California Energy Commission

CBECC-Res

Computer Program Training

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Welcome!

Title 24 Computer Software

- California Building Energy Code Compliance
- Public Domain Residential
- Free; no cost to users

General Information

- Prerequisite
  - You know how to model buildings
- CF1R watermarks & Files for registration
- Background
  - Package A, Section 150.1 (the basis for the Standard Design Energy Use)
  - ACM Reference Manual (more details)

Useful Tools

- User Manual
  - Accessible from Help
- Quick Start Guide
  - Accessible from Help
- Frequently Asked Questions
  - Found in Quick Start Guide

Installing Software

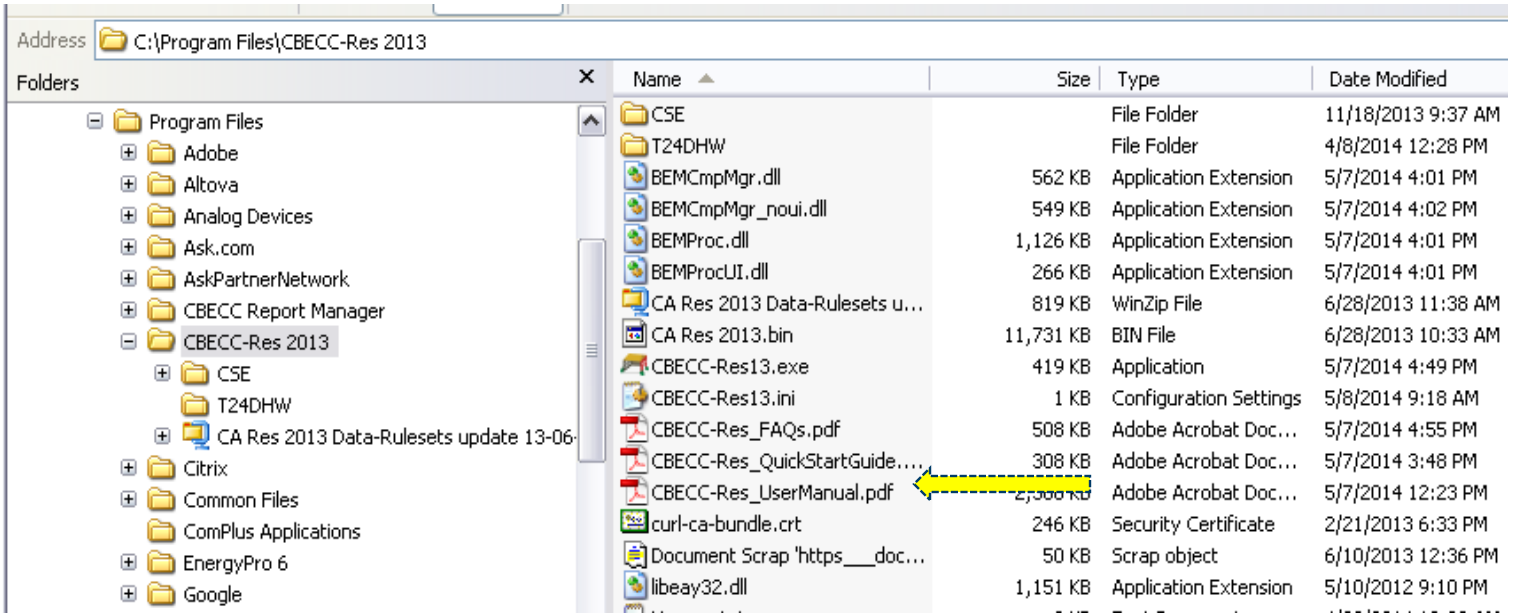
- Download CBECC-Res (Version 2)
  - www.bwilcox.com/BEES/BEES.html
  - www.energy.ca.gov/title24/2013standards/
- Change drive/**do not** change names
- Assistance (as shown in Quick Start Guide)
  - cbecc.res@gmail.com

Things to Know

- Input file names are *.ribd
- CBECC is slow
  - 3+ minutes to run
  - Tip: Don’t run cardinal until you have to
- If you don’t see User Manual or CF1R
  - Where are they?

Files

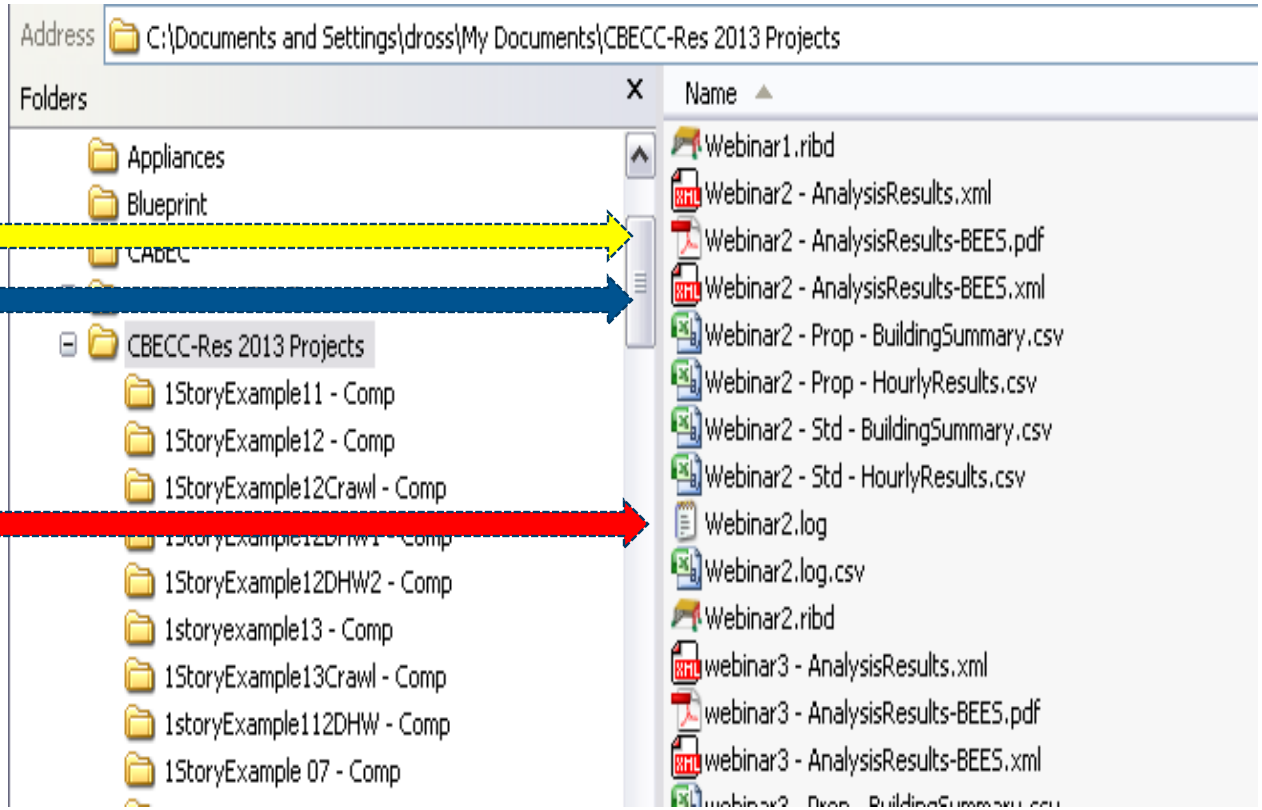
C:\Program Files\CBECC-Res 2013



Really Important Files

Where: My Documents\CBECC-Res 2013 Projects

- CF1R (PDF)
- HERS upload (BEES.xml)
- "log" (errors)



Expectations

- Expect things to change
- Needs of software users are different
  - Standards requirements, Compliance, Builders, HERS providers, HERS Raters, Programmers
- There is a variety of different modeling inputs

Naming

- Save before running
- To rename, pick “File” and “Save As”
- Field Names – 25 characters

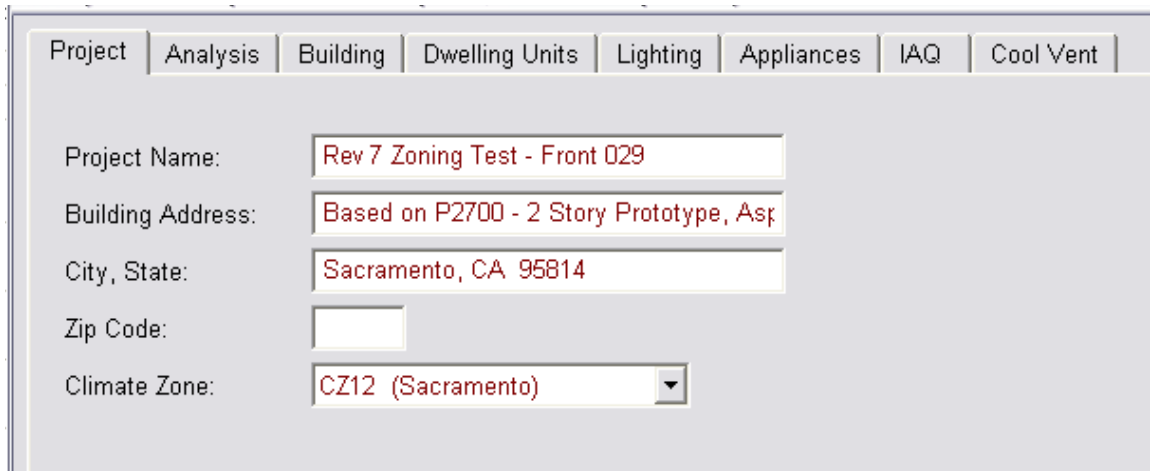
User Manual

Chapter 1: Overview (general terms)

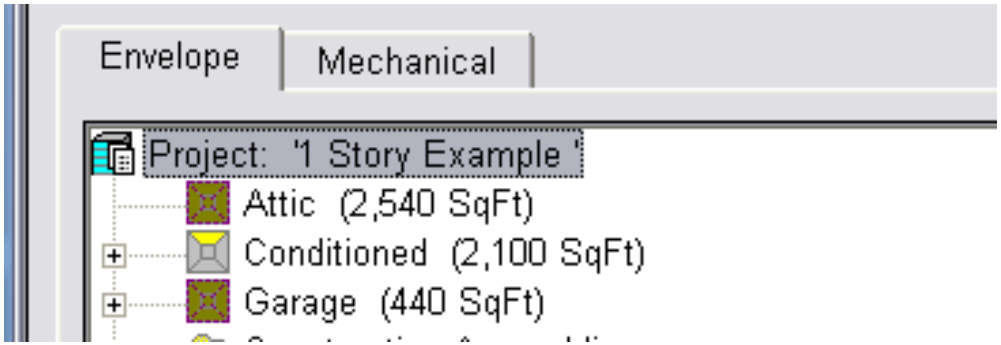
Chapter 2: Getting Started (buttons, tools, etc.)

Chapter 3: Tutorial

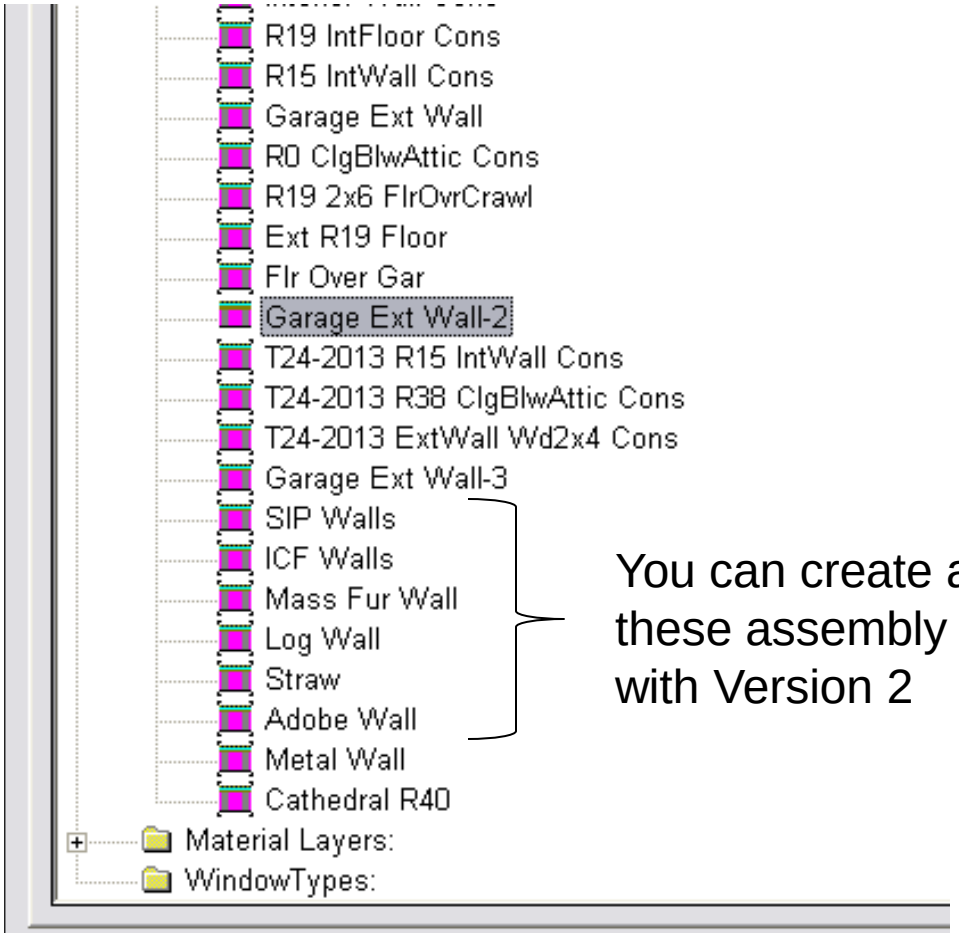
Chapter 4: Project (top level inputs)



Chapter 5: Zones



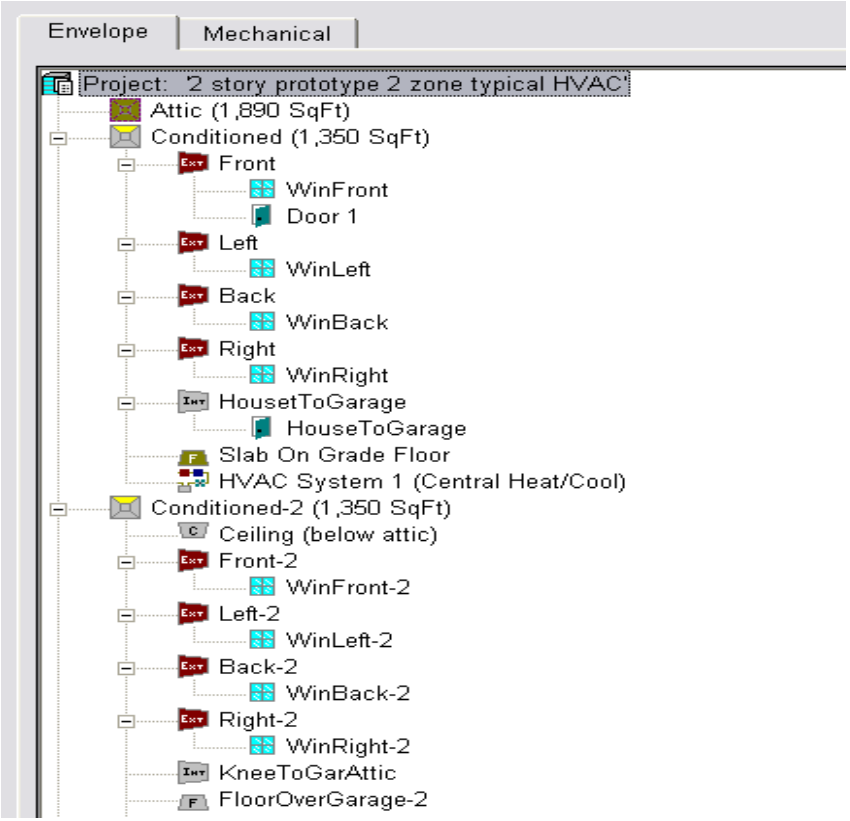
Chapter 6: Assemblies/Window Types



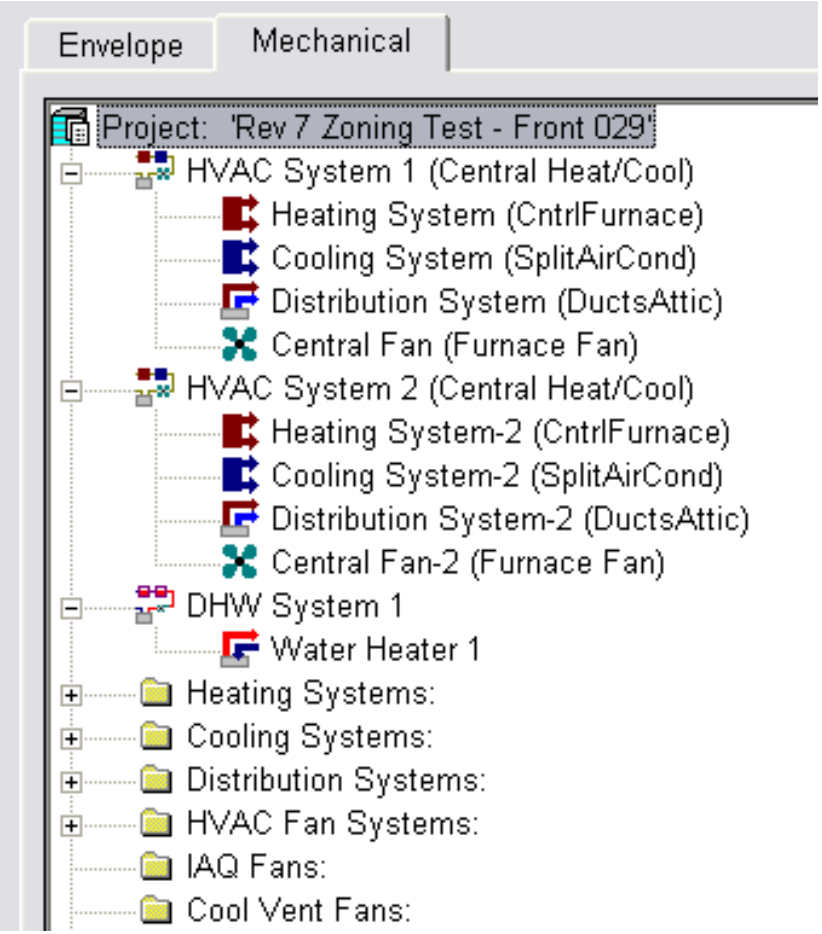
You can create all of these assembly types with Version 2

Chapter 7: Building

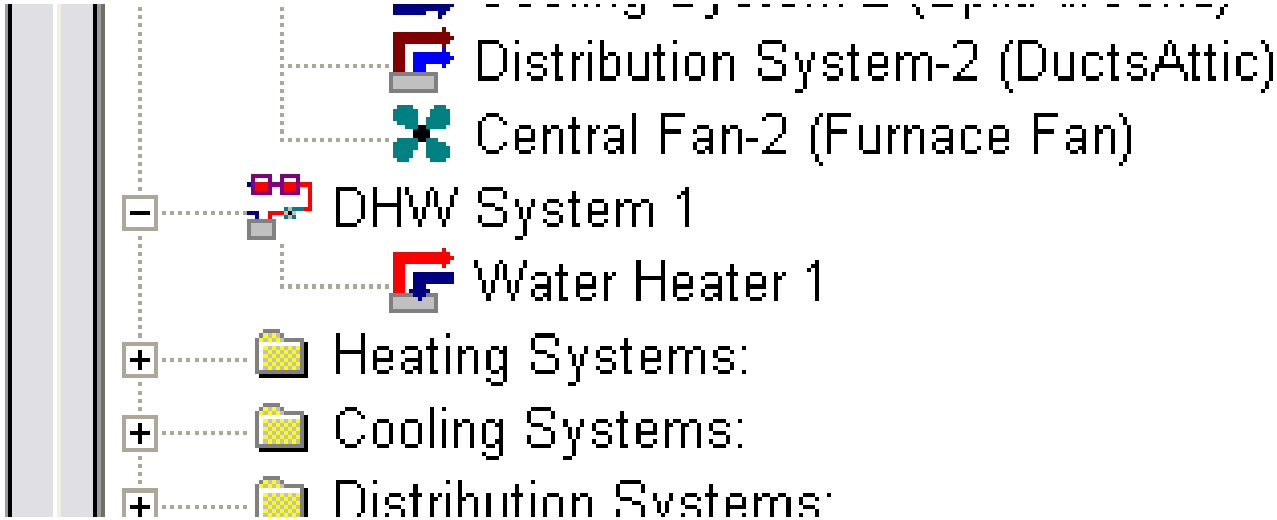
- The contents of the zone or building
- Ceilings
- Walls
- Windows, overhangs, fins



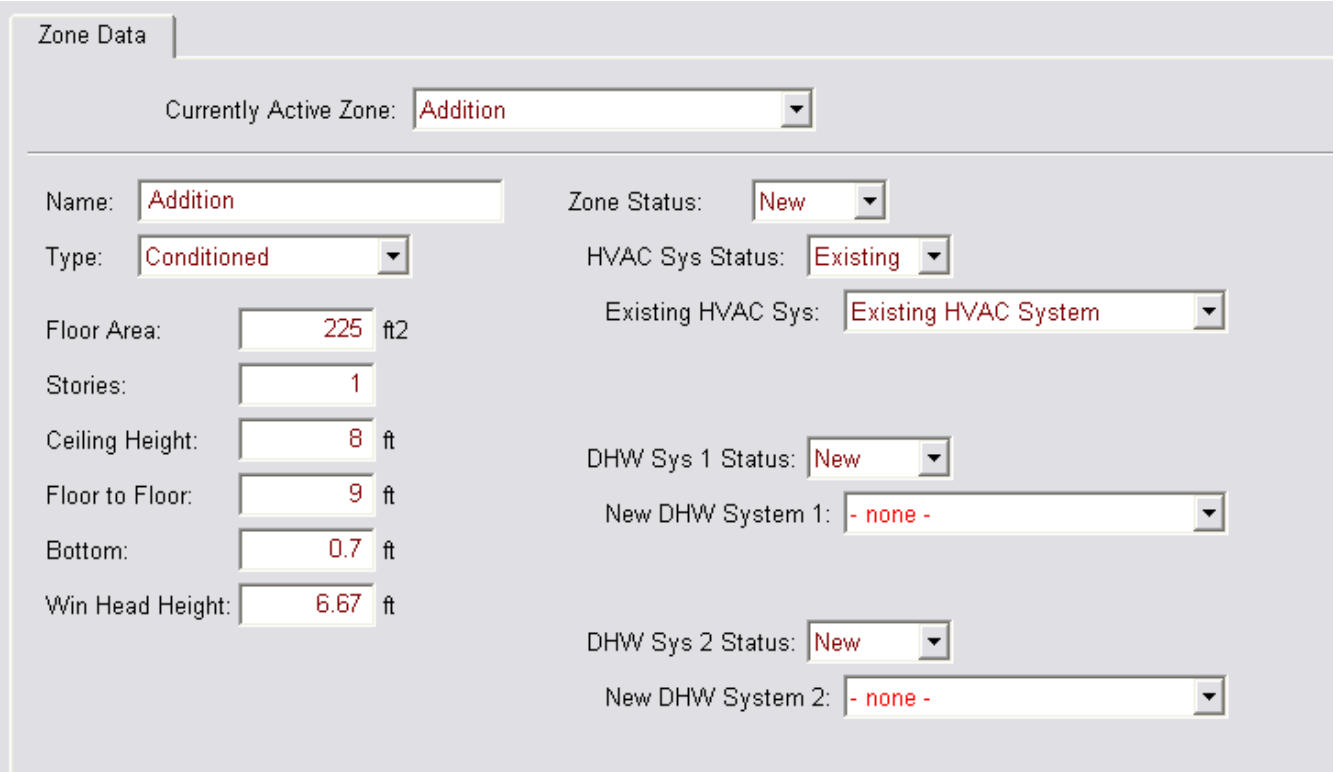
Chapter 8: Mechanical



Chapter 9: Water Heating

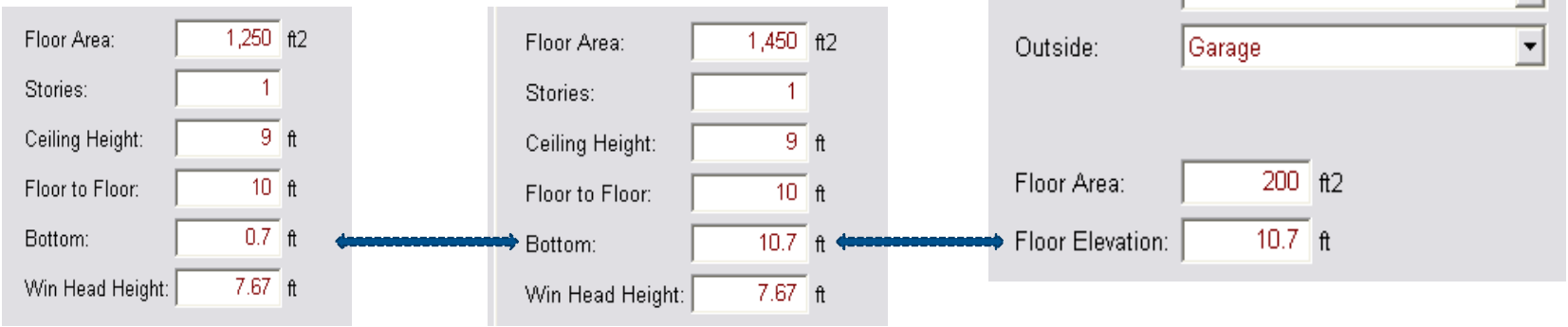


Chapter 10: Additions/Alterations



Modeling Differences

Bottom & Floor Elevation

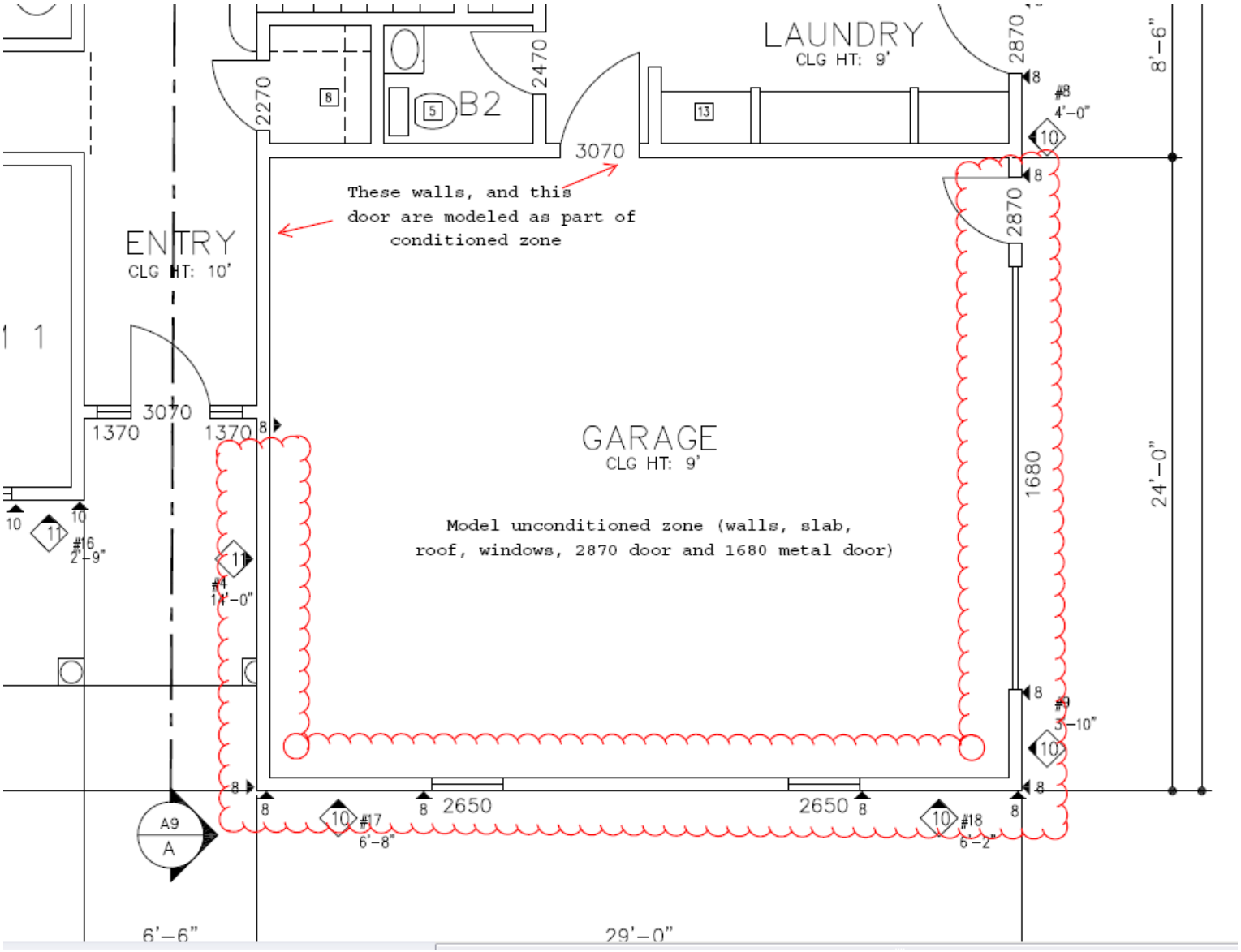


- A slab on grade floor elevation is 0.7, not 0
- Or a 2-ft crawl space will have a floor w/ an elevation of 2 feet
- A 2nd floor zone, or a floor over garage, has a value of floor to floor (10) + bottom (0.7) = 10.7

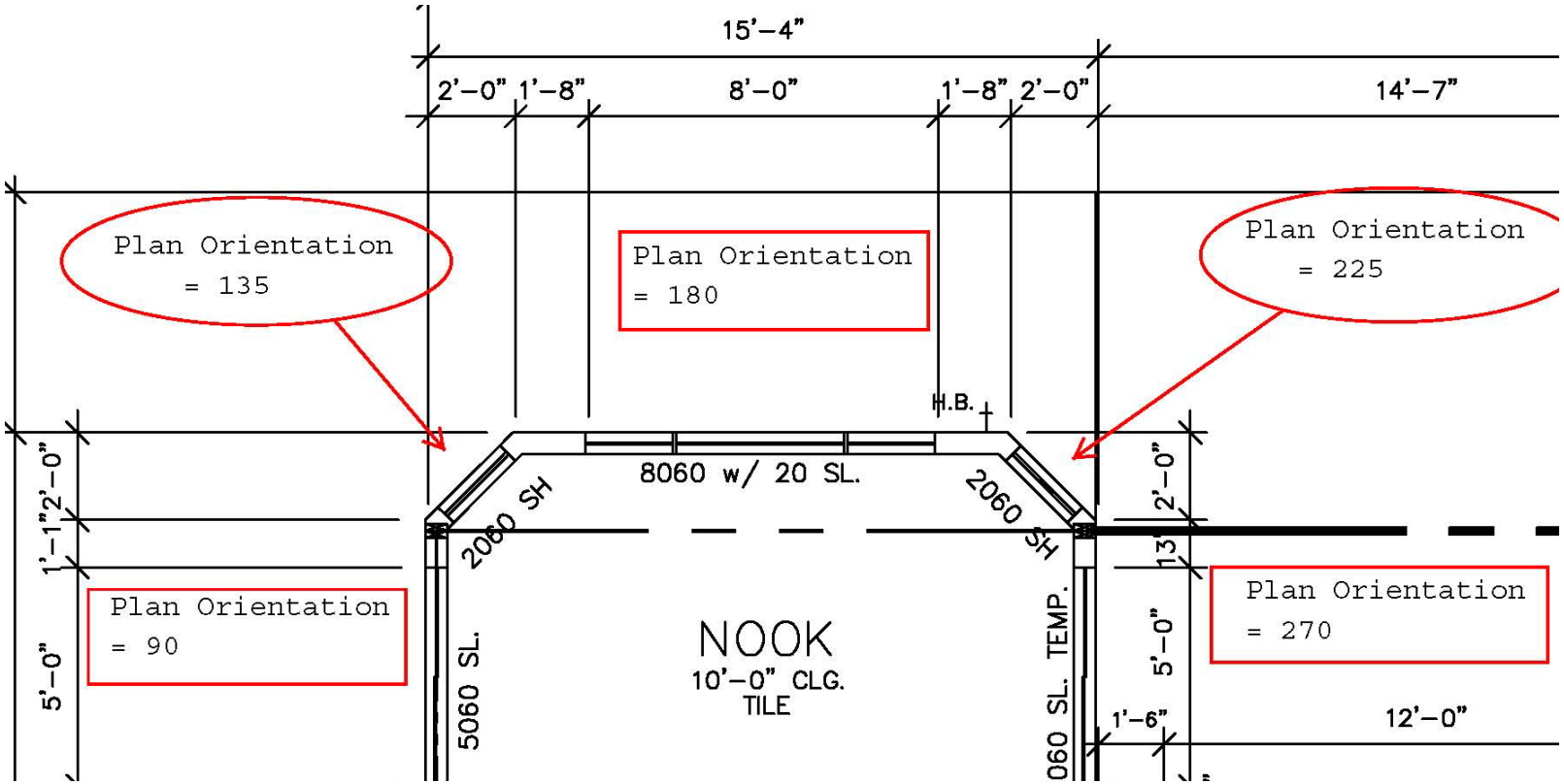
# of Stories (in the zone/not in the building)

Other Modeling Differences

- Edges (don't include the house/garage edge)
- Crawl space perimeter (measured like a slab edge)
- Floors/walls adjacent to garages are "interior"
- Garages – you have to model the garage


LAUNDRY
CLG HT: 9'
ENTRY
CLG HT: 10'
GARAGE
CLG HT: 9'
B2
These walls, and this door are modeled as part of conditioned zone
Model unconditioned zone (walls, slab, roof, windows, 2870 door and 1680 metal door)
3070
1370
1370
3070
2270
2470
2870
2870
1680
8'-6"
24'-0"
2650
2650
6'-6"
29'-0"
A9
A

Plan Orientation/Not Actual



Front (0), Left (90), Back (180), Right (270)
315, 45, 135, 225

#s are relative to the front

Let's Get Going

- CF1R and Tools
- Most effective ways to use the software
- Errors
- Finding more on multi-family
- How to approach additions/alterations
- File maintenance

Errors

- Sometimes you get error message
- If not look for *.LOG (whole history of that file)
- Have done our best to keep old files opening.
  - But if starting a new project, start with a file with a 13 or higher #

Multi-Family

- Use the sample file for multi-family (MFExample15 or MFExample15Central)
- Check the frequently asked questions for some guidelines on multi-family
- Each floor is a separate zone
- Create zones first, then create the dwelling units
- Include an interior floor for the upstairs or middle floor units, and 4 walls even if some are interior

Additions

- Improvements or changes being made
- HVAC situation
- Read Section 150.2(a) with project in mind
- Read Chapter 10 of User's Manual
- Addition is a separate zone
- Status is "New"
- Only exception is HVAC

Addition Alone

- Use the sample AAExample13
- Run Scope “Newly Constructed” + ☒ Addition Alone
- Fraction of a dwelling unit
- Ask client how they’ll condition the addition, and then read Chapter 10 for how to model that

File Maintenance

- *.ribd → Input File
- * - AnalysisResults-BEES.xml → File uploaded to HERS provider

* = user defined name

Contacts

- CBECC-Res 2013 software can be downloaded
  http://www.bwilcox.com/BEES/BEES.html

  www.energy.ca.gov/title24/2013standards/

- To report problems
  - E-mail: cbecc.res@gmail.com

- Send the *.ribd / input file

Questions & Answers

Please type your question in the “chat box”