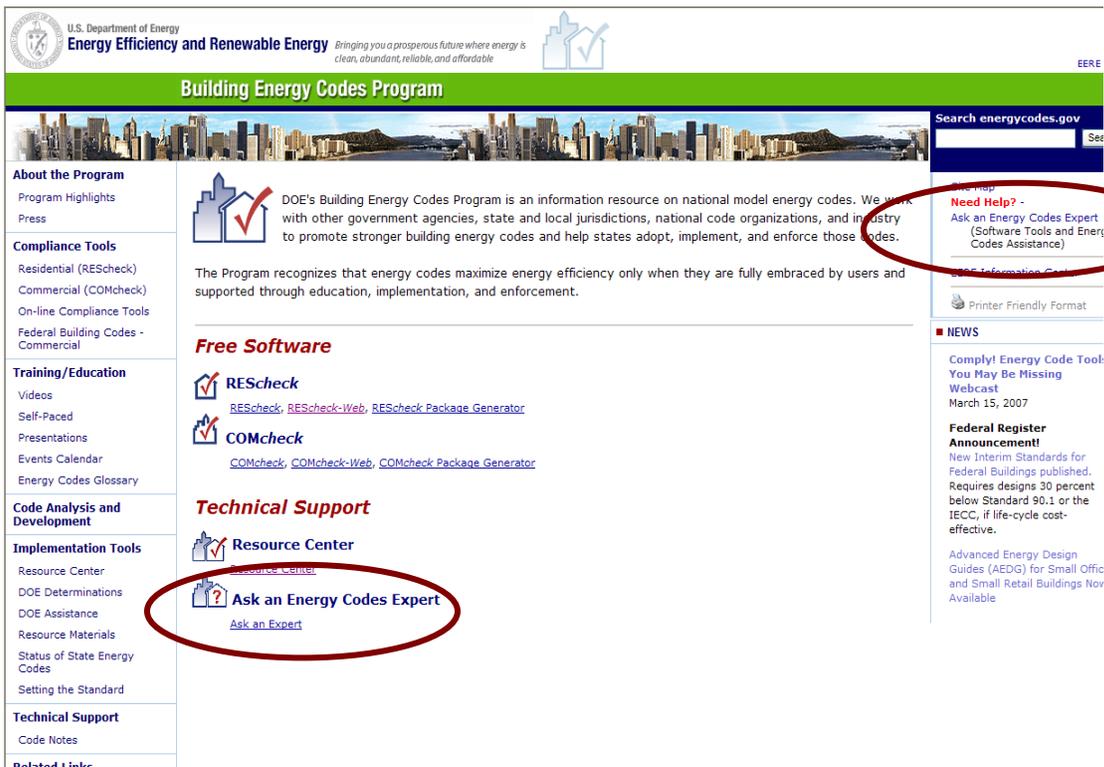
slide 39



slide 40



Technical Support – slide 41



## Technical Support – slide 42

- Streamlined system leverages Resource Center materials and website
- Evolving to include a prototype web forum
  - *Coming soon!* Let us know if you want to participate!
  - Provides a searchable reference for those with software questions
  - Provides a mechanism for all users to interact dynamically with one another
  - May allow region specific/state specific interaction to the software users

## User Forum – slide 43

**Building Energy Codes TECHNOLOGY FORUM**

User Name:  Password:  Remember Me?

[Register](#) [FAQ](#) [Members List](#) [Calendar](#) [Today's Posts](#) [Search](#)

Welcome to the Building Energy Codes.

If this is your first visit, be sure to check out the [FAQ](#) by clicking the link above. You may have to [register](#) before you can post: click the register link above to proceed. To start viewing messages, select the forum that you want to visit from the selection below.

Forum	Last Post	Threads	Posts
<b>Software</b>			
<b>REScheck</b> Questions and discussion about the desktop and web software.	<a href="#">Compliance for additions with...</a> by Pam 01-17-2007 02:38 PM	2	2
<b>COMcheck</b> Questions and discussion about the desktop and web software.	<a href="#">Reports Compatible with...</a> by Pam 02-07-2007 10:29 AM	4	5
<b>Energy Codes</b> Questions and discussion about energycodes.			
<b>Lighting</b>	<a href="#">Airtight requirement for...</a> by heather 01-13-2007 04:46 PM	1	2
<b>Mechanical</b>	Never	0	0
<b>Envelope</b>	<a href="#">2006 IECC Prescriptive...</a> by wandart 03-09-2007 05:47 PM	2	2
<b>State Specific Codes</b>			

slide 44

**Building Energy Codes TECHNOLOGY FORUM**

Building Energy Codes > Software > COMcheck

User Name:  Remember Me?   
 Password:  Log in

Register | FAQ | Members List | Calendar | Today's Posts | Search

**COMcheck** Questions and discussion about the desktop and web software.

Threads in Forum : COMcheck

Thread / Thread Starter	Rating	Last Post	Replies	Views
<a href="#">Reports Compatible with AutoCAD</a> Pam		02-07-2007 10:29 AM by Pam >	0	4
<a href="#">Wall Louvers</a> Pam		01-17-2007 01:03 PM by Pam >	0	2
Poll: <a href="#">Vote on most critical features for COMcheck-Web</a> heather		12-21-2006 01:12 PM by heather >	0	15
<a href="#">Building Selection in COMcheck</a> heather		12-01-2006 11:01 AM by Mark >	1	25

Display Options: Showing threads 1 to 4 of 4  
 Sorted By: Last Post Time | Sort Order: Descending  
 From The: Beginning | Show Threads

Moderators: 1  
 Kristian

slide 45

**Building Energy Codes TECHNOLOGY FORUM**

Building Energy Codes > Software > COMcheck > Building Selection in COMcheck

User Name:  Remember Me?   
 Password:  Log in

Register | FAQ | Members List | Calendar | Today's Posts | Search

**COMcheck** Questions and discussion about the desktop and web software.

Thread Tools | Display Modes

#1  
 11-30-2006, 03:25 PM

**heather**  
 Moderator  
 Join Date: Nov 2005  
 Posts: 16

**Building Selection in COMcheck**

Another frequent question from the COMcheck user side.

I am having trouble understanding the building selection required on the project tab in COMcheck? What is this for?

#2  
 12-01-2006, 11:01 AM

**Mark**  
 Moderator  
 Join Date: Dec 2005  
 Posts: 7

Good question, Heather. COMcheck requires you to fill out the building use box, which asks you to select either a whole building approach or a space by space approach and then asks you to fill in areas for your whole building or building spaces. The information in this box is used for two things. The first

# Resource Center – slide 46

U.S. Department of Energy  
**Energy Efficiency and Renewable Energy** *Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable*

## Building Energy Codes Program

**About the Program**  
Program Highlights  
Press

**Compliance Tools**  
Residential (REScheck)  
Commercial (COMcheck)  
On-line Compliance Tools  
Federal Building Codes - Commercial

**Training/Education**  
Videos  
Self-Paced  
Presentations  
Events Calendar  
Energy Codes Glossary

**Code Analysis and Development**

**Implementation Tools**  
Resource Center  
DOE Determinations  
DOE Assistance  
Resource Materials  
Status of State Energy Codes  
Setting the Standard

**Technical Support**  
Code Notes

**Related Links**

DOE's Building Energy Codes Program is an information resource on national model energy codes. We work with other government agencies, state and local jurisdictions, national code organizations, and industry to promote stronger building energy codes and help states adopt, implement, and enforce those codes.

The Program recognizes that energy codes maximize energy efficiency only when they are fully embraced by users and supported through education, implementation, and enforcement.

### Free Software

**REScheck**  
[REScheck](#), [REScheck-Web](#), [REScheck Package Generator](#)

**COMcheck**  
[COMcheck](#), [COMcheck-Web](#), [COMcheck Package Generator](#)

### Technical Support

**Resource Center**  
[Resource Center](#)

**Ask an Energy Codes Expert**  
[Ask an Energy Codes Expert](#)

Search [energycodes.gov](#)

Site Map  
**Need Help?** - [Ask an Energy Codes Expert \(Software Tools and Energy Codes Assistance\)](#)  
EERE Information Center  
Printer Friendly Format

**NEWS**

**Comply! Energy Code Tools You May Be Missing Webcast**  
March 15, 2007

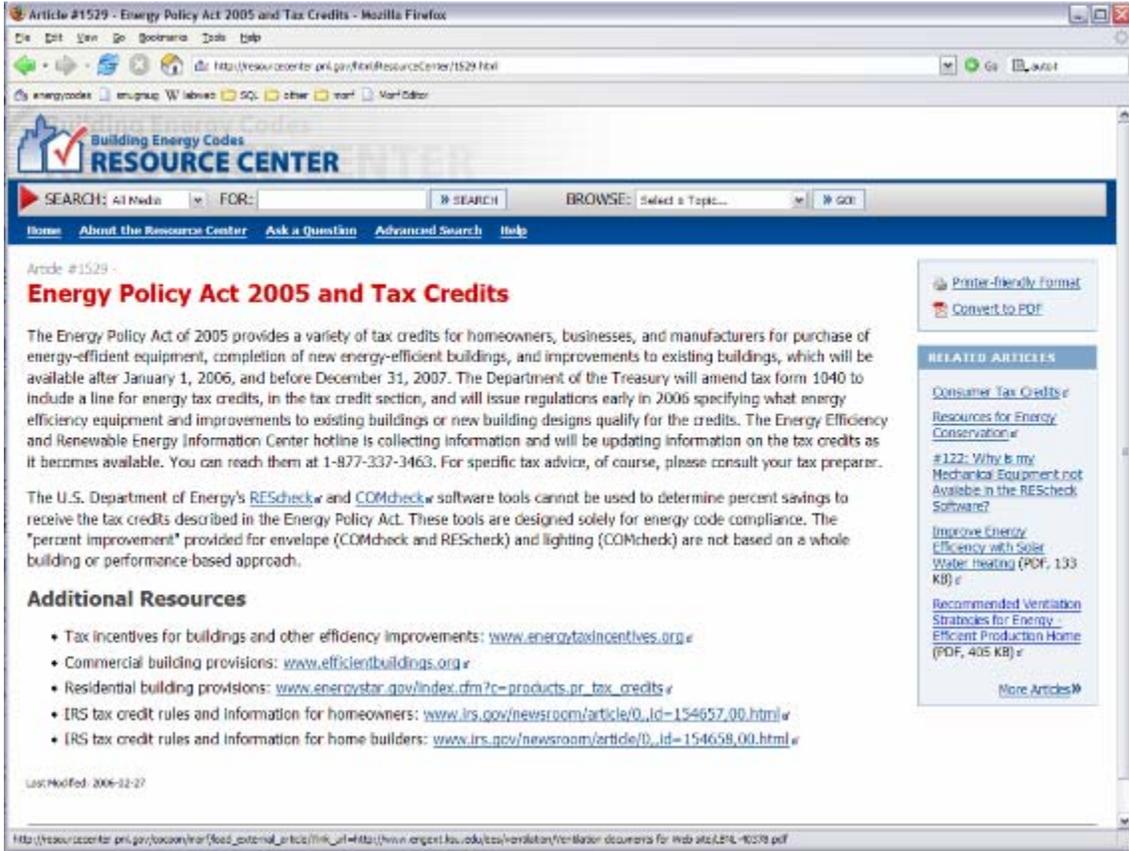
**Federal Register Announcement!**  
New Interim Standards for Federal Buildings published. Requires designs 30 percent below Standard 90.1 or the IECC, if life-cycle cost-effective.

Advanced Energy Design Guides (AEDG) for Small Office and Small Retail Buildings Now Available

slide 48

The screenshot shows a Mozilla Firefox browser window displaying the Building Energy Codes Resource Center website. The browser's address bar shows the URL: <http://resourcecenter.pnl.gov/resources/ResourceCenter>. The website header features the logo "Building Energy Codes RESOURCE CENTER" and a navigation menu with links: Home, About the Resource Center, Ask a Question, Advanced Search, and Help. Below the header is a search and browse section with a search bar, a "FOR:" dropdown, a "SEARCH" button, a "BROWSE:" dropdown, and a "GO!" button. The main content area is titled "Welcome to the Building Energy Codes Resource Center" and includes a central graphic with icons for ARTICLES, GRAPHICS, VIDEOS, PRESENTATIONS, and ONLINE TOOLS. Text on the page explains that the system provides information about energy codes and beyond code technologies, and lists available media types: Articles, Graphics, Online Tools, Presentations, and Videos. A yellow box contains the text: "Something missing? Send us your materials if you see something outdated, or let us know if you have requests for information we don't have." On the right side, there are two sidebar sections: "NEW MATERIALS" with links to Article #1529, Article #1533, and Article #1484; and "POPULAR RESOURCES" with links to Article #139, Article #1420, and Article #1469. At the bottom of the page, there is a footer with links: Resource Center Home, Email Us, Security & Privacy, and the website URL [www.energycodes.gov](http://www.energycodes.gov). The browser's status bar at the very bottom shows "Done".

slide 49



slide 50

The screenshot shows a Mozilla Firefox browser window displaying an article from the Building Energy Codes Resource Center. The article title is "Why is my Mechanical Equipment not Available in the REScheck Software?". The page features a navigation bar with search and browse options, a main content area with an image of a condensing unit air conditioner and explanatory text, and a sidebar with related articles and utility links.

Article #122 - Why is my Mechanical Equipment not Available in the REScheck Software? - Mozilla Firefox

http://ResourceCenter.enr.gov/ResourceCenter/122.html

Building Energy Codes  
**RESOURCE CENTER**

SEARCH: All Media FOR: SEARCH BROWSE: Select a Topic... GO

Home About the Resource Center Ask a Question Advanced Search Help

Article #122 -  
**Why is my Mechanical Equipment not Available in the REScheck Software?**

  
Condensing unit air conditioner.

REScheck makes only the most common equipment types available for tradeoff (those types which are covered by federal appliance standards and are rated with an AFUE, SEER, or HSPF). Systems such as radiant floors, geothermal heat pumps, evaporative coolers, and others require complex calculations not available in REScheck. These systems can receive tradeoff credit only through a whole-house performance (i.e., Chapter 4) analysis.

You may consider using another software tool to do full performance analyses. If you use an energy simulation approach with a high-efficiency equipment type, be aware that you are reducing your building envelope energy efficiency while increasing equipment efficiency. It may be better to increase both the equipment efficiency and the building envelope energy efficiency.

Last Modified: 2011-03-10

Printer-friendly Format  
Convert to PDF

RELATED ARTICLES

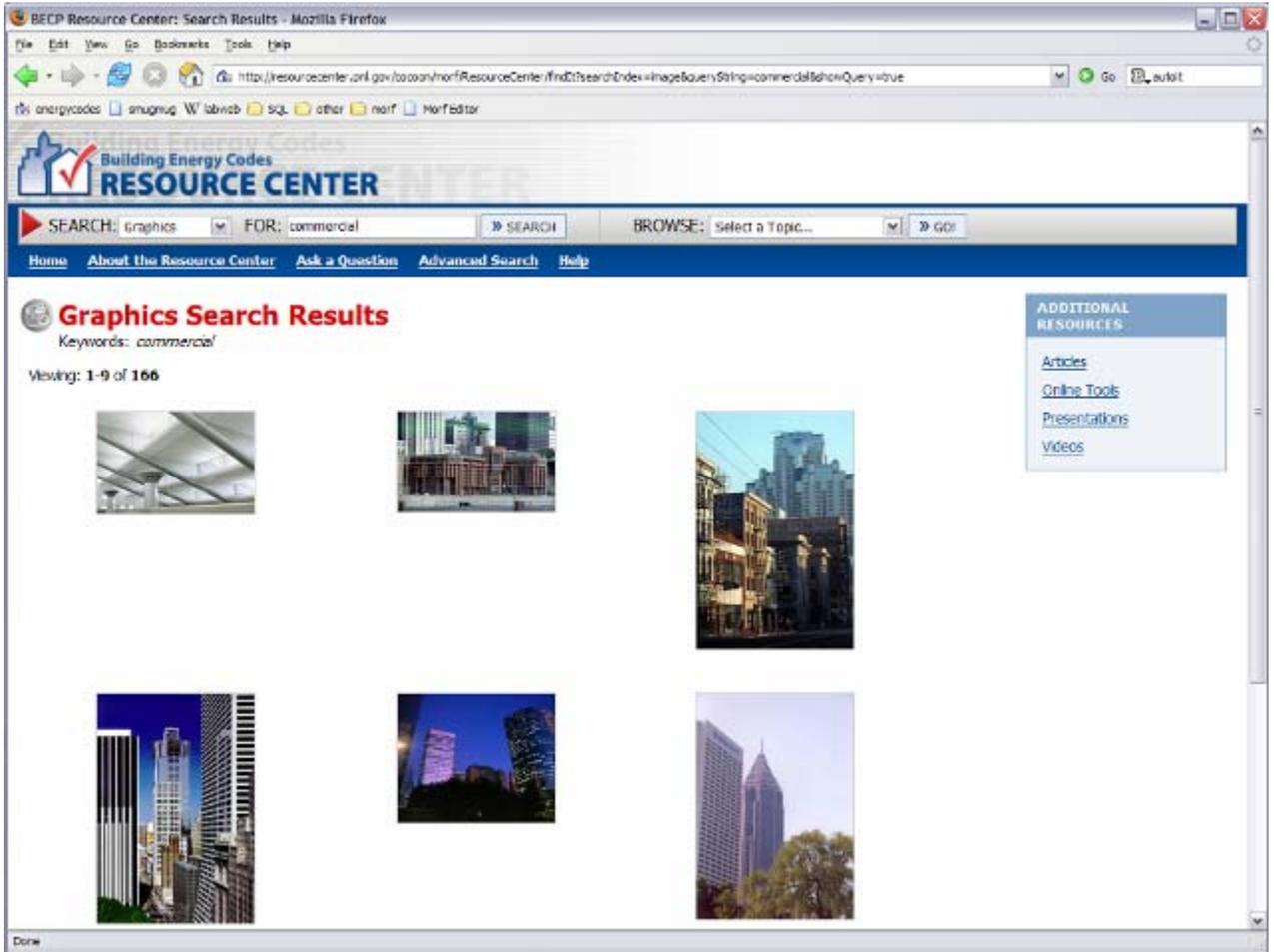
- #123: What Should I Do if my Mechanical Equipment is Not an Option in the REScheck Software?
- #1453: REScheck Webcast Questions - HVAC
- What is HVAC system size? (PDF, 151 KB) v REScheck v
- Mechanical Equipment Maintenance Checklist v

More Articles »

Resource Center Home Email Us Security & Privacy www.enr.gov/dec/arc

Date

slide 52





slide 54

Article #1434 - AEDG Implementation Recommendations: Zones - Mozilla Firefox

http://resourcecenter.enr.gov/html/ResourceCenter/1434.html

## Building Energy Codes RESOURCE CENTER

SEARCH: All Media FOR: SEARCH BROWSE: Select a Topic... GO

Home About the Resource Center Ask a Question Advanced Search Help

Article #1434 -

### AEDG Implementation Recommendations: Zones

The Advanced Energy Design Guide (AEDG) seeks to achieve 30 percent savings over Standard 90.1-1999. This guide focuses on improvements to small office buildings, less than 20,000 square feet. The recommendations below are adapted from the implementation section of the guide, and should be used in cooperation with the whole document.\* The full design guide is available from the ASHRAE website, [Advanced Energy Design Guide for Small Office Buildings](#).

#### Thermal Zones

Office buildings should be divided into thermal zones based on building size, part-load performance requirements, space layout and function, number of tenants, and the needs of the user. In an office building with similar internal loads throughout, a minimum of one zone for each of the perimeter exposures, one for the top floor building core area, one for the bottom floor building core area, and one for the interior would be ideal; for small buildings, this may be impractical.

Zoning can also be accomplished using multiple air-handling units or by having multiple zone control with a single air-handling unit. The temperature sensor for a zone should be located in a room representative of that entire zone.

#### Zone Temperature Control

The number of spaces on a zone, and the location of the temperature-sensing point, will affect the control of temperature in the various spaces of a zone. Locating the thermostat in one room of a zone with multiple spaces only provides feedback based on the conditions of that room. Locating a single thermostat in a large open area may provide a better response to the conditions of the zone with multiple spaces. Selecting the room or space that will best represent the thermal characteristics of the space due to both external and internal loads will provide the greatest comfort level.

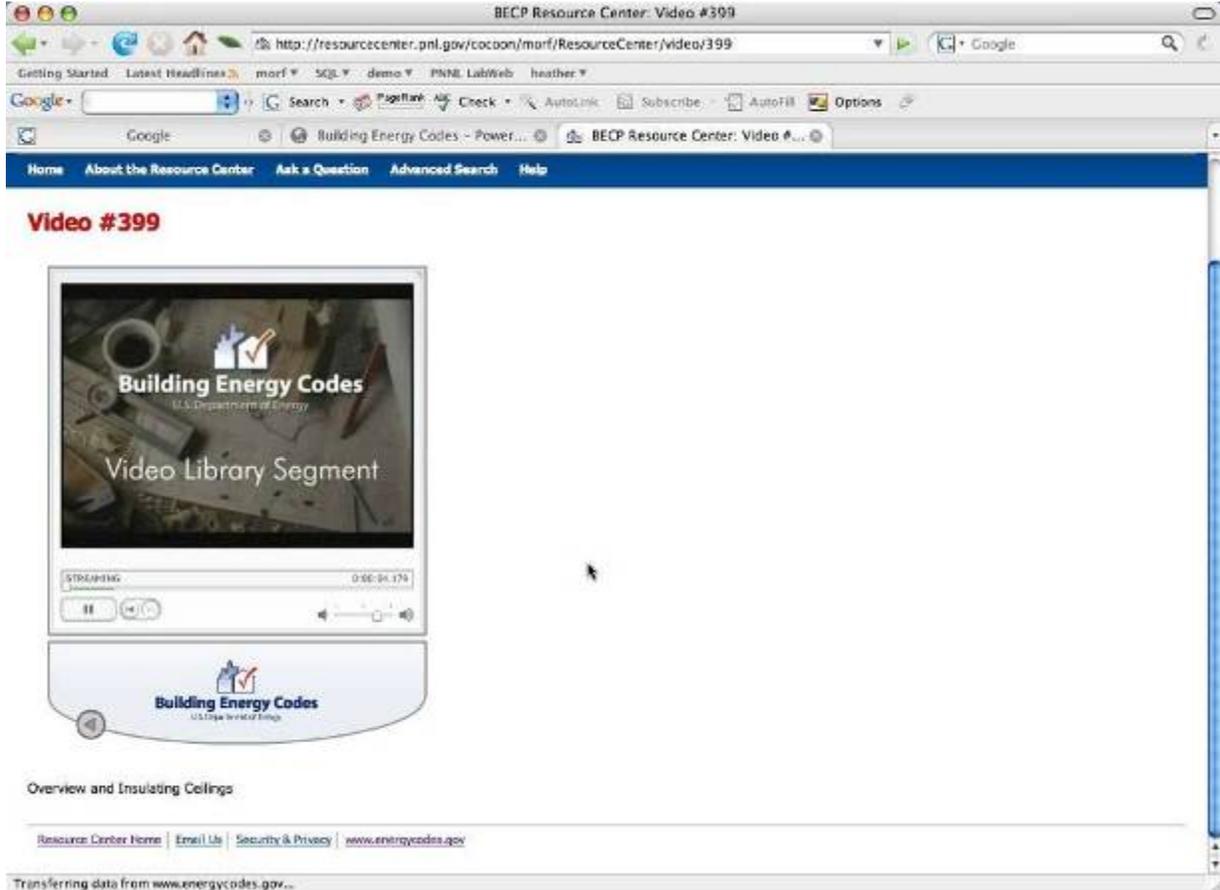
Perimeter system zoning.

RELATED ARTICLES

- #1420: Energy Code Climate Zones
- #1425: AEDG Implementation Recommendations: Daylighting Controls
- Residential State Climate Zone Maps (PDF, 14.7 MB) »
- Commercial State Climate Zone Maps (PDF, 14.6 MB) »
- #1437: AEDG Implementation Recommendations: Noise Control

More Articles»

## slide 55



The screenshot shows a web browser window titled "BECP Resource Center: Video #399". The address bar displays the URL "http://resourcecenter.pnl.gov/cocoon/morf/ResourceCenter/video/399". The browser's search bar contains "Google". The page features a navigation menu with links: "Home", "About the Resource Center", "Ask a Question", "Advanced Search", and "Help". Below the menu, the heading "Video #399" is displayed in red. The main content area contains a video player with a thumbnail image showing construction materials and the text "Building Energy Codes U.S. Department of Energy Video Library Segment". The video player interface includes a "STREAMING" indicator, a progress bar at "0:00-04:17", and standard playback controls (play/pause, stop, volume, full screen). Below the video player, the text "Overview and Insulating Ceilings" is visible. At the bottom of the page, there are links for "Resource Center Home", "Email Us", "Security & Privacy", and "www.energycodes.gov". A status bar at the very bottom indicates "Transferring data from www.energycodes.gov..."

## Video Podcasts – slide 56

- Available online in multiple formats and now in podcasts!
- No iPod required, you can download them in iTunes and watch them on your computer

## Setting the Standard – slide 57

U.S. Department of Energy  
**Energy Efficiency and Renewable Energy** *Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable*

**Building Energy Codes Program**

Search [energycodes.gov](http://energycodes.gov)

**About the Program**  
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Commercial (COMcheck)  
On-line Compliance Tools  
Federal Building Codes - Commercial

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Events Calendar  
Energy Codes Glossary

**Code Analysis and Development**

**Implementation Tools**  
Resource Center  
DOE Determinations  
DOE Assistance  
Resource Materials  
Status of State Energy Codes  
**Setting the Standard**

**Technical Support**  
Code Notes

**Related Links**

DOE's Building Energy Codes Program is an information resource on national model energy codes. We work with other government agencies, state and local jurisdictions, national code organizations, and industry to promote stronger building energy codes and help states adopt, implement, and enforce those codes.

The Program recognizes that energy codes maximize energy efficiency only when they are fully embraced by users and supported through education, implementation, and enforcement.

**Free Software**

**REScheck**  
[REScheck](#), [REScheck-Web](#), [REScheck Package Generator](#)

**COMcheck**  
[COMcheck](#), [COMcheck-Web](#), [COMcheck Package Generator](#)

**Technical Support**

**Resource Center**  
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**Ask an Energy Codes Expert**  
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Site Map  
**Need Help?** - [Ask an Energy Codes Expert \(Software Tools and Energy Codes Assistance\)](#)

[EERE Information Center](#)

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**NEWS**

**Comply! Energy Code Tools You May Be Missing Webcast**  
March 15, 2007

**Federal Register Announcement!**  
New Interim Standards for Federal Buildings published. Requires designs 30 percent below Standard 90.1 or the IECC, if life-cycle cost-effective.

Advanced Energy Design Guides (AEDG) for Small Office and Small Retail Buildings Now Available

## Setting the Standard (Newsletter) – slide 58

- Provides information on
  - code updates,
  - software updates,
  - technical code issues, and
  - beyond code information
- Quarterly distribution
  - Primarily electronic
- Best way to stay up-to-date on tools and changes

## Code Notes– slide 59

U.S. Department of Energy  
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### Building Energy Codes Program

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**Technical Support**

**Resource Center**  
[Resource Center](#)

**Ask an Energy Codes Expert**  
[Ask an Expert](#)

**NEWS**

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Advanced Energy Design Guides (AEDG) for Small Office and Small Retail Buildings Now Available

## Code Notes – slide 60

- Articles that specifically address building energy issues that builders are having with code officials
  - Typically include topics that have been identified as difficult to implement in the field
  - Primary topics are “above” code or “beyond” code with clear code citations
  - Distributed more than 1,000 folders to code officials in cooperation with ICC
  - Suggestions are welcome!

## Web Training – slide 61

U.S. Department of Energy  
Energy Efficiency and Renewable Energy *Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable*

### Building Energy Codes Program

Search [energycodes.gov](http://energycodes.gov)

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**Code Analysis and Development**

**Implementation Tools**  
Resource Center  
DOE Determinations  
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Setting the Standard

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Code Notes

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#### Free Software

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[REScheck](#), [REScheck-Web](#), [REScheck Package Generator](#)

**COMcheck**  
[COMcheck](#), [COMcheck-Web](#), [COMcheck Package Generator](#)

#### Technical Support

**Resource Center**  
[Resource Center](#)

**Ask an Energy Codes Expert**  
[Ask an Expert](#)

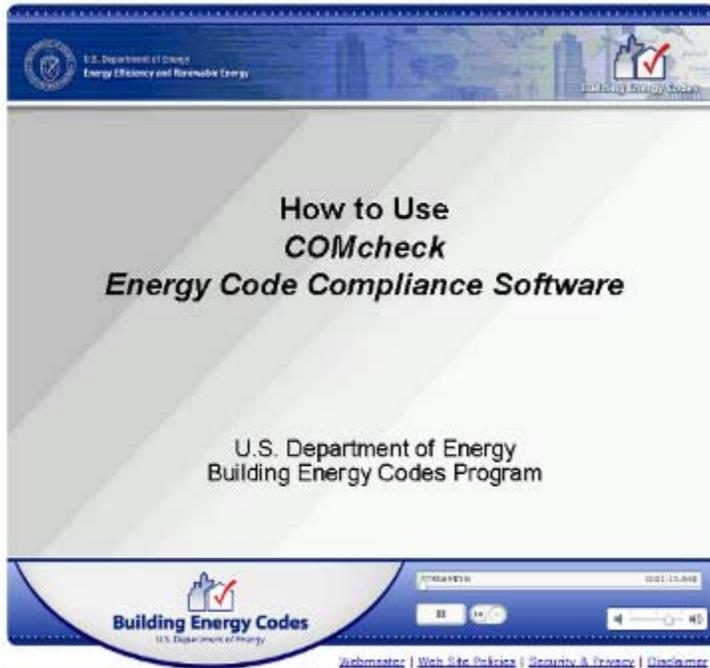
Site Map  
**Need Help?**  
[Ask an Energy Codes Expert \(Software Tools and Energy Codes Assistance\)](#)  
[EERE Information Center](#)  
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**NEWS**  
**Comply! Energy Code Tools You May Be Missing Webcast**  
March 15, 2007  
**Federal Register Announcement!**  
New Interim Standards for Federal Buildings published. Requires designs 30 percent below Standard 90.1 or the IECC, if life-cycle cost-effective.  
[Advanced Energy Design Guides \(AEDG\) for Small Office and Small Retail Buildings Nov Available](#)

## Web Training – slide 62

- Instructor-led web based training including live question and answer
- Downloadable presentations for external trainers
- Training videos from past events available online
- Continuing Education Credits and Certificates of Completion available
- **Current Highlights**
  - REScheck for the 2006 IECC
  - 2009 IECC: On the Road to the 2009 IECC
  - 2006 IECC: Residential Requirements of the 2006 International Energy Conservation Code (IECC)
  - 2006 IECC: Commercial Requirements of the 2006 International Energy Conservation Code (IECC)

## Online Training (Videos) – slide 63



## Web Training Calendar – slide 64

The image is a screenshot of the Building Energy Codes Program website. At the top, there is a green header with the U.S. Department of Energy logo and the text 'U.S. Department of Energy Energy Efficiency and Renewable Energy'. Below the header, there is a blue navigation bar with the text 'Building Energy Codes Program'. The main content area is white and features a large image of a city skyline. On the left side, there is a navigation menu with the following sections: 'About the Program', 'Compliance Tools', 'Training/Education', 'Code Analysis and Development', 'Implementation Tools', and 'Technical Support'. The 'Training/Education' section is circled in red and contains the following links: 'Videos', 'Self-Paced', 'Presentations', 'Events Calendar', and 'Energy Codes Glossary'. The 'Code Analysis and Development' section contains the link 'Energy Codes Glossary'. The 'Implementation Tools' section contains the link 'Setting the Standard'. The 'Technical Support' section contains the link 'Code Notes'. On the right side, there is a search bar with the text 'Search energycodes.gov'. Below the search bar, there is a 'Site Map' section with the text 'Need Help? - Ask an Energy Codes Expert (Software Tools and Energy Codes Assistance)'. Below the 'Site Map' section, there is a 'NEWS' section with the text 'Comply! Energy Code Tool You May Be Missing Webcast March 15, 2007' and 'Federal Register Announcement! New Interim Standards for Federal Buildings published. Requires designs 30 percent below Standard 90.1 or the IECC, if life-cycle cost-effective. Advanced Energy Design Guides (AEDG) for Small Office and Small Retail Buildings Now Available'.

## Web Training Calendar – slide 65

U.S. Department of Energy  
**Energy Efficiency and Renewable Energy**  
improving your prospects, future energy choices, abatement, reliability and affordability

**Building Energy Codes Program**

Search [energycodes.gov](http://energycodes.gov)

Site Map  
**Need Help?** - Ask an Energy Codes Expert (Software Tools and Energy Codes Assistance)  
 EERE Information Center  
 Printer Friendly Format

**Calendar of Events - New York**  
 [Browse All] [Browse by State] [Submit an Event]

MARCH 2007		
Date	Title	Location
3/13/2007	<a href="#">2006 Code Update - New York</a>	Schuyler County
3/15/2007	<a href="#">2006 Code Update - New York</a>	Erie County
3/20/2007	<a href="#">Existing Building Code - New York</a>	Rockland County
3/22/2007	<a href="#">Existing Building Code - New York</a>	Sullivan County
3/22/2007	<a href="#">Existing Building Code - New York</a>	Sullivan County
3/27/2007	<a href="#">Existing Building Code - New York</a>	Saratoga County
3/29/2007	<a href="#">Existing Building Code - New York</a>	Broome County
APRIL 2007		
Date	Title	Location
4/3/2007	<a href="#">2006 Code Update - New York</a>	Jefferson County
4/4/2007	<a href="#">2006 Code Update - New York</a>	Onondaga County
4/5/2007	<a href="#">2006 Code Update - New York</a>	Oneida County
4/24/2007	<a href="#">2006 Code Update - New York</a>	Monroe County
4/25/2007	<a href="#">2006 Code Update - New York</a>	Ontario County

Done

## Web Training – Self-Paced – slide 66

The screenshot shows the homepage of the Building Energy Codes Program. At the top, it features the U.S. Department of Energy logo and the tagline "Energy Efficiency and Renewable Energy". The main header is "Building Energy Codes Program". Below this is a search bar and a navigation menu. The main content area is divided into several sections: "About the Program", "Compliance Tools", "Free Software", "Technical Support", and "Implementation Tools". The "Training/Education" section is highlighted with a red circle. The right sidebar contains a search bar, a "Site Map", and a "NEWS" section with recent updates.

U.S. Department of Energy  
**Energy Efficiency and Renewable Energy** *Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable*

### Building Energy Codes Program

Search [energycodes.gov](http://energycodes.gov)

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Federal Building Codes - Commercial

**Training/Education**  
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**Code Analysis and Development**

**Implementation Tools**  
Resource Center  
DOE Determinations  
DOE Assistance  
Resource Materials  
Status of State Energy Codes  
Setting the Standard

**Technical Support**  
Code Notes

**Related Links**

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### Free Software

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[REScheck](#), [REScheck-Web](#), [REScheck Package Generator](#)

**COMcheck**  
[COMcheck](#), [COMcheck-Web](#), [COMcheck Package Generator](#)

### Technical Support

**Resource Center**  
[Resource Center](#)

**Ask an Energy Codes Expert**  
[Ask an Expert](#)

**NEWS**

**Comply! Energy Code Tools You May Be Missing Webcast**  
March 15, 2007

**Federal Register Announcement!**  
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Advanced Energy Design Guides (AEDG) for Small Office and Small Retail Buildings Now Available

## Online Training (Self-Paced) – slide 67

- Training modules available at no cost
  - REScheck 101
  - COMcheck 101
  - Codes 101
  - Area Takeoffs 101
  - Instructor available electronically as needed
- New materials added as available

## Online Self-Paced Training – slide 68

Building Energy Codes  
**ONLINE TRAINING**

You are not logged in. (Login)

Course categories

- Webcasts
- Videos
- Codes
- Commercial
- Residential
- Area Takeoffs

Search courses...  
All courses...

**Course categories**

- Webcasts**
  - REScheck for the 2006 IECC
- Videos**
  - Advanced Lighting Design and the Energy Code Video
  - Alterations in 90.1 in COMcheck Video
  - Commercial Requirements of the 2006 IECC: Part 1 - Envelope Video
  - Commercial Requirements of the 2006 IECC: Part 2 - Mechanical Video
  - Commercial Requirements of the 2006 IECC: Part 3 - Lighting Video
  - How to Use COMcheck Video
  - How to Use REScheck Video
  - Log Homes in REScheck Video
  - Residential Requirements of the 2006 IECC Video
  - Vestibules Video
- Codes**
  - Codes 101
- Commercial**
  - COMcheck 101
- Residential**
  - REScheck 101
- Area Takeoffs**
  - Area Takeoffs

Search courses

Done

## Online Self-Paced Training – slide 69

Building Energy Codes  
**ONLINE TRAINING**

You are currently using guest access (Login)

energycodes > COMcheck 101

Search Forums

Advanced search

Course categories

- Webcasts
- Videos
- Codes
- Commercial
- Residential
- Area Takeoffs

Search courses...  
All courses...

**Topic outline**

PNNL SA-49262

### COMcheck 101 Training

Welcome to the new Building Energy Codes Program online training tool. This tool allows you to learn about using COMcheck to comply with the 2003 International Energy Conservation Code at your own pace. You can choose to proceed through the course in topic order or proceed to the summary sections and take the test to challenge your knowledge.

Each section is designed to provide a basic overview of the requirements, and most sections have links that provide additional details on that section's topic as well as additional resources for more information if you are interested.

**CEUs:** Participants who successfully complete the course and test and enter their AIA numbers will be submitted to AIA by BECP for 1.5 AIA/CES LU (HSW). A certificate of completion is available for participants who can self-report for CEUs, including for ICC renewal certification. **Note: you must be a registered user of the BECP Training site to access course quizzes and tests.**

**Audience:** Building energy code officials, designers, engineers, builders, and anyone else involved in demonstrating energy code compliance for a commercial building.

**Course Structure:** Self-paced, online

**Continuing Education Credits Offered:** 1.5 AIA/CES LU (HSW); .15 CEUs towards ICC renewal certification.

**Estimated Length:** 1-2 hours

**Author:** Rosemarie Bartlett, CEM, BEP

**Communication:** Via e-mail.

Navigation Overview

**Section Links**

1 2 3 4 5 6 7 8 9

This course covers the basics of complying with the **2003 International Energy Conservation Code** using COMcheck. Each section is designed to provide a basic overview of the requirements, and most sections have links that provide additional details on that section's topic as well as additional resources for more information if you are interested.

**Topics:**

- Scope of IECC
- Envelope General Requirements
- HVAC Efficiency Requirements
- Service Water Heating Requirements
- Lighting Requirements
- COMcheck Compliance Methods
- Energy Code Basics

Each topic section will include:

- Resource Articles

COMcheck

Done

## Online Self-Paced Training – slide 70

Building Energy Codes  
**ONLINE TRAINING**

energycodes > COMcheck 101 > Resources > Temperature Controls

COMcheck 101 Training: HVAC General Requirements Page 2 of 10

### Temperature Controls

Thermostats are required for each separate HVAC system. They must have the capability to set back or temporarily operate the system to maintain zone temperatures down to 55°F or up to 85°F.

Thermostats must be able to reduce temperatures during periods of non-use by either manually adjusting the temperature upward or downward or shutting the system off entirely.

#### Heat Pumps

Heat pump thermostats are required to be capable of preventing supplementary heating when the heating load can be met by the heat pump alone

- supplemental heater operation is only allowed during the outdoor coil defrost cycles

The supplemental heater isn't as efficient, so the less it is used, the more energy that will be saved.

#### Humidity Control

Humidistats used for comfort shall be capable of being set to prevent the use of fossil fuel or electricity to reduce relative humidity below 60 percent or increase relative humidity above 30 percent. The intent is to limit the energy used for humidification until the level in the space falls below 30 percent.



[<<Previous](#)      [Exit](#)      [Next>>](#)

Done

## Online Self-Paced Training – slide 71

Building Energy Codes  
**ONLINE TRAINING**

energycodes > COMcheck 101 > Resources > HVAC Piping Insulation

COMcheck 101 Training: HVAC General Requirements Page 3 of 10

### HVAC Piping Insulation

The requirements in the table apply to HVAC piping located in unconditioned space and conveying fluids > 105°F and < 55°F. Typically, this will apply to refrigerant piping and water piping for hydronic heating systems.

**TABLE 803.3.7**  
**MINIMUM PIPE INSULATION\***  
(thickness in inches)

Fluid	NOMINAL PIPE DIAMETER	
	≤1.5?	>1.5?
Steam	1.5	3.0
Hot water	1.0	2.0
Chilled water, brine or refrigerant	1.0	1.5

For SI: 1 inch = 25.4 mm, Btu per inch/h - ft<sup>2</sup> - °F = W per 25 mm/K - m  
a. Based on insulation having a conductivity not exceeding 0.27 Btu per inch/h - ft<sup>2</sup> - °F

Done

## **Key Things to Remember – slide 72**

- Website
  - Provides a central resource to find other tools and averages over 3.5 million hits per month ([www.energycodes.gov](http://www.energycodes.gov))
- Technical Support
  - Team responds to 300+ technical support questions each month. Send us your questions.
- Web-based Training
  - Videos and self-paced materials reached over 6,500 people last year. Send us your suggested topics.
- Resource Center
  - Thousands of articles to help with everything from the software to beyond code topics. Send us suggested topics.
- Setting the Standard
  - Sign up if you haven't already

## **Live Q&A**