

Philips Lighting HQ

Tridium delights with NIAGARA AX

Philips Lighting is utilising the power and capabilities of Tridium's NIAGARA AX Framework at its recently renovated headquarters in Eindhoven, Holland.

Using the framework, Tridium and local systems integrator Celsius Benelux B.V. have developed an easily accessible and effective controls solution, providing seamless integration of a complex range of different building services into one, interoperable web-based environment. The building's facilities management team now enjoys instant, transparent and responsive access and control over any sub-system via an online web portal.



Employing 44,000 people across the world, Philips Lighting is the established global number one in lighting, producing high quality lamps, luminaries, lighting electronics and other products. The 14-storey building in Eindhoven is home to 1000 staff and is the administrative centre for the business. Until recently, services within the building were independently controlled which was creating operational performance and energy efficiency issues. Celsius Benelux B.V. was called in to design and install an effective, integrated, open and easily accessible control system for the 700 plus control points, covering the lighting, security and HVAC services in the building. Tridium's NIAGARA AX Framework has provided the perfect answer.

“ Tridium's NIAGARA AX has provided Philips Lighting with a reliable, easy to access and integrated site-wide building management solution. ”

At the core of the building's HVAC installation is an innovative energy storage system. Four groundwater wells control the heating and cooling of the HVAC units, serving primary plant for the building's Variable Air Volume air-conditioning system which is controlled by Sysmik i/o devices using the LonWorks protocol. The building's lighting system features Philips Helio controllers whilst the building's security system uses Tyco controllers, both operating on independent LON networks.

The framework provided by Tridium has allowed Celsius Benelux B.V. to develop its own modules, creating specific control applications and solutions for the Philips building whilst integrating the existing control devices for the different services in the building.

The Tridium Solution

The project

- 14-storey headquarters building for Philips Lighting, the world leader in lighting
- Home to 1000 employees and the administrative centre for the business
- Subject to an extensive renovation to bring control system into the 21st century

The requirement

- Building services independently controlled, creating operational performance and energy efficiency issues
- Complex and confusing array of multi-vendor control protocols in use
- Demand for a reliable, easy to access and integrated site-wide building management solution for lighting, security and HVAC systems
- 700 plus control points, covering the lighting, security and HVAC services in the building
- A fully integrated BMS system for Philips Lighting, Eindhoven

Tridium provides

- NIAGARA AX software Framework and development environment is embedded within six Tridium JACE units, providing a fully integrated web-based supervisory system
- Control system designed, installed and implemented by systems integrator, Celsius Benelux B.V.

The results

- NIAGARA AX software Framework and development environment brings together diverse devices, regardless of manufacturer or communication protocol, enabling the implementation of seamless, internet-connected, web-based control systems, without the need for any special gateways or expensive BMS supervisory software
- Allows systems integrators to unify the entire development environment used to build control applications. Celsius Benelux B.V. has developed its own modules, creating specific control applications and solutions whilst integrating all existing control devices

Conclusion

- Thanks to NIAGARA AX and the control system developed by Celsius, the building's facilities management team now have instant, transparent and responsive access and control over any sub-system via an online portal

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FRAMEWORK™

Continued overleaf

“Instant, transparent and responsive access and control over any sub-system via an online portal.”

Case Study

A great example of this functionality can be seen in the HVAC system in the offices is in the "unoccupied" state when the building is locked. This is detected from a hardwired connection from the TYCO security system. If the building is entered, this interface passes the information into the control system to set all offices on "standby" and general lighting at elevators, stairways, restaurants, are all switched on. When access to a floor is required by a Philips employee, authorisation must be obtained via the security system. The TYCO system signals the control system to switch on lights in the general areas. The lights will remain on until the last "active" movement sensor on the floor has been inactive for more than 30 minutes. If someone enters a room, the lights are switched on by a movement sensor. This sensor is also used by the HVAC nodes on the LONnetwork to set the HVAC units to "occupied". If cooling or heating is required, this information is signaled to the primary system.

The NIAGARA AX Framework™ is embedded with six Tridium JACE control units installed throughout the building, serving control devices on each floor. The control system was engineered via a web-browser, supporting multiple access and parallel binding locations, and can be adapted or extended to accommodate new controllers quickly and easily in the same way in the future. The software running on the JACEs represents control devices in software as "objects" which can be linked to create sophisticated control and management functions, and allows interconnection of

devices which communicate with different native protocols. It features a special graphics presentation framework and graphic development tool which supports both rich client displays (for use with browsers that support Java plug-ins), and pure thin client displays that support only HTML and JavaScript. It also allows the creation of displays for a wide range of devices including PCs, PDAs and smart phones. Innovative presentation technology automatically generates navigation trees that eliminate substantial application development effort, and includes an extensive library of graphic elements to aid the user.

About Celsius Benelux B.V.

Celsius Benelux B.V. has been a Tridium Partner since 2001. During this time it has successfully installed and engineered a considerable number of systems incorporating Tridium's NIAGARA Framework software. These systems have ranged in size and complexity some with complex, multi-protocol integrations. Celsius has developed a considerable expertise in engineering these systems and has one of the largest teams of NIAGARA Certified Engineers of Tridium's European Partners. It is one of over 500 Certified Tridium Partners worldwide deploying the NIAGARA Framework, of which there are now over 50,000 instances deployed, and specialises in the integration of LON based systems and technology.

