

ABB Cityport Building

Web-based multi-bus integration adds value for ABB



Tridium has completed a significant project at Cityport, the corporate HQ of industrial giant ABB in Zurich, Switzerland.

The NIAGARA Framework™ has quickly and successfully connected a complex range of building services equipment on independent BACNET, EIB and LonWorks® control bus networks into one integrated, web-based control environment. This has enabled ABB to develop Cityport as a showcase "smart" development for its own Performance Buildings concept, delivering major building control interoperability advantages; fast and easy remote, web-enabled accessibility with the capability for simple system extension in the future.

“The NIAGARA architecture fits perfectly with the web-based services which are the communications backbone of ABB’s own Performance Building approach.”

Constructed to consolidate seven different ABB office locations into one, Cityport is a five storey building, covering 11,000m² and including 44 state of the art, intelligent conference rooms. Thanks to Tridium’s NIAGARA Framework™ and ABB’s own IndustrialIT software, all functional areas of the building are connected to each other through a web-based architecture on a standardised IT platform. This highly integrated Performance Building redefines the scope of commercial building control beyond heating, ventilation, air conditioning, lighting, telephones and elevators to include processes and applications for all support functions from catering to visitor management.

ABB recognised that building services sub-system integration alone presented a key challenge to this open vision. The BACNET protocol is used to communicate with the control station of the basic part of the building while lighting, blinds, curtains and window control for each room are controlled through a network using the EIB bus. Meanwhile, the building’s heating and cooling is achieved by VAV terminal units regulated via a LonWorks® control network. However, by converting all these control devices into software "objects" and using Tridium

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The Tridium Solution

The project

- The Zurich HQ for global industrial giant, ABB.
- A five storey building, including 44 state of the art, intelligent conference rooms.
- BACNET, EIB and LonWorks® protocols are used to communicate between different sub-system controllers within the building.

The requirement

- Device integration of these independent control bus networks into one, web-based control environment.

Tridium provides

- Market-leading NIAGARA Framework™ as the system architecture.
- NIAGARA Framework™ embedded within eight JACE 5 NP series controllers.
- Web-browser control system engineering to support multiple access and parallel binding locations.

The results

- Tridium’s NIAGARA Framework™ talks to each controller using its native protocol and respective network in one common, distributed and genuinely open environment.
- Graphical information, served up as HTML pages, allows all supervisory actions; such as monitoring, adjustment, data archiving and equipment maintenance on these different sub-systems, to take place from any PC on the ABB intranet.
- Web-based Tridium architecture integrates with other web-based applications, processes and sub-systems in a single, seamless network.

Conclusion

- This showcase "smart" development for both ABB’s own Performance Buildings concept and Tridium’s NIAGARA Framework™ brings major building control interoperability advantages; fast and easy remote, web-enabled accessibility with the capability for simple system extension in the future.

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Case Study

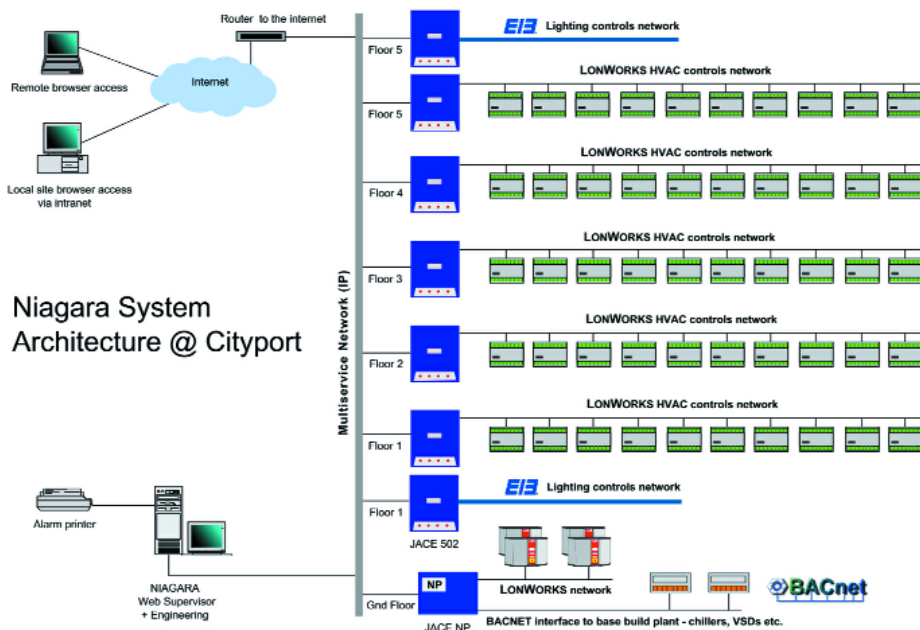
“ Full equipment integration and web-enabled access to controllers using BACNET, EIB and LONWORKS® protocols, without the need for special gateways. ”

developed drivers, the NIAGARA Framework™ talks to each controller using its native protocol and respective network creating a common, distributed and genuinely open environment, irrespective of controller type and manufacturer, and without the need for special gateways.

The Tridium NIAGARA Framework™ also allows control system access via any standard web browser. Graphical information is served up as HTML pages to ensure that all supervisory actions; such as monitoring, adjustment, data archiving and equipment maintenance on these different sub-systems, can take place from any PC on the ABB intranet, so avoiding the need for expensive BMS supervisory software. More than this, the distributed web-based architecture of the Tridium controlled and networked sub-systems, contributes to Cityport's communications power, by allowing integration with other web-based applications and sub-systems in the building. At Cityport these other web services include personal electronic agenda, room reservation system, visitor announcement, access control, telephony, catering order fulfilment, audio visual equipment control and ERP invoicing.

An ABB employee can use Lotus Notes to book one of Cityport's conference rooms, invite participants, send them agendas, book out of town visitor's accommodation, arrange their access to the building and specify occupancy comfort conditions for this room, all within minutes, instead of the processes taking hours or days. In a Performance Building, like Cityport, the various sub-systems all co-operate seamlessly to take care of these and other tasks. This level of integration can also save energy in many ways with, for example, window blinds being automatically adjusted to regulate heating or cooling in a room rather than through mechanical plant activation.

The NIAGARA Framework™ is embedded within eight Tridium JACE control units installed throughout the building, with one unit allocated to serve 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.



Niagara System Architecture @ Cityport

About Tridium

Tridium is a US based company with their European headquarters in Buckinghamshire.

Tridium has established key strategic alliances with leading corporations in the energy services, building automation and data management industries.

Tridium markets its products to a wide range of controls manufacturers, HVAC equipment manufacturers, and a network of Tridium Systems Integrators.

Additional information about Tridium is available at www.tridium.com

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