

# IDA ICE 4.0 Preview

## IDA Indoor Climate and Energy 4.0

**Our innovative tool for dynamic simulation of indoor climate and energy gets even better.**

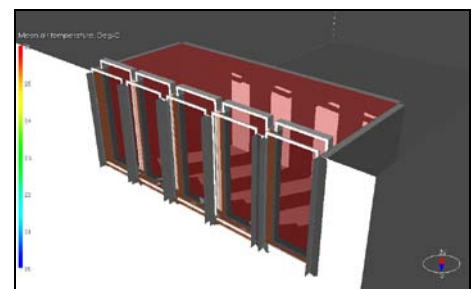
IDA Indoor Climate and Energy (IDA ICE) is a dynamic multi-zone simulation application for accurate study of thermal indoor climate of individual zones as well as the energy consumption of the entire building. The user interface has been designed to make it easy to build and simulate simple cases, but also to offer the advanced user the full flexibility.

### What is new in IDA ICE 4.0?

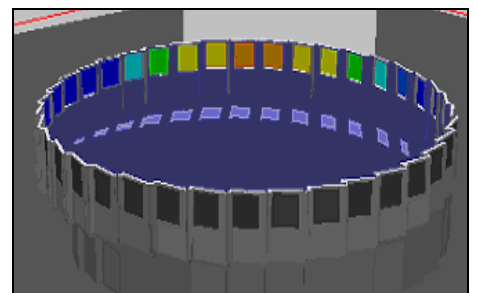
The main focus of this release has been to simplify for the less experienced user and to speed up the process of calculating and reporting cooling, heating and energy for large buildings.

At the core of the new release is a detailed real-time 3D environment. Now it is possible to illustrate input parameters and to get animated results including solar and shading graphics. The 3D environment also adds an overview during all steps of a project and provides impressive presentation graphics.

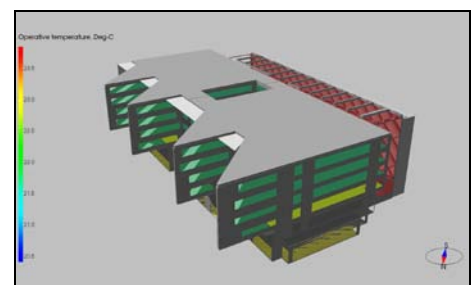
New overview tables allow the user to get a complete overview of individual parameters of complex models. You can view and edit all important input data in tables and see, for instance, useful totals for floor area, u-values, external walls areas, etc.



Sun patches



Surface heat fluxes and sun patches



Operative temperatures Image courtesy of Bengt Dahlgren AB

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**Quality.** An advantage of using a modern general-purpose variable time step solver rather than the hand-coded component subroutines of all other available whole-building simulators is that it removes handcrafting of solution algorithms. This not only saves development time, it also ensures quality. By choice of tolerance parameters, you can effectively eliminate numerical errors and see how the equations truly behave – even with a time resolution of seconds if needed.

**Transparency.** IDA ICE 4.0 is not a black box. We do not ask you to trust our secret model. Every underlying equation can be browsed. Every variable can be logged. For a single zone, this means that about a thousand temperatures; heat fluxes, CO<sub>2</sub>-levels, control signals and other variables can be inspected by the critical user.



**Flexibility.** IDA ICE 4.0 handles a wide range of simulation problems by using equation based modelling (see e.g. [www.modelica.org](http://www.modelica.org)), a method with the ability to deliver fast, robust and scaleable simulation models for any industrial domain. The advanced user can build models from a library of ready Modelica and NMF objects, and write new ones if something is missing.

**Support.** IDA ICE users are not asked to post questions to a forum where they might be answered. It is a commercial program with commercial support. There are support and development teams that will immediately attend to your enquiry. We do not need to wait for the next round of state funding to help you in your project.

**Interoperability.** IDA ICE 4.0 can import all common 2D and 3D CAD files. It supports IFC BIM models, generated by, e.g. ArchiCAD, AutoCAD ADT, MagiCAD, Revit and many others.

## Features

	Standard edition	Expert edition	BIM import add-in
Multi-zone energy and carbon emission analysis	√	√	
Dynamic cooling and heating load calculation	√	√	
System and plant sizing	√	√	
Thermal comfort analysis using view factors (PPD, Operative temperature)	√	√	
Natural light computation	√	√	
Solar penetration and shading animation	√	√	
Natural and mixed mode ventilation (bulk air flow model)	√	√	
Radiators, chilled beams, floor heating	√	√	
3D visualization of input and results	√	√	
3D realtime animation of results	√	√	
Variable timestep solver with sub second resolution	√	√	
Fully transparent model – log any variable	√	√	
Multiple natural languages	√	√	
Import BIM model geometry and data from IFC 2X3		√	√
Hydronic floor cooling; ceiling radiant heating/cooling		√	
Build free schematics of HVAC, control and envelope objects		√	
Openable windows and doors		√	
Multi-pane window model according to ISO 15099		√	
Write your own models using the Neutral Model Format		√	
Manage multiple case versions with automatic batch updates		√	
Scripting, model diff, search and other productivity features		√	

IDA ICE 4.0 will be released during the summer 2009.

Existing IDA ICE 3.0 customers can join the beta test group today. Many large projects have already been done using IDA ICE 4.0.

For more information please join our newsletter at [www.equa.se](http://www.equa.se) or contact us at [info@equa.se](mailto:info@equa.se).