

QUALITY ASSURANCE

Procedures and tests for Building Product Confidence



BACNET APPOINTMENTS

BACnet commitments elevated to new levels

www.reliablecontrols.com

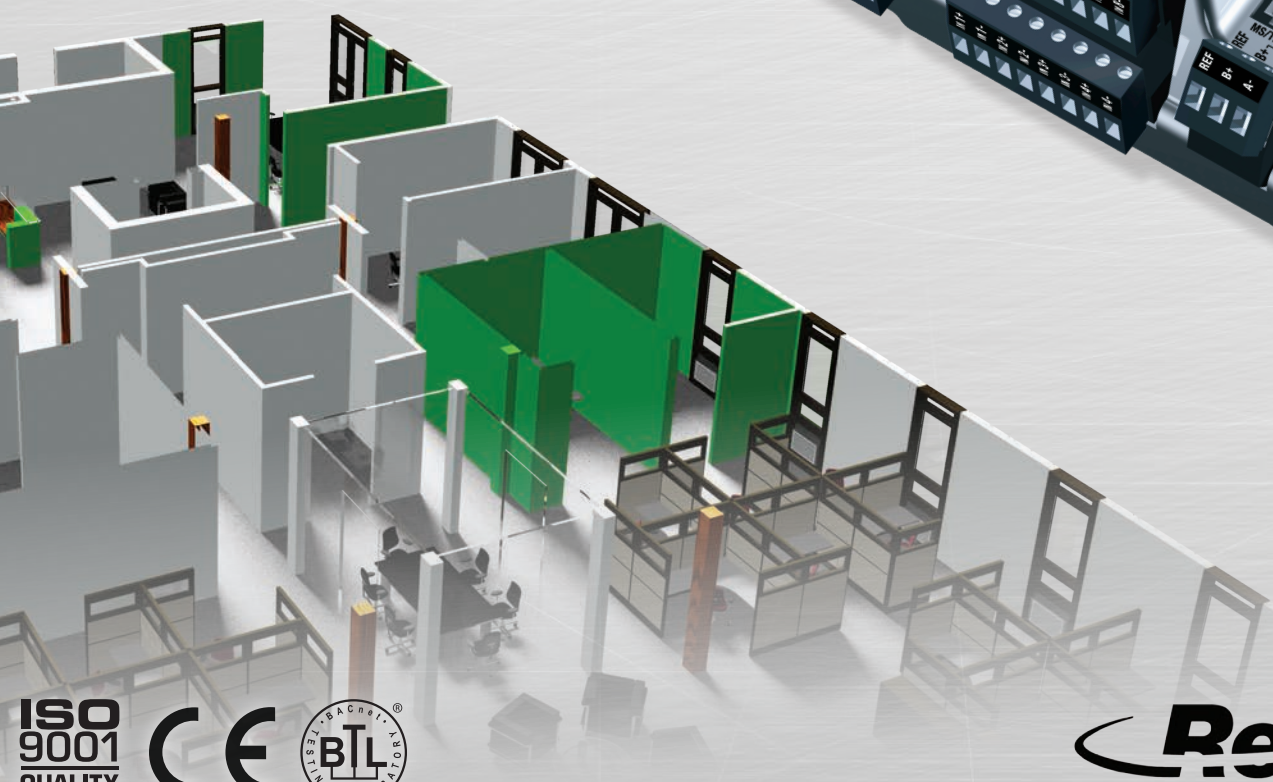
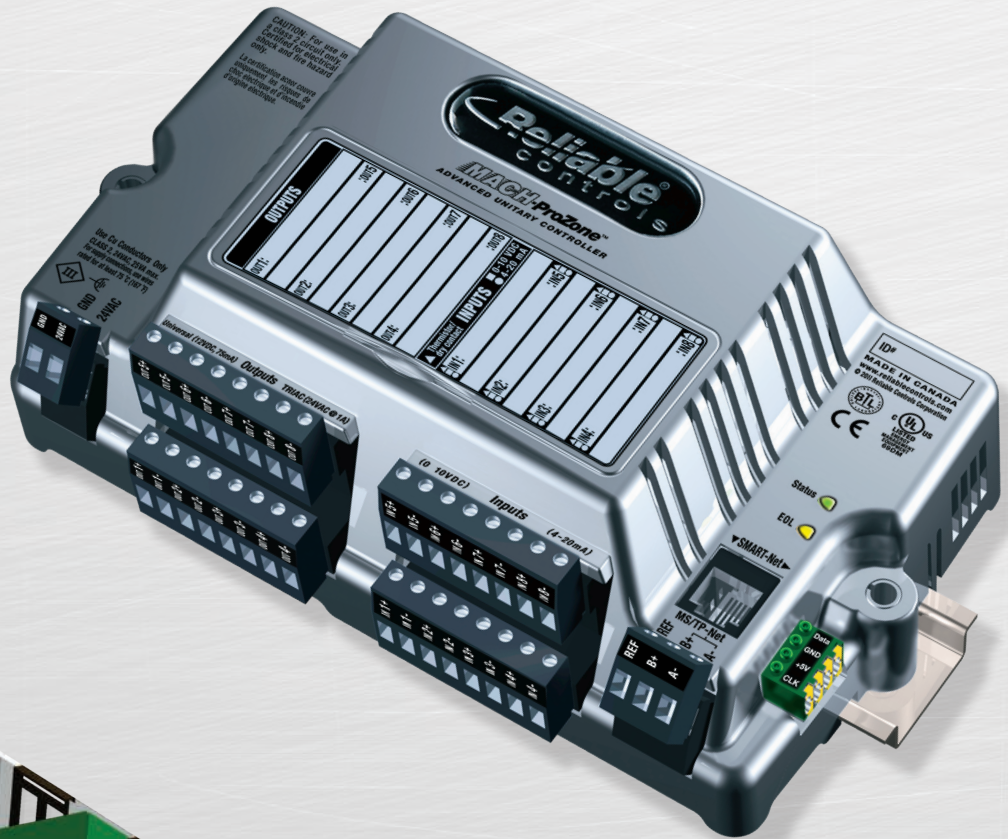
RUNtime

The Official Quarterly Newsletter of Reliable Controls Corporation

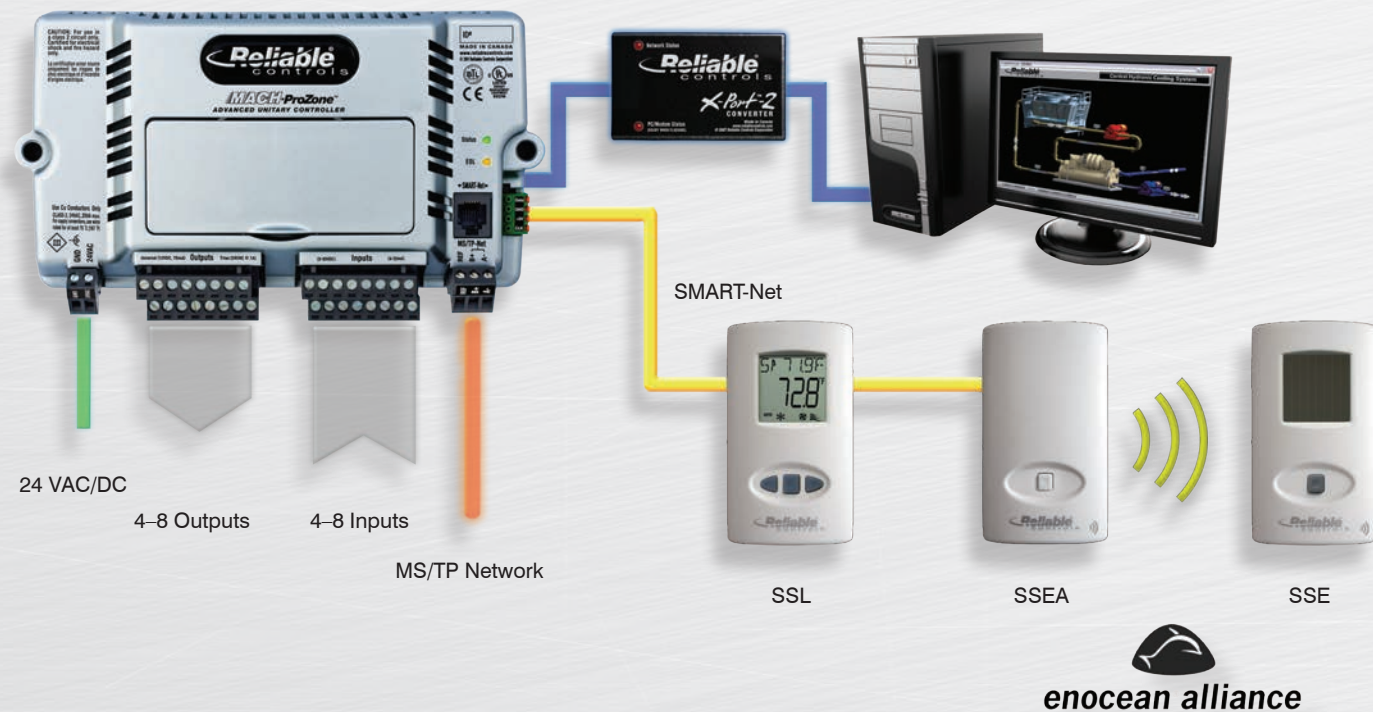
Q2 - 2012

MACH-ProZone


Maintaining the Green Zone




MACH-ProZone: Maintaining the Green Zone



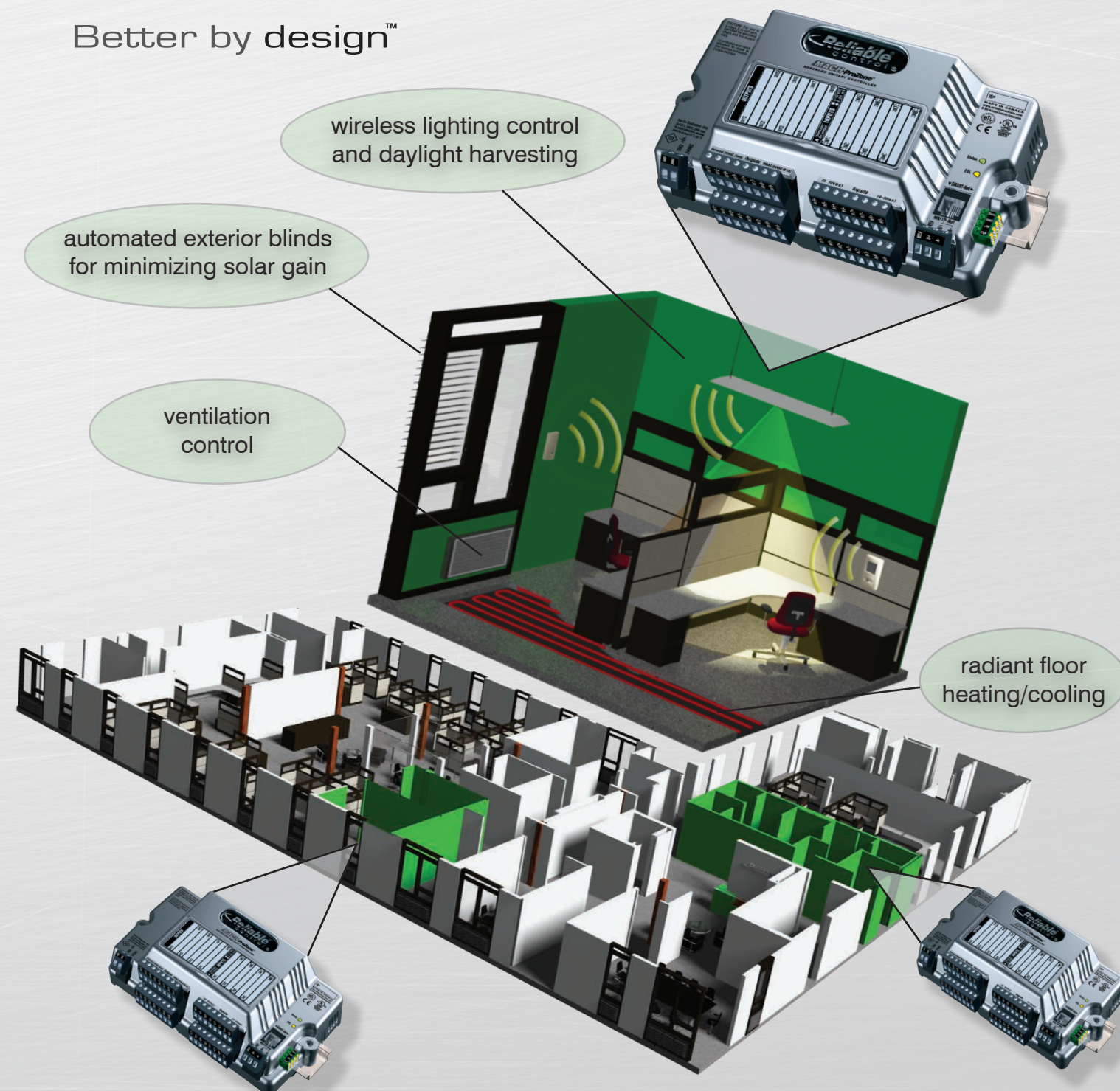
The MACH-ProZone™ controller, the latest addition to the MACH-Pro series of controllers, was released in mid-February and opened a new chapter for Reliable Controls®.

 The MACH-ProZone™ is a fully programmable BACnet Building Controller (B-BC) with highly scalable I/O in a very small footprint. The MACH-ProZone™ is ideal for a wide range of applications that include small to mid-sized roof top and heatpump applications, and small mechanical room applications. The controller features up to eight universal inputs and up to eight universal outputs with jumper selectable TRIAC configuration. The MACH-ProZone™ ships standard with removable connectors and support for up to eight SMART-Sensors (SSLs) or four SMART-Sensor™ EnOcean Accesspoints (SSEAs).

 With BACnet® and EnOcean protocol support and a dynamic memory model, the MACH-ProZone™ provides tremendous flexibility for green building designers to implement the integrative strategies needed to maximize Energy and Atmosphere (EA) credits and Indoor Environmental Quality (IEQ) credits within the LEED rating system.

The MACH-ProZone™ is great for controlling unitary mechanical systems, radiant floor heating/cooling, and lighting in office applications. When adding the SMART-Sensor™ EnOcean Accesspoint, room temperature, occupancy, and lighting control can be integrated using wireless and batteryless EnOcean technology, thereby reducing the copper wiring required for installation and eliminating the maintenance and disposal issues associated with batteries.

Better by design™



BACNET APPOINTMENTS

Reliable Controls® has a long track record of commitment and achievement with BACnet®. From its announcement to commit to the protocol in 1996, to its regular presence at the Interoperability Plugfests, Reliable Controls® has been a steadfast investor in the ASHRAE open protocol.

Recently, Reliable Controls® has embarked on a new level of commitment by allocating key personnel to the administration of the BACnet protocol.

Reliable Controls® President and Founder, Roland Laird, has accepted a nomination to the Board of Directors of BACnet International for a three year term. BACnet International (BI) is the organization committed to the promotion of the BACnet Protocol and protection of the brand. The BACnet Testing Labs is part of BI which ensures compliance to the standard. As one of seven directors, Roland will be responsible for guiding the organization's technical and marketing activities, policies, and finances.



At the end of the ASHRAE 2012 summer meeting, Reliable Controls® Firmware Manager, Michael Osborne, will assume the position of Secretary of the Standing Standard Project Committee (SSPC) 135 (BACnet). Michael was appointed to the secretary position by the Chair of the Committee and is expected to perform his BACnet duties for four years, after which, Michael will be appointed to the position of Vice Chair of the Committee for an additional four years. After serving as Vice-Chair, Michael will assume the Chairman position for an additional four years, for a total of a 12-year commitment.



Congratulations to Roland and Michael on their new BACnet appointments.



more freedom

Energy Harvesting

The Reliable Controls® SPACE-Sensor™ EnOcean (SSE) delivers a wireless temperature sensor solution made easy with the energy harvesting technology of EnOcean.



SPACE-Sensor™
EnOcean
(SSE)

SMART-Sensor™
EnOcean Accesspoint
(SSEA)



Better by design





New Singapore Sales Office

Reliable Controls Corporation is very pleased to announce the opening of a new sales office in Singapore, and the arrival of Mr. Jimmy Wong as the corporation's new Regional Sales Manager for Southeast Asia.

Jimmy started his career at AT&T Bell Labs in Homdel, New Jersey working as a telecommunications R&D engineer throughout the eighties. He entered the controls industry in the late eighties, developing an in-house building automation system for Singapore Technologies as their R&D and project manager, then was hired on as Honeywell's Regional Sales Manager for Asia Pacific during the late nineties, and finally accepted a position as CEO of Infotel Technologies, a leading service provider/dealer of Advantech building automation systems in Singapore and Asia Pacific. Jimmy earned his BaSc in Electrical/Computer Engineering at State University New York (Stony Brook), and a Masters in Electrical/Computer Engineering at Cornell University.

As Regional Sales Manager for Southeast Asia, Jimmy will be responsible for growing and supporting the corporation's Authorized Dealer network from Korea to India. The arrival of the Singapore sales office is a welcomed addition to the corporation's existing offices in China and Australia.

New Dealers

Alaska Engineering Solutions

9th Street, G Block
Anna Nagar
Chennai, Tamil Nadu
600 102
India

Industrial Control Solutions

186, 1st District, Villas Area 2
5th Settlement, New Cairo, Cairo
11853
Egypt

Essential Building Technologies - Oregon

PO Box 8194
Eugene, OR
97408
United States

Innovative Mechanical

4300 N Wilburn Avenue
Bethany, OK
73008
United States

Alliance Systems

A-13 Neo Blase CHS, Off Caesar Rd
Amboli, Andheri (West)
Mumbai, 400058
India

TRADE SHOWS

Reliable Controls® will have a strong presence at the following trade shows.



CHES BC

Penticton Trade and Convention Centre, Penticton, BC, Canada
June 03-05, 2012

Booth #TBA

(<http://www.ches.org/en/chapters/british-columbia.html>)



EMFA BC 2012

EDUCATIONAL FACILITY MANAGERS ASSOCIATION

Penticton Trade and Convention Centre, Penticton, BC, Canada
June 05-08, 2012

Booth #TBA

(www.efmabc.com)



OASBO CONFERENCE

ONTARIO ASSOCIATION OF SCHOOL BUSINESS OFFICIALS

Ottawa Convention Centre, Ottawa, ON, Canada

July 11-12, 2012

Booth #TBA

(www.oasbo.org/default/index/)



CHES NATIONAL CONFERENCE

Palais de Congres de Montreal, Intercontinental Hotel

Montreal, QC, Canada

September 23-25, 2012

Booth #TBA

(www.ches.org/en/conferences-events/2012-conference.html)



NFMT VEGAS

BUILDING OPERATING MANAGEMENT NFMT

Mirage Event Center, Las Vegas, NV, USA

October 02-03, 2012

Booth #424

(www.nfmt.com/vegas)



TBIX Expo 2012

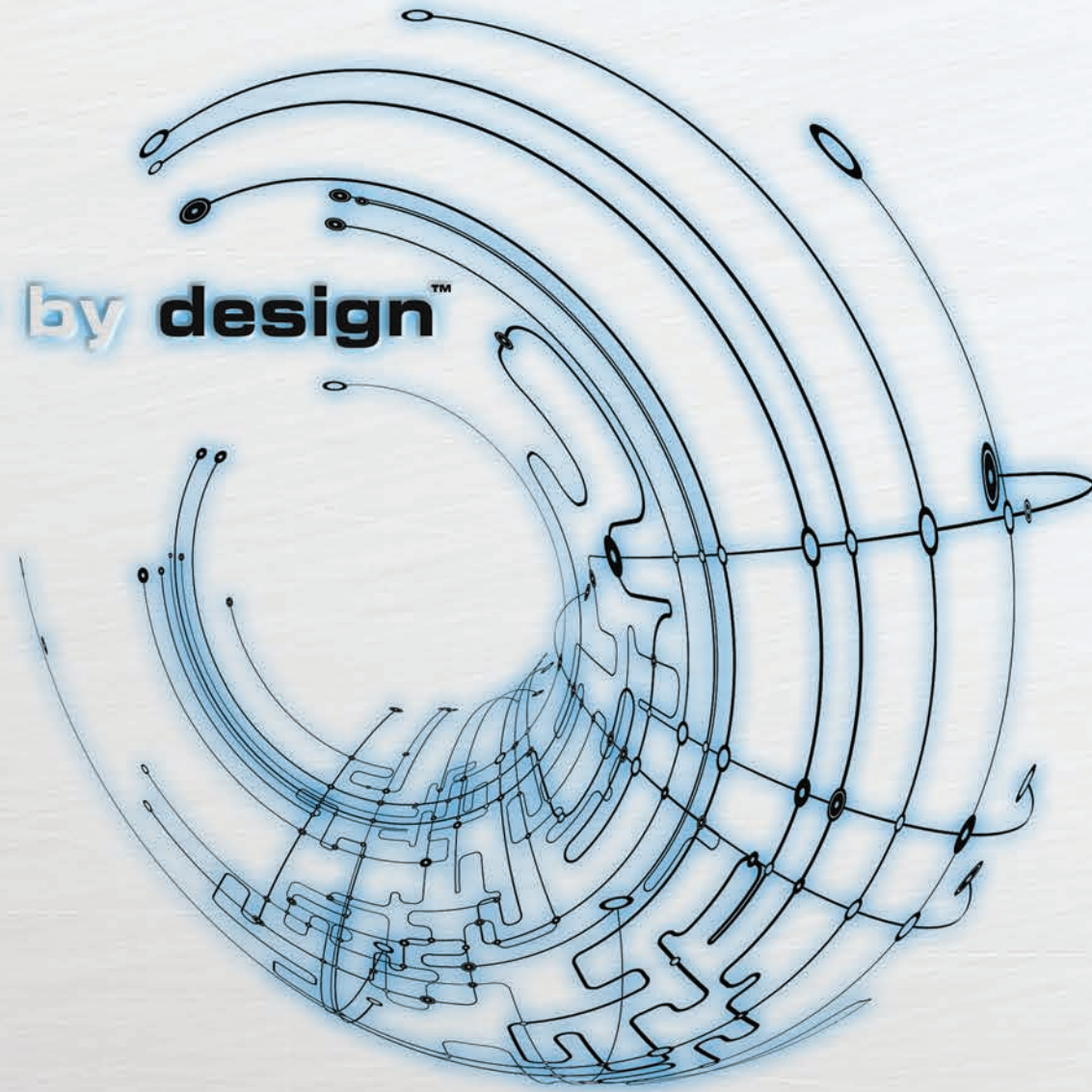
Place Bonaventure, Montreal, QC, Canada

October 24-25, 2012

Booth #108

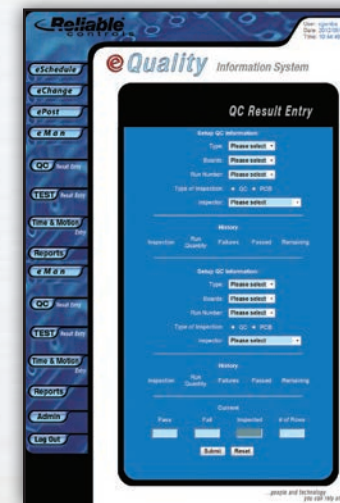
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Better by design™



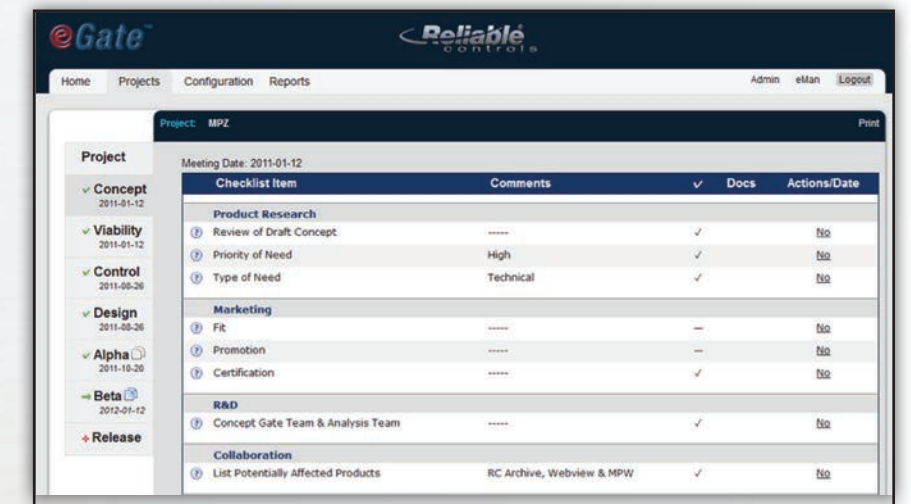
It is no secret that Reliable Controls® has an overriding goal; “Through ongoing monitoring and improvement of our operational processes, we will earn and sustain the reputation of having the most satisfied customers in our industry.”

To monitor and record the progress in achieving this goal, quality control processes and procedures have been implemented at all levels of Reliable Controls Corporation. The company is constantly improving its design quality by implementing test points and checkpoints throughout the design and manufacturing process.



Quality control begins at Reliable Controls® in the Operations department where numerous manufacturing procedures are encapsulated in a special tool called **eQuality**. This quality control monitoring and tracking tool records the inspection and test results for every product manufactured, and allows reports to be pulled on any product, based on any measured parameter.

Taking an idea from concept to market involves thousands of thoughts and decisions. To help organize all those details, Reliable Controls® uses an important tool called **eGate**. This tool provides a sequential process which organizes the overall control and collaboration of product development into six fundamental steps, or gates.



The process begins with the concept gate, which defines the product at a very high level, and then carries through the remaining gates to product release. In all, a series of six gates must be passed before a product can be shipped to market; 1) Concept, 2) Viability, 3) Control, 4) Design, 5) Alpha, and 6) Beta. Depending on the complexity of the product, it's not unusual for it to take two or three years to pass all of the gates.

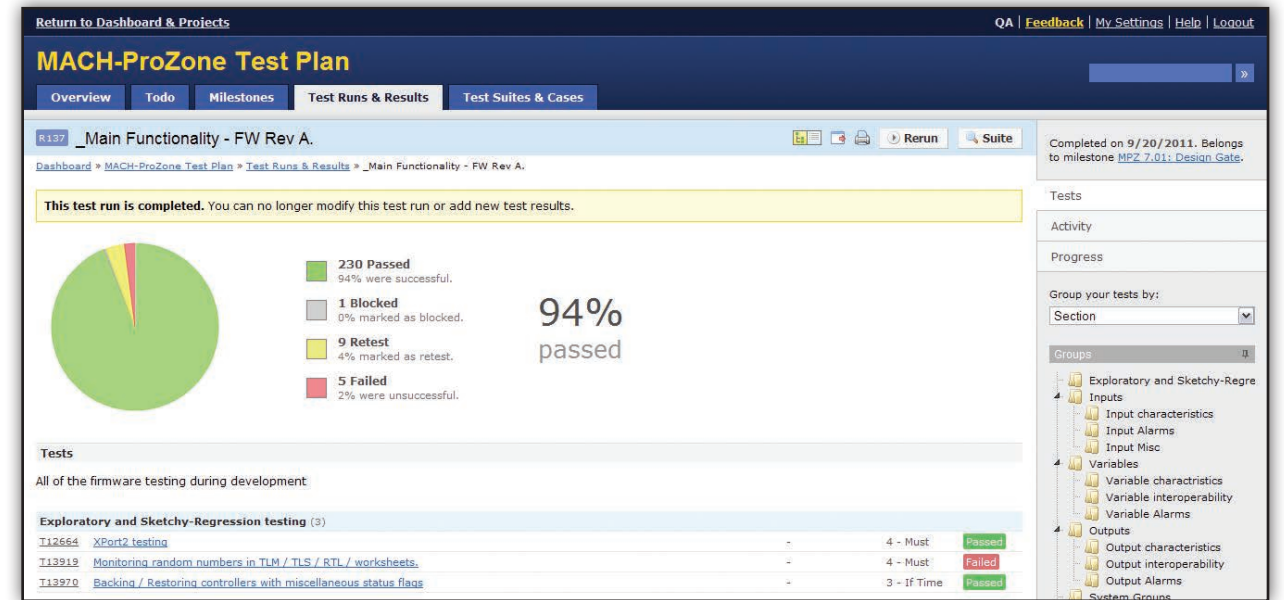
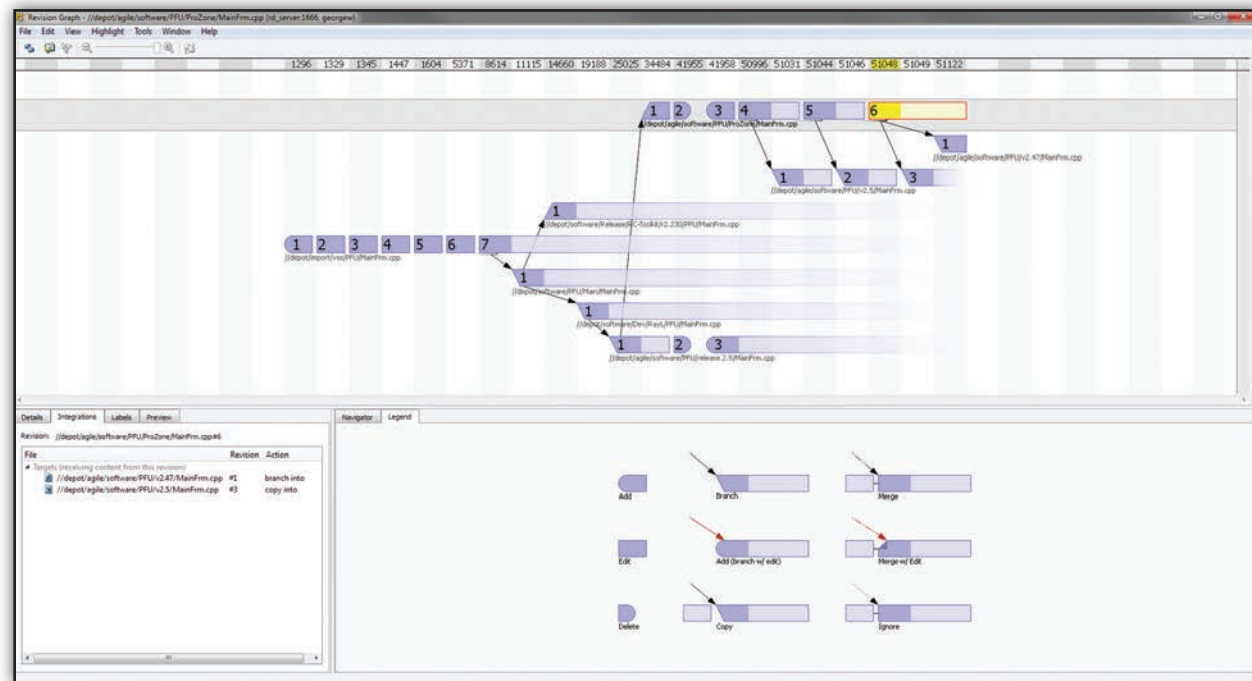
Quality Assurance @ Reliable Controls®

Quality Assurance (con't)



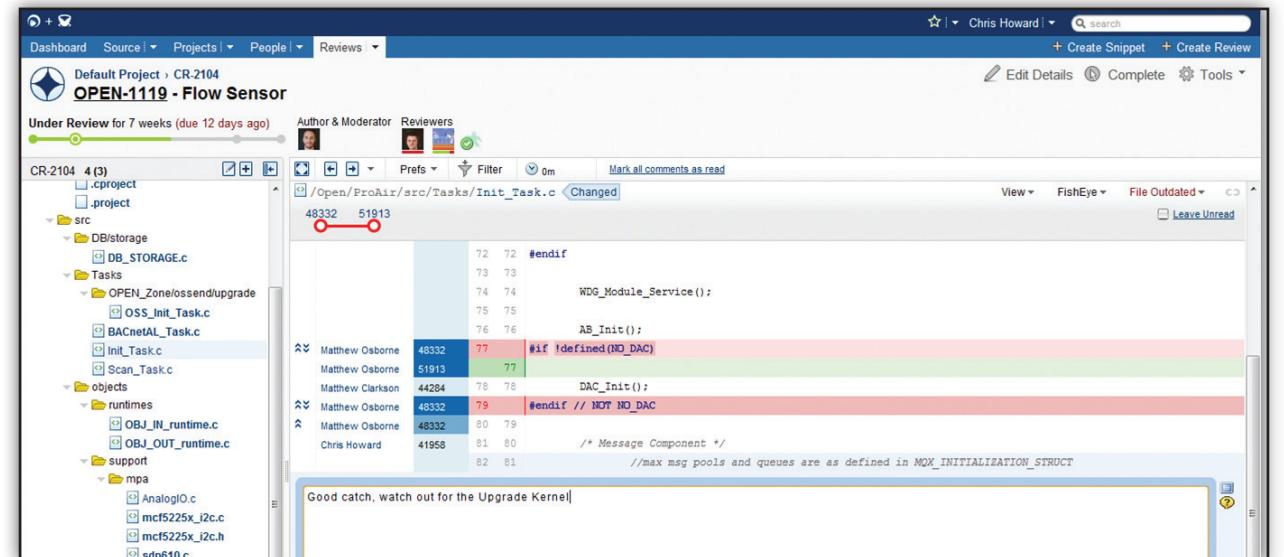
A good **warranty policy** depends on years of accurate quality measurement. Reliable Controls® measures and analyzes sales order turnaround times, Return Material Authorizations (RMA) and advanced warranty turnaround times. Quality measurement results in dependable products and services which form the basis of the Reliable Controls® industry-leading, five-year warranty program. The five-year warranty was introduced in 1992 and the number of warranty returns over a five-year period remains well below 2%.

An enormous portion of the Reliable Controls® research and development resources focus on software and firmware programming. **Perforce** is an important tool used by the Research and Development team to manage versions of software and firmware releases. Code is securely checked in or checked out and is only editable by one person at a time.



New product development at Reliable Controls® is tested continually throughout the entire development process. **Testrail** is the tool of choice for scheduling and recording the many test cases required for quality hardware and software development. Testrail offers separate tests for each specific area of functionality. These features can be individually tested during the design phase and again during alpha testing.

Crucible is a very important quality management tool employed at Reliable Controls® that facilitates “peer reviews” of software and firmware code. This effective process allows developers to closely examine each other’s code and identify/remedy bugs or concerns before the product is compiled and released to the QA team for alpha testing.



Quality Assurance (con't)

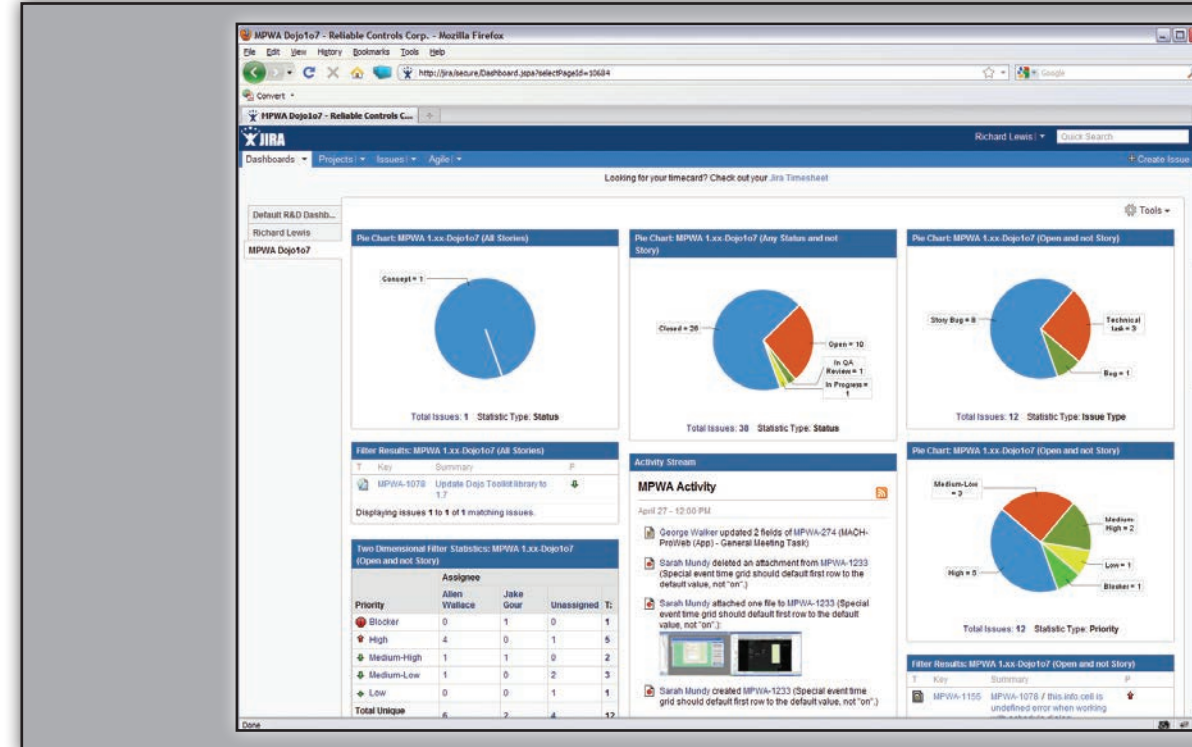
After the Design Gate is passed, the product moves on to **alpha testing**. Alpha testing is performed on every product designed by Reliable Controls®. A dedicated, highly focused team performs alpha testing of each individual function of a new product. After the alpha test team passes the product, it is retested by the entire development team in a group situation called Functional Stress Testing (FST). Only when the FST is successful can the product pass the alpha gate.



The Reliable Controls® Quality Control Team from left to right: Kyle Hendry, Jaymz Boilard, Roland Laird, and Laszlo Urban.

Reliable Controls® recognizes the true test of a new product lies in the real world. After all the in-house testing is completed, Reliable Controls® Authorized Dealers are invited to **beta test** the products for several months prior to releasing the official version.

After the official releases are shipped, new features and undocumented features (bugs) are reported to our Technical Support team and are recorded, tracked, and prioritized in another industry-leading tool called **Jira**. New features and bug fixes are developed, tested, and posted as updates for controller firmware and software. Reliable Controls® Authorized Dealers download these updates from the Reliable Controls® website at any time.



The Reliable Controls® Technical Support Team from left to right: Emmitt Bell and David Brunson.

RCArchive™
[professional-BETA TESTERS] wanted
register now

You are invited to Beta test the next version of RCArchive™ Data Acquisition Software. To participate, complete one registration form per project.

RCArchive™ version 3 is the next generation of Data Acquisition Software that will supercede all previous RCArchive™ versions. There will be a variety of upgrades available. The Submittal Sheet and the Catalog Sheet will be posted later. Preference will be given to installations where the full capabilities of RCArchive™ will be utilized.

What is required of Beta testers?

Beta testers are required to use the product in a real application. Personal home installations and bench tests are not acceptable. During the Beta test, it is imperative that product performance feedback is provided to Reliable Controls® HQ in a timely manner.



Project Description:
(Please include other controller models used in project.)

New or Existing Job?

Project Start Date:

Estimated Completion Date:



At Reliable Controls® we are committed to developing quality products and services and to earn the business of the most satisfied customers in our industry.

In 2010 the company set out to achieve ISO9001:2008 certification. This internationally recognized and highly regarded standard demands a commitment to **continual improvement**. In September of 2011, Reliable Controls® achieved ISO certification and implemented yearly verification audits to demonstrate a commitment to continually improve.

If you want more information on the Reliable Controls® commitment to quality, or if you'd like more information about the company's ISO certification, please visit...

<http://www.reliablecontrols.com/corporate/quality/>

**ISO
9001
QUALITY
ASSURANCE**



162VIC

162VIC is a new-generation office building in Auckland, New Zealand's Victoria Precinct, close to Victoria Park, the Viaduct area, and the new Wynyard Quarter. Rising five storeys from the two basement levels, 162VIC has a large 8,500 m² footprint complete with internal light well. The 4 Greenstar-rated building offers the latest in tenant services, including ample cycle parks, showers, dedicated limo parking, and its own on-site cafe. An atrium void extends from the entry level to all four upper office levels. Suspended walk bridges serve each level from the lifts, providing architectural interest and convenient access to the floors.

For Callander Control, a Reliable Controls® Authorized Dealer, the 162VIC project was their first major BMS job with Reliable Controls® to cover complete plant and zone control. With a tight timeline of just 9 months from shovels in the dirt to "For Lease" signs in the windows, the project was in some respects a trial by fire – in other words, an exercise in smoke control.

Main plant equipment installed at the facility includes: a Turkish made back-up generator, a Trane "R" series chiller, and a Trane air handler. The backup generator uses a low-level interface, mainly load shedding if the main power is lost. The Trane chiller is HLI via Ethernet BACnet/IP – the pumps use VSDs which are EIA-485. The Trane air handler features 3-phase electric heat, chilled water, and fresh air damper section.

Ground to level 4 dampers are fire-rated for smoke control and smoke control strategy. Smoke detection for each tenant unit on each floor travels to the fire panel, then to the BMS which invokes a strategy that essentially closes the dampers on unaffected floors, allowing the atrium smoke extract fan to draw smoke from an affected floor, into the central atrium, and up and out of the building. In the atrium, the fan coils are always on. Smoke detection in the AHU return plenum travels first to the fire panel then to the BMS, the same as the smoke detection for the atrium. To prove proper operation of the smoke control system, Callander Controls witnessed an independent smoke test.

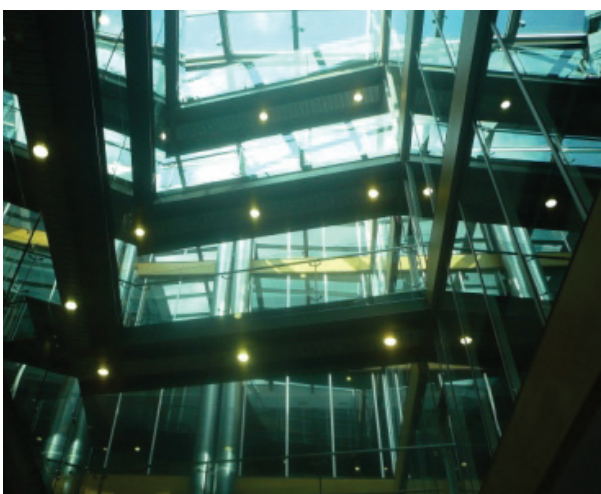
162VIC also features 11 electrical meters and 11 water meters, which have pulse input. With two tenants per floor, there are 2 electrical and 2 water meters per floor, plus 2 CO₂ sensors per tenant zone. Each floor is subdivided into roughly 20 fan coil zones, each with an expanded SMART-Space™ Controller. In New Zealand, building owners find that it is important to provide visual access to the BMS for their tenants and the SSCE was an obvious choice for Callander Control who were able to provide building tenants with view/adjust access to date/time, setpoint temperature, auto or manual heat or manual cool, and a weekly schedule.

As a reward for a job well done, Callander Control landed a similar sized project in Auckland with the same builder.



Reliable Controls® Equipment Installed

- 1 MACH-ProCom
- 1 MACH-ProSys
- 1 MACH-ProWebSys
- 2 MACH-ProPoint Input
- 4 MACH-ProPoint
- 20 SPACE-Sensor Temperature CO₂
- 98 SMART-Space Controller Enhanced



RIVER ROW CONDOMINIUMS

CHATHAM, ON, CANADA

RESIDENTIAL

WIRELESS COMMUNICATION

River Row Condominiums are a collection of four, three-storey residential structures in Chatham, Ontario adjacent to the Thames campus of Saint Clair College. The buildings are thirty years old.

PROJECT DETAILS

Reliable Controls® Authorized Dealer, Postma Heating & Cooling successfully completed a retrofit installation of a monitoring system for the River Row residential complex in Chatham, Ontario. In somewhat of a pilot project, Postma installed a wireless monitoring solution into 30-year old condos that had previously been running without a controlled BAS. With energy costs on the rise, one building in the complex was singled out as a test case.

The installation is centered around four MACH-ProZone™ controllers that host six SMART-Sensor™ EnOcean Accesspoint devices to monitor space temperature and provide local setpoint adjustment control for modulating heating hot water valves in each condo (total of 31 condos). The onsite mechanical equipment consists of two boilers, two boiler pumps, one building pump with VFD, and 31 modulating radiant valves.

For Postma, EnOcean wireless sensing allowed for an easy retrofit installation – standard, wired installation would have been cost and labor prohibitive. Final installation has proven to be drastically more appealing from a cosmetic perspective (sensors only rather than surface mounted wire mold, etc.) and more economical. The local utility provider is establishing guidelines for energy savings rebates and it is anticipated that up to 30% of the project cost could be recuperated in rebates.

To learn more about projects using Reliable Controls® visit www.reliablecontrols.com/projects/overview



PROJECT TYPE:

Retrofit

INSTALLATION TYPE:

**EnOcean Wireless
Temperature Modulation**

TOTAL AREA:

30,000 m² (98,425 ft²)

EQUIPMENT INSTALLED:

**1 MACH-ProWebSys™
4 MACH-ProZone™
8 SMART-Sensor™ EnOcean Accesspoint
31 SPACE-Sensor™ EnOcean**

NETWORK:

EIA-485, Ethernet, Wireless

TOTAL SYSTEM POINTS:

103 points

RELIABLE CONTROLS® DEALER:

Postma Heating & Cooling

www.reliablecontrols.com