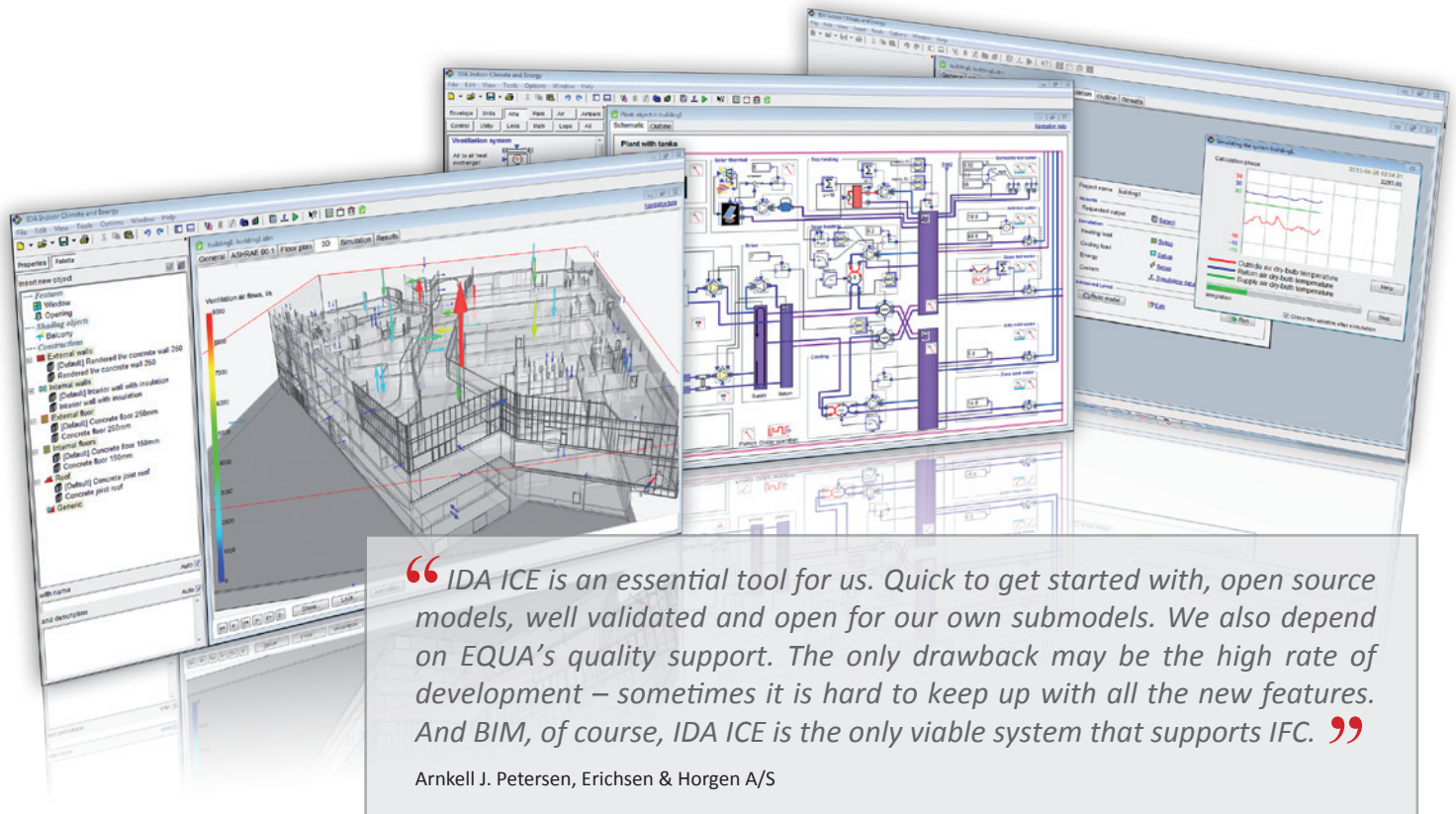# IDA Indoor Climate and Energy

A new generation building performance simulation software

> *IDA ICE is an essential tool for us. Quick to get started with, open source models, well validated and open for our own submodels. We also depend on EQUA's quality support. The only drawback may be the high rate of development – sometimes it is hard to keep up with all the new features. And BIM, of course, IDA ICE is the only viable system that supports IFC.*
>
> Arnkell J. Petersen, Erichsen & Horgen A/S

Are you an experienced building simulation professional? Looking for accountability, accuracy, flexibility and overall efficiency in your modelling work? Then IDA Indoor Climate and Energy (IDA ICE) may be your software solution.

Combined building, systems and controls modeling; adaptive time steps for fast and high resolution simulation; BIM import via IFC; interactive 3D with visualization for input as well as results – these and other features will enable you to work both fast and accurately. IDA ICE has a modular structure, with access to the model source code and the possibility to develop your own extensions. Governed by strict QA, the program is under vigorous development with an impressive release record.

Complex shading described in IDA ICE

Editable source code

Connected components in the Advanced level

EQUA.
SIMULATION TECHNOLOGY GROUP
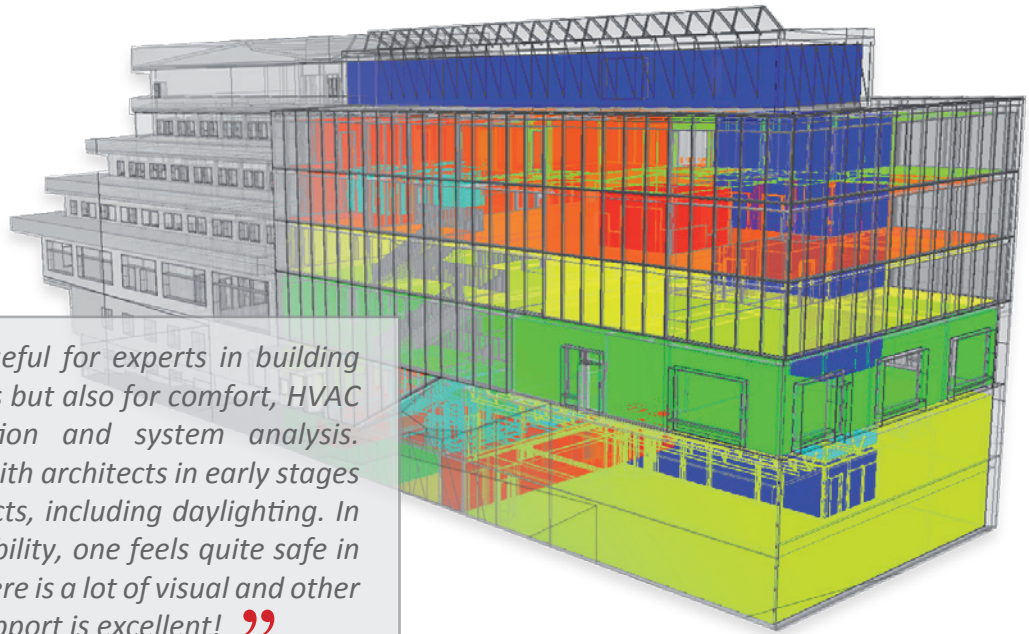
> **❝** *IDA ICE is not only useful for experts in building physics and energy studies but also for comfort, HVAC sizing, control optimization and system analysis. I personally work mostly with architects in early stages to study all relevant aspects, including daylighting. In spite of its unrivalled flexibility, one feels quite safe in the input data process. There is a lot of visual and other feedback... Oh, and the support is excellent!* **❞**

Max Tillberg, Bengt Dahlgren AB

Simulation examples

■ **Natural and hybrid ventilation**
Driven by fans, wind and buoyancy, air flows between zones, through envelope and systems are modelled. Fully non-linear, pressure driven flows are also supported for piping networks.

■ **Demand controlled ventilation**
VAV boxes, fans, dampers and openings may be controlled with standard or user-defined controls, based on CO_2, temperature, pressure or any other quantity.

■ **Slab heating and cooling/TABS**
A full range of water based room units, such as embedded coils, chilled beams, panels and radiators may easily be managed and controlled.

■ **User-defined systems and plants**
A full library of air and water based components is available for building complex systems. Ready-made samples and clever wizards simplify this process, making rapid experiments with different system types economical in any project. Examples of available components are coils, humidifiers, mixing boxes, vapor compression machines, boilers, solar collectors, cooling towers, stratified tanks, bore holes, PV and CHP.
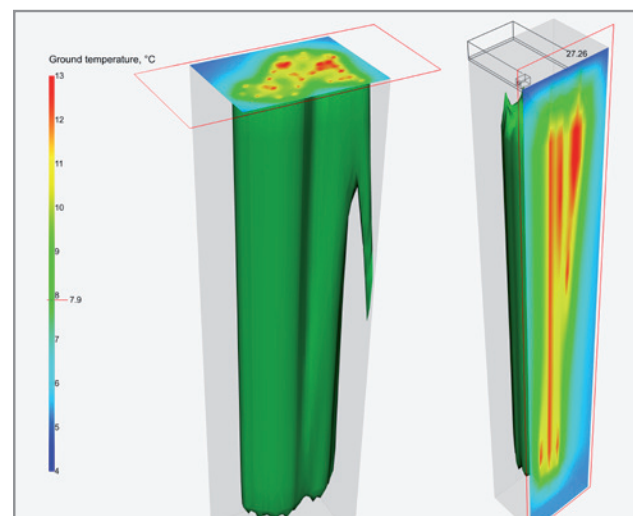
■ **Ventilated façades and windows**
A pane-by-pane window and shading model based on ISO 15099 is available. Blind control, window opening and cavity ventilation may be controlled by any combination of sensors.

■ **Daylight calculations**
Advanced daylight calculations, interfacing Radiance™. Easy calculation setup, execution and results visualization, all inside IDA ICE. Calculation of daylight factor and illuminance on selected zones or user defined measuring planes placed inside or outside of the building. Selection of sky models including CIE standard sky models and Perez climate based sky model.

■ **LEED/BREEAM**
Generation and simulation of ASHRAE 90.1 models is fully automated. Dozens of projects have been approved, also for very large buildings with thousands of zones.

Cross sections of leaning bore holes

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