



Vol. 1, Issue 1

> Welcome

Welcome to the premier issue of EXchange, offering timely, informative and interesting news on the Carrier® eDesign Suite of Software. Delivered quarterly, each issue will provide a wealth of information including technical resources, software updates, training schedules and registration, and answers to frequently asked questions.

In this issue, the new Carrier® Building System Optimizer software tool is introduced. The Building System Optimizer is a key component of Carrier’s suite of software tools, which has been renamed Carrier eDesign Suite, replacing the E20-II software name that has been used since 1981. The E-20 name was derived from Carrier’s System Design Manual and the Engineering Form E-20 which was used to calculate peak cooling and heating loads for buildings in the 1960’s and - a core engineering task and the first step in sizing and selecting HVAC equipment.

This issue also reviews the new Carrier® HAP version 4.61 software, introduces an Advanced HAP Modeling course, and includes the latest update to the 2012 training schedule. Class sizes are limited and early registration is encouraged.

We look forward to bringing you all the latest Carrier eDesign Suite news and encourage you to exchange ideas with us on ways to make this newsletter, and more importantly, eDesign Suite a key resource in your technical software arsenal.

Your feedback, suggestions for improvement, or future topics of interest can be submitted via email to: software.systems@carrier.utc.com

— Carrier eDesign Suite team

> Carrier® HAP v4.6 Expands Modeling and Productivity Features

Carrier’s latest version of the Hourly Analysis Program (HAP) software incorporates expanded capabilities for modeling HVAC equipment and controls, and new productivity features.

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> Frequently Asked Questions

How can I be certain I am using the latest version of Carrier’s software? If you are using an old version of the software, you are missing out on many useful features that have been added in newer versions.

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> 2012 Training Class Schedule

[Click here to read the schedule.](#)

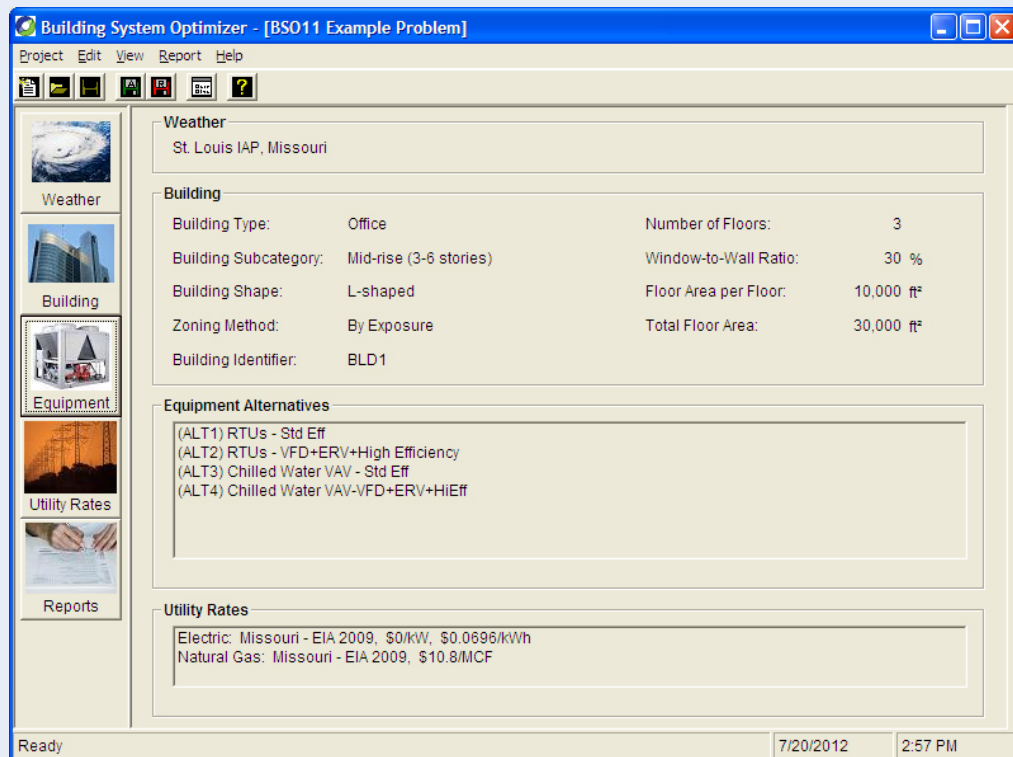
- [New Building System Optimizer](#)
- [New HAP v4.61](#)
- [Advanced HAP Training Course](#)
- [Frequently Asked Questions](#)
- [2012 Training Class Schedule](#)
- [Contact Us](#)

➤ New Carrier® Building System Optimizer



For busy building system designers, every minute counts. But imagine configuring and calculating the energy impact of alternate heating, ventilation and air conditioning systems (HVAC) system designs in less than 15 minutes. With HVAC accounting for more than 40 percent of a building’s total energy use, Carrier introduces its eDesign Suite software tools to help building designers rapidly compare annual energy costs for HVAC designs.

Supporting the design of high performance buildings that consume less energy, Carrier created the eDesign Suite to help engineers in the early design phase of a project, when rapid evaluation of design alternatives is critical. The **Building System Optimizer**, a major new offering under the eDesign Suite, uses a streamlined user interface and automatic model generation to allow a full model of the building and its HVAC systems to be configured in just minutes. A typical building energy analysis requires a large amount of data to describe the building and its HVAC systems. The Carrier Building System Optimizer asks high level questions about a building, including size, shape and use (office, retail, school, etc.) and then applies built-in logic to automatically generate a detailed model.



Building System Optimizer Rapidly Configures HVAC System Comparisons

[Click here](#) to learn more about Building System Optimizer.

The Building System Optimizer is the latest addition to Carrier’s suite of software tools, which has been renamed Carrier eDesign Suite, replacing the E20-II software suite name that has been used since 1981.

“The Building System Optimizer adopts the most current technology to automate key engineering tasks involved in the design of HVAC systems, saving engineers one of the things they value most - time.”

Carrier eDesign Suite in addition to the Building System Optimizer, includes the following software tools:

- **Hourly Analysis Program (HAP)** – calculates peak cooling and heating loads for buildings; sizes HVAC systems and equipment components, calculates and compares annual energy costs for design alternatives, and performs prescribed analysis for LEED® Energy and Atmosphere Credit 1.
- **System Design Load** - provides the complete peak load calculation and system sizing features from HAP in a standalone program.
- **Block Load** – provides peak load calculation and system sizing features in a streamlined format for designing single-zone constant volume, variable air volume and fan coil applications.
- **Engineering Economic Analysis** - compares lifecycle costs for HVAC design alternatives to determine which design has the best lifecycle cost.
- **Refrigerant Piping Design** - calculates required sizes for refrigerant piping connecting components in split DX air conditioning systems and for chillers using remote condensers or evaporators.



- [Welcome](#)
- [New Building System Optimizer](#)
- [New HAP v4.61](#)
- [Advanced HAP Training Course](#)
- [Frequently Asked Questions](#)
- [2012 Training Class Schedule](#)
- [Contact Us](#)

➤ Carrier® HAP v4.6 Expands Modeling and Productivity Features

Carrier® Hourly Analysis Program v4.60 and v4.61, released in March and July 2012, respectively, incorporate expanded capabilities for modeling heating, ventilation and air-conditioning (HVAC) equipment and controls as well as features to increase user productivity.

HAP v4.60 provides new and revised simulation models for:

- Variable Refrigerant Flow (VRF) equipment.
- Two-speed indoor fan control in single-zone constant air volume (CAV) packaged and split DX equipment.
- Two-stage compression in single zone CAV packaged and split DX cooling equipment.
- Multiple boilers, boiler sequencing controls and hot water reset controls for boiler plants.
- Condensing and non-condensing boilers.
- Variable-speed/variable-flow condenser pumps and dry coolers in chiller plants.
- Dry cooler models for chiller plants, water source heat pump (WSHP) systems and water-cooled vertical packaged air-conditioning (VPAC) systems.
- Upgraded simulation model performance curves for all air-cooled DX cooling equipment and air source heat pump equipment.

Features in v4.60 designed to improve user productivity include the ability to:

- Merge multiple projects into one large project for an overall energy modeling calculation.
- Import simulation weather data from external files using common file formats such as EnergyPlus EPW, ASHRAE International Weather and Energy Calculations (IEWC), ASHRAE IWEC2, NOAA TMY2 and NOAA TMY3.
- Default electricity and gas prices by selecting Energy Information Administration (EIA) state-average price data rather than defining prices manually.
- Pass system design results from HAP to E-CAT for use in equipment selection.
- Email to your sales engineer and request equipment selection.

Finally, HAP v4.61 contains the following changes:

- Greater flexibility in defining lighting ballast factors to facilitate modeling of current high efficiency lighting fixtures and streamline work in conducting lighting retrofit analyses.
- Expanded ASHRAE 90.1 default schedule libraries to include schedules for elevators and service hot water demand.

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• [Welcome](#)

• [New Building System Optimizer](#)

• [New HAP v4.61](#)

• [Advanced HAP Training Course](#)

• [Frequently Asked Questions](#)

• [2012 Training Class Schedule](#)

• [Contact Us](#)

> Carrier Announces New Advanced HAP Modeling Course

For more experienced HAP users, Carrier has created an advanced HAP training course entitled **The Modeling Notebook – Advanced Modeling Techniques for HVAC Systems**. The full-day course will be offered for the first time on Friday, Aug. 17, 2012 in Charlotte, NC. Additional cities will be added regularly to the training schedule throughout 2012 and 2013.

In the new course, students will complete hands-on modeling for application-specific systems and modeling topics. Prior knowledge of HAP load estimating and energy simulation is recommended before taking this course.

Workshops include:

- Defining, diagnosing and troubleshooting LEED® unmet load hours on a HAP project.
- Optimizing the required ventilation air quantity for a multi-zone application using the ASHRAE Ventilation Rate Procedure.
- Generating HAP models for:
 1. 100 percent outdoor air variable air volume (VAV) system supplying the required amount of tempered make-up air for laboratory exhaust hoods.
 2. 100 percent outdoor air VAV system controlled by zone thermostats.
 3. 100 percent outdoor air system and a multiple zone heating and cooling terminal system.
 4. Air system with pre-treated outdoor air ducted to its inlet.
 5. Variable refrigerant flow (VRF) air system.
 6. Air system providing some or all of the heating from a free or waste source.
 7. Boiler plant that serves both the domestic (service) hot water (DHW) system and the building heating system.
 8. Unconditioned spaces for LEED projects.
- Merging data from multiple projects into one project.
- Using Wizards to enhance modeling productivity for preliminary design.
- District heating and cooling for LEED.

Students are invited to [register now](#) for the Aug. 17 class in Charlotte, NC. The class is scheduled from 8:30 a.m. to 5:00 p.m. and lunch is included.



- [Welcome](#)
- [New Building System Optimizer](#)
- [New HAP v4.61](#)
- [Advanced HAP Training Course](#)
- [Frequently Asked Questions](#)
- [2012 Training Class Schedule](#)
- [Contact Us](#)

> Frequently Asked Questions

Q. How can I be certain I am using the latest version of Carrier software?

A. Using an old version of Carrier software means you are missing out on many useful features that have been added in newer versions. Here’s an easy way to determine what the most recent version of software available is:

1. Click here: [Latest Version](#).
2. When the web page appears, scroll down to “eDesign Suite Program Updates” table.
3. Check the version number in the “Current Update Version” column of this table. If you aren’t using the latest version and would like to upgrade, here is what you can do:
 - a. If the version you are using matches one of the versions shown in the Base Version column of the table, simply download the patch file using the hyperlink in the Current Update Version column and install. The patch will upgrade you to the latest version.
 - b. If you are using a version older than the Base Version, email software.systems@carrier.utc.com to ask for assistance in upgrading to the [latest version](#).

Q. My firm has an IT department, which controls the distribution and installation of new software on our computer workstations. Is there anything in particular they need to know to install HAP updates?

A. HAP operating requirements are similar to most commercial software.

First, to install the software you need full administrative rights. When installing the software, ensure other programs are not running.

To operate HAP, the user’s login account needs to have full file access rights to the \E20-II folder and all its subfolders. This means rights which allow the user to read, write, create and destroy files in these folders. If projects are going to be stored somewhere other than \E20-II\Projects, then file access rights are needed in those locations as well.

If the software is installed on a drive other than C:, full file access rights are also needed in the C:\E20-II folder and its subfolders.

Note that “access rights”, are different from “administrative rights”. A computer administrator (usually IT staff) can grant a user full access rights to specific folders without making that user an Administrator.



- [Welcome](#)
- [New Building System Optimizer](#)
- [New HAP v4.61](#)
- [Advanced HAP Training Course](#)
- [Frequently Asked Questions](#)
- [2012 Training Class Schedule](#)
- [Contact Us](#)

Type your question

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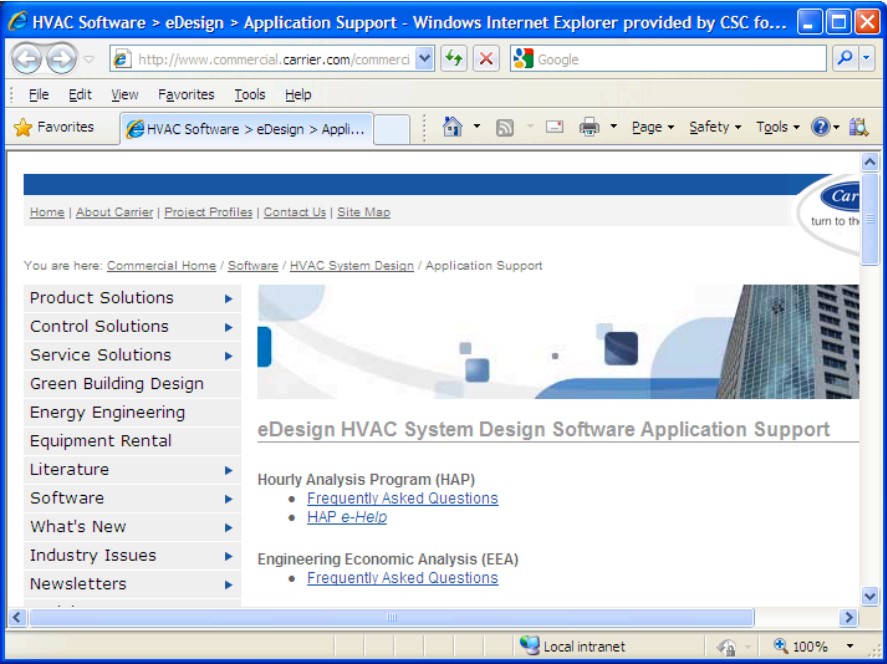
> Frequently Asked Questions

Q. Before contacting Carrier’s software support team, is there a collection of frequently asked questions (FAQs) that can be reviewed?

A. Yes, you can access HAP and Engineering Economic Analysis Frequently Asked Questions by visiting the eDesign HVAC System Design Software Application Support webpage. Here you will find FAQs as well as eHelp articles explaining various application topics.

Alternatively, you can access HAP frequently asked questions directly from your HAP program. Here’s how:

1. While running HAP, select the Support Web Site option on the Help Menu.
2. This option will launch your internet browser and display the Software Application web page (figure below).



Q. I’m developing an energy model for a building located at a site for which HAP does not currently offer a simulation weather file. What is the best way to handle this situation?

A. While HAP offers a library of simulation weather data for over 500 cities worldwide, a new feature in HAP v4.6 allows you to import data from external weather files into your projects. [A linked article](#) describes the procedure for importing this weather data and then provides application information to help you determine your data format, how to find weather from external sources and how to validate data after it is imported.



- Welcome
- New Building System Optimizer
- New HAP v4.61
- Advanced HAP Training Course
- Frequently Asked Questions
- 2012 Training Class Schedule
- Contact Us

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➤ 2012 Training Class Schedule

Location	Using HAP for Load Estimating	Using HAP for Energy Simulation	Using HAP for LEED® 2009 EA Cr 1	Modeling Notebook
Charlotte, NC	Aug 14	Aug 15	Aug 16	Aug 17
Boston, MA	Sept 11	Sept 12	Sept 13	Sept 14
Washington, D.C.	Oct 16	Oct 17	Oct 18	Oct 19
Atlanta, GA	Nov 5	Nov 6	Nov 7	Nov 8
Denver, CO	NA	Dec 4	Dec 5	Dec 6
New York, NY	Dec 10	NA	NA	Dec 11

Additional classes are being added. Please check the training web site for [the latest schedule](#).

eDesign Suite Software Current Versions (North America)

Program Name	Current Version	Functionality
Hourly Analysis Program (HAP)	v4.61	Peak load calculation, system design, whole building energy modeling, LEED® analysis.
Building System Optimizer	v1.10	Whole building energy modeling for schematic design (Available in August 2012).
Block Load	v4.15	Peak load calculation, system design.
Engineering Economic Analysis	v3.01	Lifecycle cost analysis.
Refrigerant Piping Design	v4.00	Refrigerant line sizing.
System Design Load	v4.61	Peak load calculation, system design.



- Welcome
- New Building System Optimizer
- New HAP v4.61
- Advanced HAP Training Course
- Frequently Asked Questions
- 2012 Training Class Schedule
- Contact Us