



**INVEST IN YOUR
BUILDING OPERATOR:**
Won't the Building Run Itself?

IN THE CLASSROOM:
GEORGE BROWN COLLEGE
Offers Unique BAS Diploma



www.reliablecontrols.com

RUNtime

The Official Quarterly Newsletter of Reliable Controls® Corporation

Q4 - 2014

Investing in the Future

Reliable Controls Looks at
Training and Education



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BACnet
International



Reliable
controls



UNIQUE BAS DIPLOMA PROGRAM

George Brown College Offers Building Automation Program with Curriculum Featuring Reliable Controls MACH-System™

Building Automation Systems (BAS) control more than the basics: they regulate airflow, monitor energy use, and integrate with security, lighting, and other building systems to deliver comfort, safety, and energy efficiency. Today's buildings are increasingly complex, differing in use, size, operating hours, comfort levels, and environmental conditions. Achieving optimal technology for building services is the result of appropriate systems design and integration during planning, construction, commissioning, and operation.

Based in Ontario, Canada, George Brown College offers an advanced diploma program in Building Automation, providing students with the technical skills they need for success in the building automation industry. The program, **T171 Electromechanical Engineering Technology – Building Automation**, was created to augment the existing two-year technician program and

provide students with the opportunity to earn a three-year advanced diploma specializing in Building Automation.

Reliable Controls plays a key role in the program, providing technical hardware and software components in conjunction with support from Reliable Controls Authorized Dealer *Setpoint Building Automation Inc.* The teaching lab is outfitted with twelve lab stations, each equipped with a Reliable Controls MACH-System, used to teach sensor integration, networking, programming, advanced building controls, and more. Leo Salemi, Professor and Coordinator of the program describes the MACH-System as *“one of the best teaching platforms I’ve come across, with documentation second to none.”*

In the program, students gain the skills to install, program, adjust, and maintain building automation systems. They learn about PLCs, HVAC controls, sensors, security alarms, camera

systems, IP based devices, IT networks, and other technologies found in modern day buildings. The program meets the needs of employers seeking graduates who can assist with installation and commissioning, monitor instrumentation, work with engineering teams, or join facility management to ensure optimum building maintenance and operation.

Effectively utilizing industry partnerships, a recent student research project explored the idea of a “smart connected office cubicle”. The project featured methods to develop smart office cubicles with high levels of energy efficiency and a high-tech, futuristic vision. This demonstrated how LED lights and under-floor air diffusers can be controlled based on occupancy and user preference. The project featured technology from companies including Camino Modular Systems, CISCO, Autodesk Canada, Converging, EllisDon, Setpoint Building Automation Inc., and Reliable Controls. The technology was used to collect energy consumption data in ideal office cubicles. Reliable Controls devices were installed on the back of the smart office cubicles to control HVAC and lighting based on occupancy. The test procedures conducted and data collected help to confirm the performance of the product while emphasizing its potential.

Another project completed using Reliable Controls components featured a DynaCurrent Technologies Furnace Testing Station and MACH-Zone™ controllers to monitor furnace data and the adjacent temperature controlled chamber. Because the MACH-System uses the BACnet® protocol, two sharp students figured out how to integrate the system with a Yokogawa power monitoring

unit. RC-Studio™ was used to develop the HMI and trend logs.

All students in the class participated in one or both of these projects, running wiring, installing sensors and actuators, learning to troubleshoot, calibrate, and program, and performing final commissioning. The students were proud to demonstrate their work to lab visitors.

Future plans for the program include two more teaching labs and a new research facility. Students will install a MACH-ProWeb™ to demonstrate remote connectivity and web apps, while another MACH-ProWeb will be used in the new Advanced Building Automation teaching lab to serve as a data hub to collect data from sensors installed throughout the floor. There is also a plan to develop the analytics platform to demonstrate how all building systems can be integrated to function in one intelligent manner.

This program, arguably the most unique of its kind in Ontario, provides a skill set that is in high demand in both the construction industry and the controls and automation industry. Not only do students of this program work closely with construction engineering students to understand the requirements of the construction industry, but they are also prepared for jobs with Reliable Controls Authorized Dealers.

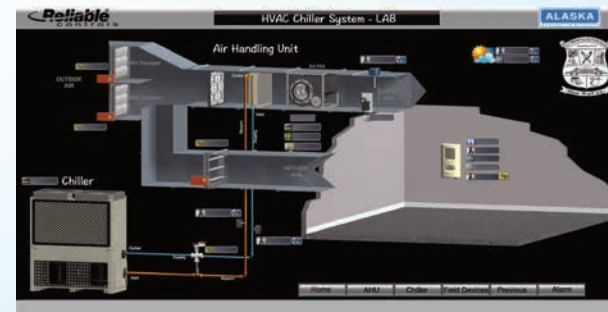


New Test Lab at Centre for Excellence

Alaska Engineering Solutions Provides Polytechnic College with Reliable Controls HVAC System Test Lab

Alaska Engineering Solutions PVT Ltd. recently completed a project for P.A.C. Ramasamy Raja Polytechnic College to supply the school with an HVAC system test lab. The school ranks within the top ten polytechnic schools in India, created as a Centre of Excellence for higher training and skill development in Engineering and Technology.

The school's alumni are spread across the globe practicing as leading HVAC and BMS consultants. To strengthen the college's already successful curriculum, Reliable Controls and Alaska donated products and services to improve the program and benefit the next generation of industry professionals.



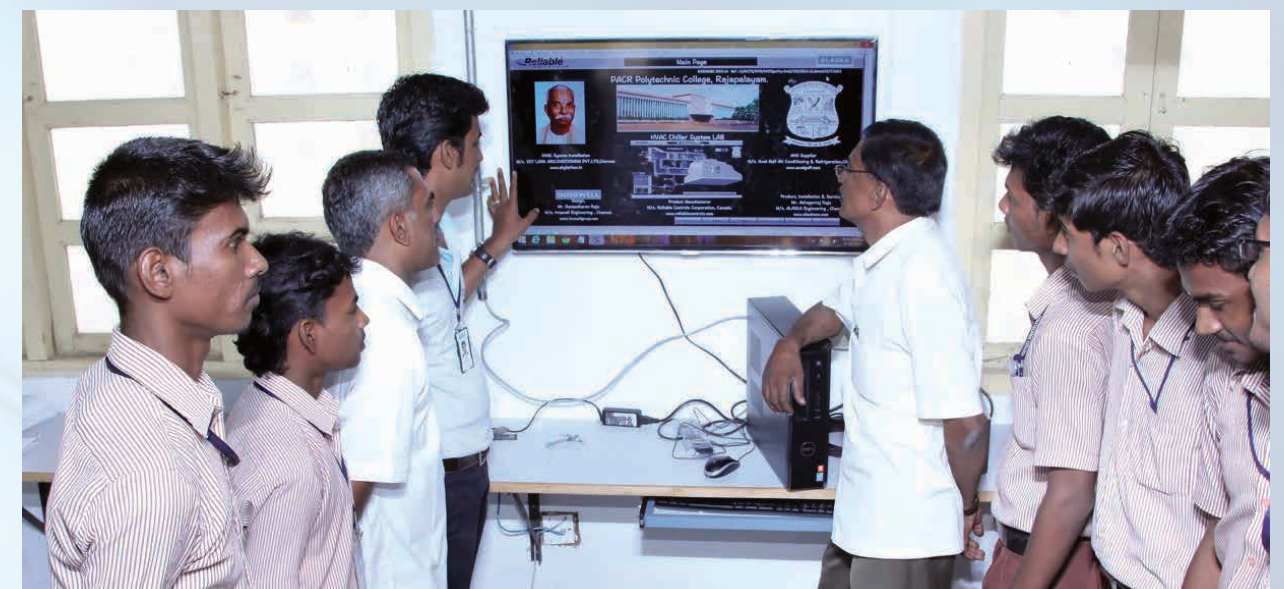
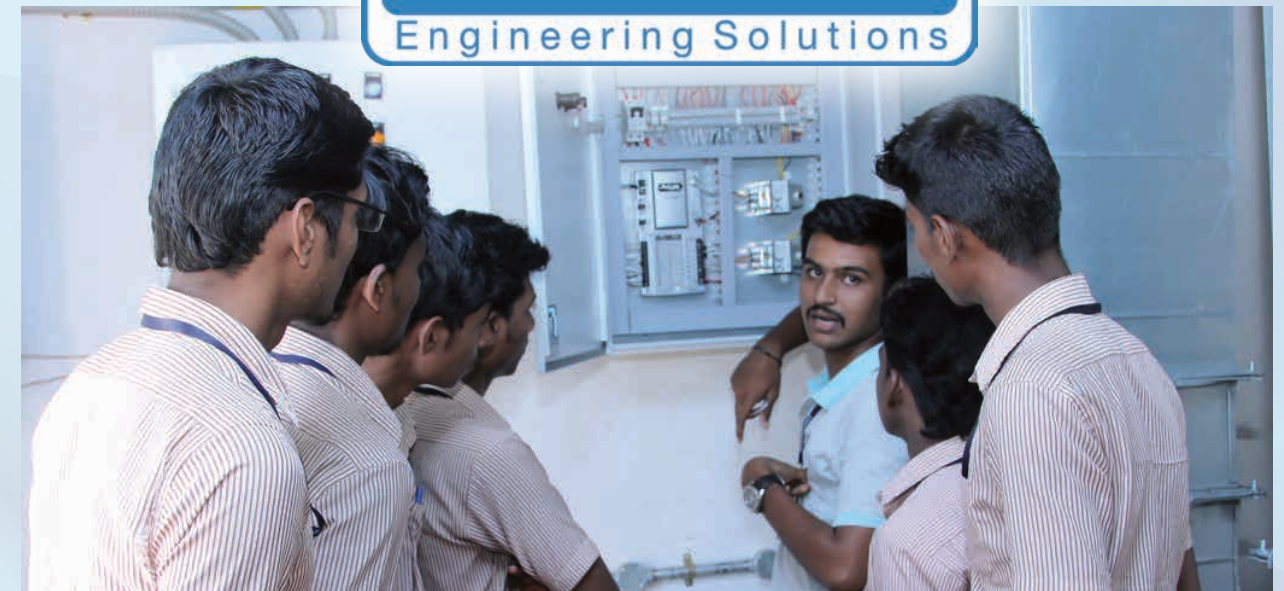
Reliable Controls is a supporter of effective education, and was pleased to provide the following equipment to the college:

a MACH-ProSys, a MACH-ProPoint IO, a MACH-ProAir, and a SMART-Sensor with CO2, humidity, and occupancy sensor, in addition to RC-Studio and RC-Archive software. Alaska Engineering Solutions rounded out the gear by donating the following equipment and labour: an air differential transmitter, an immersion temp with thermowell (chilled water measure), a duct temp sensor, damper actuators, a 3-way valve with actuators, an outdoor temp +RH sensor, and all cables and conduits required.

Alaska Engineering Solutions, based in Chennai, India, was founded in 2012. The company aims to deliver complete engineering solutions in the most economical way for their customers. Alaska employs a high level of personnel with a heavy investment in their training, ensuring that the highest standards of health, safety, and governance are applied throughout the organization. This has enabled the company to efficiently manage projects, bridging the gap between completing the installation and commissioning the system, ensuring that the complete system is handed over to customers on time and with energy saving data.

PACR Ramasamy raja Polytechnic college,
Kumarasamy Raja nagar Post, Rajapalayam -626108
Virudunagar Dist, Tamil Nadu, India

ALASKA Engineering Solutions Pvt. Ltd.,
Anna Nagar East, Chennai - 600 102 ,
Tamil Nadu, India
Phone: +91 - 44- 42117147



NEW DEALERS

New Reliable Controls Authorized Dealers include:

Aeon Ecotech Pty Ltd
Gurgoan, Haryana, India

Arizona Comfort Zone LLC
Marana, AZ, USA

BalanTec International Co Ltd
Nonthaburi, Thailand

Cornerstone Automation
Chattanooga, TN, USA

ESSI - Electric Systems Services Inc.
Fort Myers, FL, USA

**Gulfway Measuring & Control
Equipment Trading LLC**
Ajman, UAE

Hangzhou JiShao Technology Co Ltd
Hangzhou City Zheijang

Josh Building Automation Inc.
Chennai, India

OJS Building Services of Indianapolis
Indianapolis, IN, USA

Skyshot Climate Solutions
Johannesburg, South Africa

TRADE SHOWS

Visit Reliable Controls at these upcoming trade shows:



2014 PM Expo
December 3–5, 2014, Booth #1826
Metro Toronto Convention Centre, Toronto, ON, Canada
www.pmexpo.com



AHR Expo 2015
January 26–28, 2015, Booth #3423
McCormick Place, Chicago, IL, USA
www.ahrexpo.com



NFMT 2015
March 10–12, 2015, Booth #2121
Baltimore Convention Center, Baltimore, MD
www.nfmt.com/baltimore



these skills, but they are essential to achieving the end goal. Additional building-specific education related to BAS and other installed systems is readily available from manufacturers, including Reliable Controls.

should expect reduced energy expenditures, a balance between comfort and cost, the reality of automatic operation, and reduced maintenance expenditures.

The following graphic explores each of these benefits:

Assuming that a trained and experienced building operator is in place, a building owner

INVEST IN YOUR BUILDING OPERATOR

If I Invest the Money in a Fully Automated, Integrated Building Automation System, Won't the Building Run Itself?

Often, building owners and developers willing to invest extra capital to build a "green" or LEED® certified building with a sophisticated Building Automation System (BAS), balk at the cost of hiring a trained operator using funds from their operating budget. Instead, BAS operation falls to a janitor or "Jack of all trades". Although Jack may be invaluable for taking care of a myriad of maintenance issues generated by an occupied building, he may not have the training and experience required to take the BAS to the next level by effectively maximizing occupant comfort and minimizing energy consumption and maintenance costs.

The best laid plans of design engineers can fall to ruin at the hands of a poorly trained

operator with a love of jumpers and manual overrides. Mechanical and electrical systems in new buildings are often non-standard and complicated. It takes experience and training to comprehend complex, integrated sequences of operation in order for an operator to make positive changes to the system without negative repercussions. In addition to daily BAS tasks, an operator should spend many hours reviewing reports, tuning control loops and programs, and writing new sequences of operation. It is clear that an individual capable of this type of work must be experienced, well-trained, and given the time and go-ahead to do the work.

Finding an operator with experience dealing with both standard mechanical and electrical building systems is the first step. It takes years to learn

01

Reduced Energy Expenditure

No matter how professional the design and commissioning team, there are always opportunities to save additional energy, especially in a green building using new design concepts and technology. The difference between the final programmed sequence of operation and the consultant's original written sequence of operation may be hundreds of lines of code.

Balance Between Comfort and Cost

02

There are many studies proving the connection between employee comfort levels and employee productivity. An experienced operator will survey occupants looking for spot comfort problems and trends in occupant satisfaction, then take action in response, and report the results. Experienced operators can spend years optimizing the balance between comfort and energy expenditure. They are mindful that building changes can affect occupancy, which, in turn, can affect windows, walls, lighting, and HVAC systems that must be monitored and incorporated in control strategies.

04

Reduced Maintenance Expenditure

Perhaps even more significant than energy savings, are the reduced maintenance costs that can be realized over the life of the building due to the attentions of an experienced operator. BAS logs will be reviewed on a regular basis to determine equipment operating hours and the level of cycling. The operator can hugely impact the system, making changes to extend the life of the controlled equipment by years, translating into major maintenance savings.

Automatic Operation Becomes a Reality

03

For the first year of occupancy in a new building, the operator is typically busy identifying deficiencies and working to correct them. Changes will be necessary before the BAS responds automatically to parameters such as differences in occupancy, outdoor temperature, outdoor humidity, ambient light, and more. During this period, the operator will be busy making manual adjustments and tweaking the system, often making permanent, physical changes to mechanical and electrical systems, and programming changes into the BAS so the initial problems do not recur.

What Can Reliable Controls Do To Help?

The Reliable Controls MACH-System™ is the most flexible control system in the building control industry, allowing operators to make changes to their BAS to reduce energy and maintenance costs, and to create a superior environment for building occupants.

They just need a little training!

Step 1:

Every MACH-System operator should sign up as a “Customer” at www.reliablecontrols.com. Select “New Customer?” on the left side of our home page and fill out the form, which is automatically submitted to the Reliable Controls Authorized Dealer of your choice for approval. You will receive a password for the Customer Support Center, where you can access a plethora of material and information.

Customer Support Center Login

Complete and submit the form to request a Customer Support Center login.
[Forgot Your Password?]

Dealer:

by Sales Region by Country by Province / State by Company

Company:

Name:

Email:

Phone:

Address:

City:

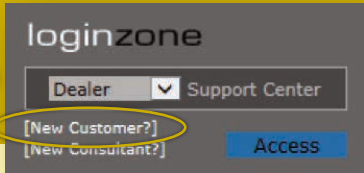
Country: Select Country

State / Prov.:

Zip / Postal Code:

I agree to the [Terms of Use]

Submit Request



Once you have access to the **Customer Support Center**, the following educational materials are available for free!

- Complete User Guides for Reliable Controls current and legacy controllers and software
- Online eLearning courses covering current controllers
- Operator Training Manual
- Online training videos
- Dates for upcoming Operator Training classroom sessions

Step 2:

Sign up for an upcoming, two-day Operator training session in your area. Reliable Controls Operator training sessions include hours of hands-on experience using RC-Studio® connected to a live control network! This course has been attended by hundreds of operators across North America, and consistently receives approval ratings of over 90%.

Upcoming Operator Training Sessions:

November 10–11, Washington, DC, MD
November 13–14, Philadelphia, PA
November 24–25, Toronto, ON

Contact your preferred Reliable Controls Authorized Dealer for details and registration.



YORK UNIVERSITY STUDENT CENTRE

TORONTO, ON, CANADA

EDUCATION

LIVE MECHANICAL RETROFIT

The York University Student Centre is the hub for students, and includes meeting rooms, offices, a large food court, pubs and bars, and a daycare. As the facility is literally occupied every day of the year, this retrofit was implemented "live", with the work revolving around the schedules of the occupants.

PROJECT DETAILS

Reliable Controls Authorized Dealer, Jade Logic Building Technologies Inc., completed this retrofit project for the busy, Toronto-based York University Student Centre, a 12,356 m² (133,000 ft²) facility used for many different purposes and functions.

The system is connected to the university computer network (LAN) and is accessible through the network and over the Internet. The original fan coil units with pneumatic controls operated 365 days per year, 24 hours per day, and were replaced with new fan coils with DDC controls. The main air handling systems were all retrofit with DDC valves and actuators, as well as new main controllers.

The new system allows for customized schedules due to the varied use of the building. Supply air temperatures are also monitored from each fan coil to provide alarms on any out-of-range temperatures.

This successful retrofit project provides a savings of approximately \$35,000 per year in operating costs.

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



PROJECT TYPE:
Retrofit

INSTALLATION TYPE:
Fan Coil Unit, VAV

TOTAL AREA:
12,356 m² (133,000 ft²)

EQUIPMENT INSTALLED:
 150 SMART-Space Controller™
 25 MACH-ProZone™
 1 MACH-ProWebSys™
 6 MACH-ProSys™
 4 MACH-ProPoint™

NETWORK:
 EIA-485
 Ethernet
 LAN

TOTAL SYSTEM POINTS:
1600 points

RELIABLE CONTROLS® DEALER:
Jade Logic Building Technologies Inc.

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