

Climate Analysis Features

- Provides a database of design weather data for over 700 cities worldwide.
- Uses TMY and TRY-type hourly weather data for energy simulations.
- Provides a library of simulation weather data for over 400 cities worldwide (included on CD-ROM).

Load Calculation Features

- Uses ASHRAE procedures for Transfer Function cooling load calculations, design heating load calculations, solar radiation calculations.
- Calculates room and zone loads 24 hours a day for design days in all 12 months.
- Identifies peak room, zone, and coil loads.
- Permits hourly and seasonal scheduling of occupancy, internal loads, and fan and thermostat operation.

System Design Reports

- Provides features for copy-and-paste from displayed reports into other documents, and for saving reports as RTF-format documents.

Air System Analysis Features

- Performs detailed hour-by-hour simulations of the thermal and mechanical behavior of air handling systems for both system design and energy analysis.
- Equipment types include:
 - Packaged Rooftop Units
 - Packaged Vertical Units
 - Split DX Air Handling Units
 - Chilled Water Air Handling Units
 - Packaged and Split DX Fan Coils
 - Hydronic Fan Coils
 - Water Source Heat Pumps
- System types include:
 - Single Zone CAV
 - CAV with Terminal Reheat
 - Multizone CAV
 - Bypass Multizone CAV
 - Dual Duct CAV
 - 4-Pipe Induction
 - Tempering Ventilation
 - VAV and VAV with Reheat, Series Fan Powered Mixing Boxes, Parallel Fan Powered Mixing Boxes, or mixed terminals.
 - 1-Fan Dual Duct VAV
 - 2-Fan Dual Duct VAV
 - VVT
- Systems are configurable with many controls and components including:
 - Supply air temperature reset.
 - Ventilation airflow control.
 - Outdoor air economizers
 - Ventilation air heat reclaim devices.
 - Humidistats and humidifiers.
 - Preheat and precool coils.
 - Perimeter baseboard and fan coil heaters.
- Permits scheduling of thermostats, fans, cooling and heating on an hourly, daily and monthly basis.

Plant Equipment Features

- Performs detailed hour-by-hour simulations of plant part-load performance.
- Plant types include:
 - Chiller plants.
 - District chilled water.
 - Hot water boiler plants.
 - Steam boiler plants.
 - District hot water.
 - District steam.
- Models the following chiller types:
 - Water-cooled centrifugal
 - Water-cooled rotary screw.
 - Water-cooled packaged screw
 - Water-cooled packaged reciprocating
 - Water-cooled packaged scroll.
 - Water-cooled single-effect absorption
 - Water-cooled double-effect absorption.
 - Water-cooled direct-fired absorption.
 - Water-cooled engine chiller.
 - Air-cooled packaged screw.
 - Air-cooled packaged reciprocating.
 - Air-cooled packaged scroll.
- Chiller plants can be configured with the following components and controls:
 - Three types of sequencing controls.
 - Free cooling by strainer cycle or plate-frame HX.
 - Chilled water distribution systems including primary/secondary and variable speed pumps.

Utility Rate Features

- Models five common types of electric energy charges.
- Models demand charges for both electric and fuel rates.
- Permits seasonal and time-of-day energy and demand pricing to be defined.

Energy Analysis Reports

- Summary reports compare energy use and energy cost of alternate building designs.
- Detailed reports provide annual, monthly, daily and hourly performance data.
- Extensive use of graphics allows patterns of equipment performance to be quickly understood.
- Features provided for copy-and-paste from displayed reports to other documents, and for saving reports as RTF documents.
- Feature for exporting simulation results to ASCII text disk files makes importing results into spreadsheets simple.

Miscellaneous

HAP energy analysis exceeds the minimum requirements for the Energy Cost Budget compliance path for ASHRAE Standard 90.1.