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Research for increased sustainability under optimized building conditions

Desigo CC in the “living laboratory” at Fraunhofer CSE in Boston

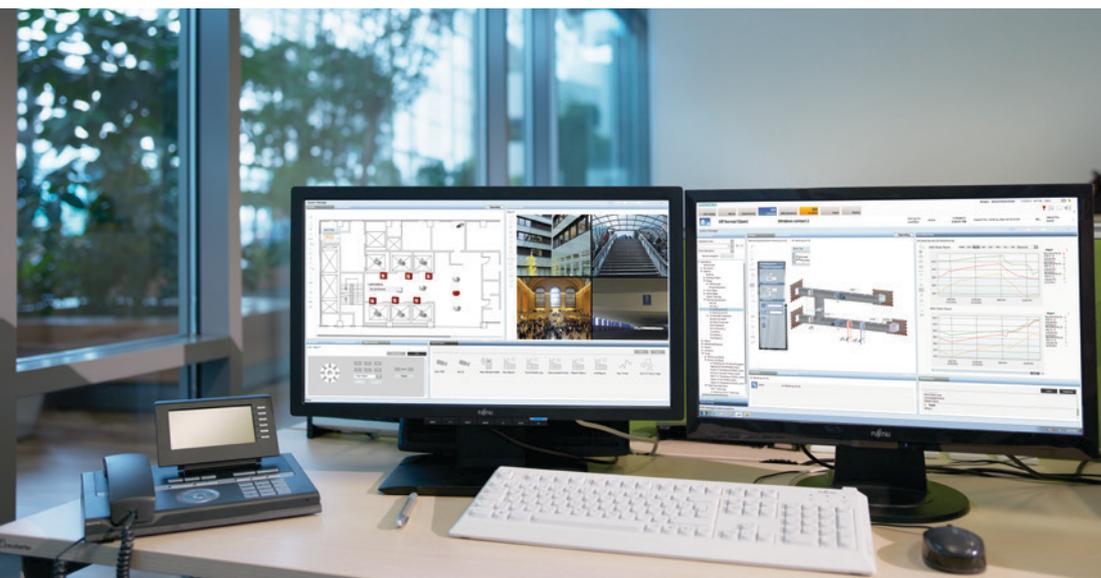
Fraunhofer CSE in Boston, Massachusetts uses Desigo CC, the world's first building management platform to integrate all controllable disciplines in a building.

The project

Established in 2008, the Fraunhofer Center for Sustainable Energy Systems CSE in Boston, Massachusetts is a laboratory that provides research services for industry and government clients with a focus on building technologies, solar energy, photovoltaics and distributed electrical energy systems. Fraunhofer CSE is part of Fraunhofer USA, a subsidiary of Germany's Fraunhofer Gesellschaft, a world leader in applied research and development. In 2013, Fraunhofer CSE moved into its new headquarters in the heart of Boston's Innovation District abutting the historic Boston Harbor. The six-story building is renowned as a “living laboratory” and for its “Building Technology Showcase”.

The challenge

The completely renovated 100-year old brick building is a “living laboratory” focused on building technology research. For this reason, Fraunhofer CSE had stringent requirements when it came to building management. A number of different systems from different manufacturers are in use. Many systems used for internal engineering testing are unique. Therefore, Siemens installed Desigo CC™, which offers its users outstanding functionality and, using open protocols, greatly facilitates the integration of a wide variety of disciplines and systems.



Everything in view, everything under control

The decision-makers at Fraunhofer CSE needed a management system that would support the integration of the many systems in use in the building.

The solution

Heating, ventilation and air conditioning (HVAC), many the disciplines in use at Fraunhofer CSE in Boston are integrated in the Desigo CC building management platform and can be controlled and monitored from there. The graphical interface allows users to access any installed device and see how it's running. In addition, Desigo CC collects a variety of building data, including temperature, humidity, and CO₂ concentration, which other systems can then use to further optimize building automation.

Desigo CC can be programmed to automatically turn heating and cooling on and off, based on the time of day and year and depending on the business or working hours. During the week, Desigo CC can do this an hour before the start of the workday to ensure a comfortable temperature has been reached when the first employees arrive. Throughout the day, heating, ventilation, lighting and shading can be adjusted based on sunlight, daylight, etc.

Benefits

Fraunhofer CSE uses the collected data to assess the properties and efficiency of materials and technologies tested in the "living laboratory."

"Desigo CC is based on open protocols, which greatly simplifies the integration of different disciplines and systems. This allowed us to include the entire building automation system of the facility, including the testing systems. Moreover, Desigo CC helps the researchers at Fraunhofer CSE collect and evaluate research data," adds Tom Rule, Product Manager for Desigo CC at the Building Technologies Division of Siemens. In addition to building automation, Desigo CC can also integrate fire safety and security systems, which gives Fraunhofer CSE options to expand as needed.

Highlights

- Central control and monitoring of multiple disciplines – by integrating HVAC, lighting and shading
- Efficient building and energy management – thanks to simplified and intuitive data overview, trend data and reporting
- Ease of use – thanks to a user-friendly interface and navigation concept
- Future-proof design – flexible expansion options through optional integration of fire safety and security systems

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