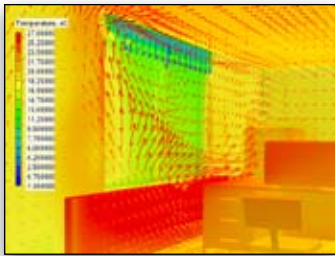
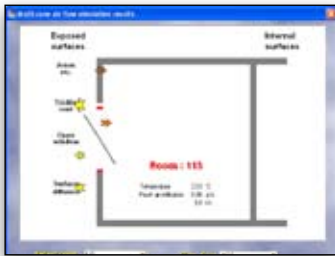


## BENTLEY® HEVACOMP SIMULATOR V8i

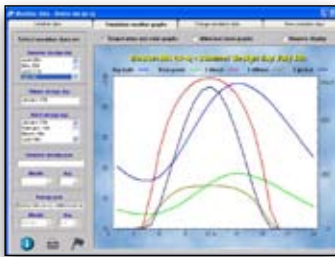
### EASY AND POWERFUL INTERFACE TO ENERGYPLUS



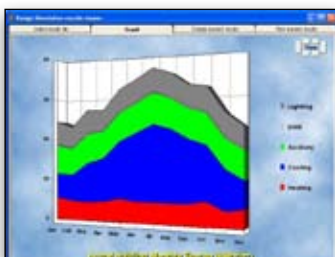
Air Flow Visualization



Multi-Zone Air Flow Simulation



Weather Data



Design Simulation Results Viewer

Bentley Hevacomp Simulator V8i provides a quick and easy way to perform building energy analysis using Dynamic Simulator with EnergyPlus.

Bentley Hevacomp Simulator V8i offers consultant and design contractors, building services design and MEP professionals a tool that is easy and quick to use for building energy analysis using Dynamic Simulator with EnergyPlus. Using the 3D modeler in the design database, projects can be fully simulated in EnergyPlus. EnergyPlus is fast emerging as the global standard for Dynamic Simulator. It is used for all building load and energy calculations, plant energy calculations and passive design simulations.

Over the past few years, engineers have become increasingly required to carry out more complex analysis, such as over-heating frequency, mixed mode ventilation and CFD analysis. To meet this demand, Hevacomp has developed a Dynamic Simulator package, using EnergyPlus as the calculation engine. An important feature of the Dynamic Simulator package is that simulation can be carried out using the same project data that engineers have already set up to use with simple load calculations. This enables simulation studies to be carried out without re-entering project data. We see this as an important feature, to lead engineers easily into simulation.

With Hevacomp software, a building is set up by tracing around the internal perimeter of each room, adjacent surfaces are automatically detected as partitions. Databases of constructional elements are used. An extensive roof and floor modeling program is available, which enables simple or complex roofs to be traced from DXF files. Walls and partitions are automatically trimmed vertically to fit the roof, rooms above and below target rooms are detected. This enables a full 3D model to be produced for little more effort than a simple 2D tracing.

Once the building has been set up, building simulation, linking to EnergyPlus, can be carried out to examine room heat losses and gains, summer overheating, peak design months, overheating frequency and building energy. The package will also produce 3D external shading graphics and internal solar penetration graphics, showing moving sunshine patches within rooms.

Summer overheating frequency can be simulated using CIBSE summer design weather data (available from CIBSE) and hours of overheating can be obtained from cumulative frequency results to check against UK Part L code requirements. Natural infiltration can be examined by defining flowpaths and opening windows, this enables quite complex natural and mixed mode ventilation systems to be examined, including controlled opening of windows.

A large amount of weather data for annual energy simulation is provided. Hevacomp provides an extensive Meteororm weather database of over 7000 locations world-wide. A detailed profiling and scheduling module is available so that you can set up any required plant, gains, occupancy and temperature schedules. Typical schedules for a large range of building are provided, compatible with UK Part L requirements.

As well as building simulation, a plant simulation module enables engineers to simply define HVAC systems such as radiators, warm air, constant volume a/c, VAV, fan coils, room a/c units, etc. Central plant items such as boilers, chillers and cooling towers can also be defined. Databases of common plant and equipment are provided. From a brief HVAC set of data, the package will automatically set up all the required HVAC components, water and air networks and central plant. Although simple to set up, complex systems can be defined, which are not limited to Compact HVAC components.

With plant simulation, plant sizing can be carried out, using summer and winter design days, plant and equipment sizing schedules are produced. Annual energy consumption can be computed, together with fuel cost and CO2 consumption.

Hevacomp has an alliance with CHAM (UK) so that results from Dynamic Simulator can automatically be used to carry out CFD analysis, enabling room air movement and temperature studies to be carried out. Hevacomp provides an extensive object library so that you can place items such as furniture and people in rooms to see the effect on air movement.

## SYSTEM REQUIREMENTS

**Processor:**  
P4 @3+GHz

**Memory:**  
2gig

**Graphics:**  
AGP/PCIe with 256m

**Operating System:**  
Win 2000 or XP pro

**USB:**  
Yes

**CD-ROM:**  
Yes

## ABOUT BENTLEY

Bentley Systems, Incorporated is the global leader dedicated to providing comprehensive software solutions for sustaining infrastructure. Architects, engineers, constructors, and owner-operators are indispensable in improving our world and our quality of life; the company's mission is to improve the performance of their projects and of the assets they design, build, and operate. Bentley sustains the infrastructure professions by helping to leverage information technology, learning, best practices, and global collaboration – and by promoting careers devoted to this crucial work.

For more information,  
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## BENTLEY HEVACOMP SIMULATOR V8i AT-A-GLANCE

### Dynamic Simulation with EnergyPlus

- Easy interface to powerful engine as well as an emerging industry standard
- Detailed analysis of complex buildings and systems
- Confidence in engine with significance support and backup

### Extensive Weather Watabases

- Over 2900 locations worldwide
- Confidence that project location data is available

### Localized Weather Databases

- Local Databases available
- Where required locally sourced databases are included

### Overheating Calculations

- Asses low energy designs and comfort conditions can be assessed
- More accuracy from analysis of low energy designs

### Overheating Frequency

- Annual summer temperature calculations can identify overheating risk
- Minimize overheat days per year

### Predefined HVAC Systems

- Predefined standard HVAC systems are included
- For standard designs significant time is saved using predefined systems

### User Defined HVAC Systems

- User defined HVAC systems from a simple interface with a graphical mimic
- Full flexibility to defined actual systems for shaded designs

### Plant and Building Simulation is Fully Coupled

- Room demand is affected by HVAC equipment within the space
- Fully coupled simulation allows plant energy calculations to be executed in coordination, rather than two separate calculations
- More accurate plant energy analysis

### Built-in Part Load Curves

- Part Load efficiencies curves for all plant items
- More accurate results as plant efficiencies will vary throughout year

### Renewable and Low Energy Systems

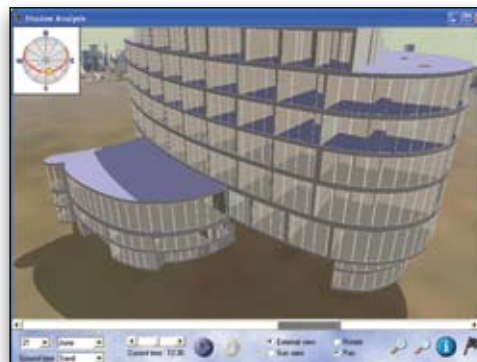
- Define Renewable systems such as wind and solar
- Low carbon buildings can be designed

### Biomass Systems

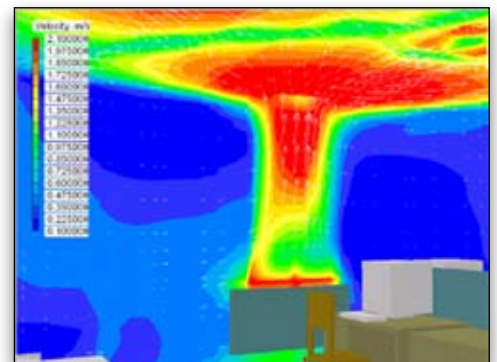
- Biomass Boilers can be setup
- Design low energy designs

### Passive Design

- Full control over windows, natural and mechanical ventilation strategies
- Detailed analysis of low energy and passive designs



Shadow Analysis



Airflow Analysis Using CFD