Course Curriculum

❖ Input Strategies
  a. Wizards or No Wizards? When to use them.
        i. Start new projects with the DD wizard. –this is an easy way to start with your basic "template" inputs for any model (New Construction & Existing Buildings)
        ii. Wizards are the easiest way (only way) to input custom building footprints & zoning
        iii. It is not common, or recommended to input building footprints & zones outside of the wizards (SD & DD)
        iv.
  b. Wizards are good for different things-SD wizard VS. DD wizard
        i. The SD wizard is for setting up basic SD & preliminary project models. Use this wizard to do a basic analysis or for a very simplified building
        ii. DD wizard is the best way (simplified) way to begin a building model. There are some basic inputs in the wizard mode that will simplify your ECM inputs after you have moved into DDedit mode (design detail edit.)
  c. Using wizards for custom floor plans (use ACAD files for reference)& custom window placement
        i. Input can be done with the basic (X,Y,Z) coordinate approach
        ii. Input can be done with ACAD files imported
  d. Wizards are perfect for creating SD level models
        i. If a project is looking at building orientation options, building envelope ECM analysis, or non HVAC ECM analysis.
  e. ALWAYS start your inputs via the wizards
        i. This is the most simplified & efficient input approach
        ii. AT THIS POINT ALWAYS SAVE A FILE IN "WIZARD MODE", starting over on your input files may require you to back track or 're-start' from the Wizard mode. (Sometimes eQuest files will just become corrupt without explanation. It is always a time saver to save reference files at major starting/stopping points with your input process.)
  f. Detailed Edit Mode
        i. What is this mode good for?
            1. This mode is used for detailed design inputs and ECM analysis. All complex building zoning and HVAC systems will need to be completed in DDedit mode to perform specific energy analysis simulations.
            2. Greater depth of input control for creating complex building shells as well
                a. How to create rounded/arced surfaces, angled surfaces, etc.
        ii. Will use this mode 100% of the time for DD & CD level models.
            1. All compliance models & baseline models will need to be completed in DDedit mode. There is no way around this.

❖ Setting up Model Templates
    a. What are the commonalities in your projects? (Generate list with input from the participants.)
    b. What are the basic-common input assumptions? (Generate list, this would include items like infiltration rate, fan static pressure, misc. equipment loads, etc.)
    c. In the wizard—turning daylighting on and then off…(show example)-why this makes things easier

❖ Developing/Modeling specific ECM's
    a. Upgrading hydronic heating boilers from older units to high efficiency condensing boilers, or simple insulation upgrades on the thermal shell.
    b. "save as" method
    c. Parametric method
    d. Understanding DOE code for specifying ECM data

❖ Simulating Complex HVAC systems
    a. Attention to modeling specific system types with complex inputs and equipment (I will take cues from you on which hydronic systems need to be covered along with some additional systems that I have been challenged to model-i.e. ice rinks, refrigeration systems, underfloor air, radiant systems including chilled slabs, etc.)
    b. How to's on "tricking" simulation programs into modeling systems that can't be "chosen" from the list…

❖ DOE-2 Checks & Reports
    a. DOE-2 Ten minute checklist
    b. Referencing DOE-2 reports-which ones?
    c. Understand your weather data and files
    d. *Additional items to be added to curriculum*

❖ Simulation Output Data
    a. Confidently verifying output data (baseline, and ECM results)
    b. How to use eQuest reports to create energy simulation reports
    c. *Additional items to be added to curriculum*

❖ User questions—(familiarity levels range from sheer terror, some familiarity, fairly familiar)—I intend to interject the opportunity for user questions as an ongoing discussion. I will also schedule some brief time during introductions to list specific questions from your team that they are looking to be answered before the end of the training. There will also be some brief time for follow-up user questions at the end of things and a short 'debriefing' discussion after the 2-day session.

❖ Simulation Tips—'From one user to another' discussion.
    I have many tips that I have developed through my experiences and eQuest training. I hope that your team can also share tips with each other and with me in an effort to connect from one simulator to another.

Simulation Examples

I have several real-life projects that I can share and use to demonstrate different examples. I would also like to try and have each participant use one of their models that they are familiar working with. They will be able to use a "save as" file of their projects to use as experimental model files when learning different simulation techniques.

Basic Agenda

I recommend the typical agenda of 8:00 or 9:00 am start with breaks & lunch each day. The proposed curriculum will be fit into the daily agenda and mixed in with time for user questions and hands on exercises.

I prefer to teach with methods that are very hands on and interactive. My style is not the "talk-at-you" style with power-point slides. Don't get me wrong, there will be some power-point style information that I will need to share, but this is mostly for calculations, formatting tricks for output review, and reference data that participants will be interested to take notes on.

Equipment Needs & Materials

All participants should bring a computer with them to work with. The training space should be able to accommodate a computer for each participant and my laptop. A projector will also be needed for visual demonstration of techniques. If you do not have a projector available please let me know so I can arrange for one. Some form of a flip-chart or white board is also needed.

I will have a packet of reference materials for the participants to use and take away from the class. Some tools and documents will be provided in electronic format.