GREEN TECH. INVESTMENTS:
Campaign Against Climate Change

SUPPORT SPANNING THE GLOBE:
Service Available on Every Continent

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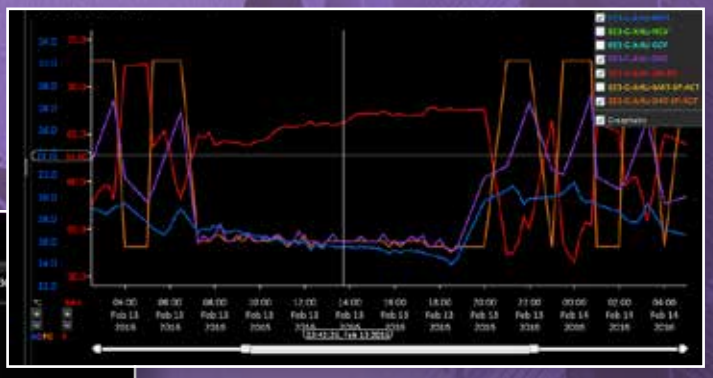
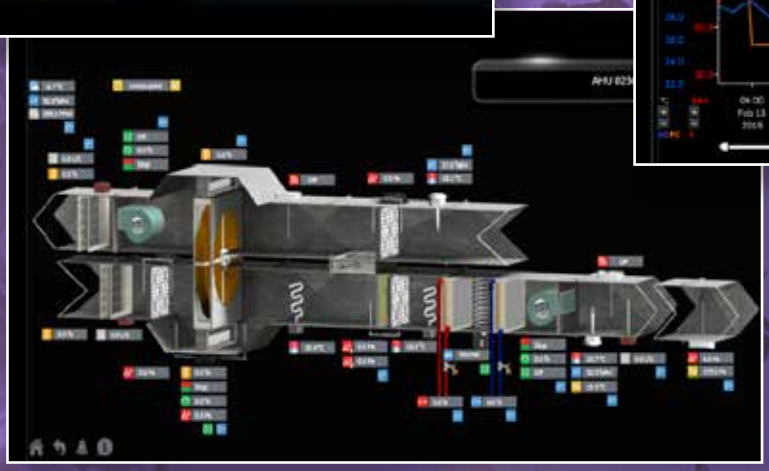
RUNtime

The Official Quarterly Newsletter of Reliable Controls® Corporation

Q3 - 2016

Introducing New Features to RC-WebView®





Expanding Capabilities of
Web Access for the Masses

Introducing New Features to RC-WebView®

Expanding Capabilities of Web Access for the Masses

RC-WebView from Reliable Controls is a powerful, Web server application that allows users to conveniently access multiple Internet-connected BACnet® control systems with a Single Sign On (SSO).

The latest version of RC-WebView introduces a number of new features that will help save time and improve productivity.

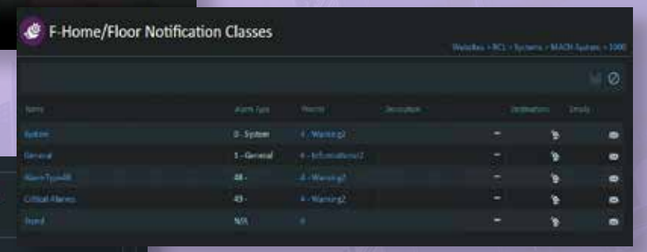
New features include:

- New Automatic Cleanup tool to automatically or manually clear out expired Enterprise Schedule events
- New Single-Point and Multipoint Trend Log worksheets for creating, viewing, and editing trend logs
- New Notification Classes worksheet and Email Recipients service
- New Image Gallery tool to access, update, and delete banner images, Navigation Groups graphics, and company logos
- Improved speed performance
- Improved user interface and navigation to help unify the administration and client side experience
- Improved context sensitive help
- Improved integration with myControl® app

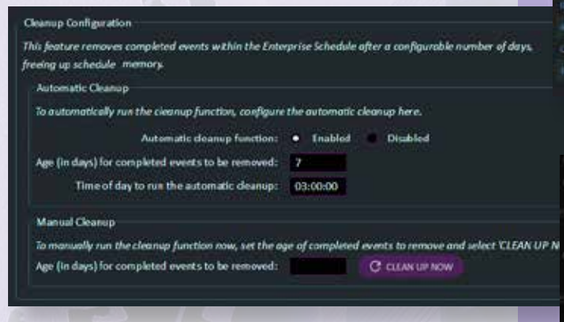
As before, users can enjoy the convenience of using a standard browser to access building controls 24/7 and can configure a complete range of schedules using the Enterprise Schedule feature, from facility-wide events to individual pieces of equipment.

With secure user configuration, operators can set up multiple users on Active Directory to simultaneously access and view graphics, trend and runtime data, and if permitted, change setpoints, edit schedules, and acknowledge alarms. All logins and changes are automatically recorded using the Audit Trail feature that ships standard with RC-WebView.

Access multiple BACnet control systems with a Single Sign On (SSO)



Notification Classes Worksheet and Email Recipients Service



Automatic Cleanup Tool

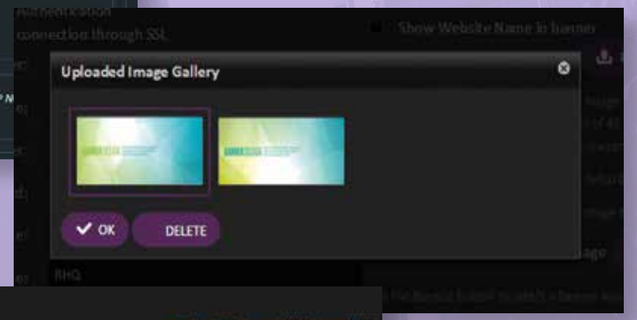


Image Gallery Tool

Multipoint Trend Log Worksheet

Enterprise Scalability

RCWebView®
BACnet® Operator Workstation Software

New Investments in Green Technologies

The Global Campaign Against Climate Change

The 2015 United Nations Climate Change Conference held in Paris, France in December 2015 was the 21st yearly session of the Conference of the Parties (COP21) of the United Nations Framework Convention on Climate Change (UNFCCC). The conference negotiated the Paris Agreement, a global agreement to reduce climate change, setting a goal limiting global warming to less than 2 degrees Celsius compared to pre-industrial levels. The agreement will become legally binding if joined by at least 55 countries, which together represent at least 55 percent of global greenhouse emissions. The participating 195 countries agreed to the final global pact by consensus. France's Foreign Minister, Laurent Fabius, said this "ambitious and balanced" plan was an "historic turning point" in the goal of reducing global warming.

In April 2016, it was reported that this international climate deal could come into force two years early, according to the top United Nations climate official. The historic Paris Agreement was originally meant to be activated in 2020, but Christiana Figueres, Executive Secretary of the UNFCCC said, "I think we will have a Paris Agreement in effect in 2018." She added, "The quality of investment today equals the quality of energy tomorrow—equals the quality of life forever... it is not correct to think we are going to deal with climate change tomorrow. We have to deal with it today."

At a high-level signing ceremony on April 22, 2016, on Earth Day, more than 170 countries signed up to this landmark climate change deal, where 60 heads of state were in attendance. "We are breaking records in this Chamber—and that is good news," UN Secretary-General Ban Ki-moon said. "We are in a race against time."

Following this historic climate deal, C40 Cities Climate Leadership Group (C40) launched new research highlighting the wide range of economic and social benefits arising from city climate action. C40 is a global network of large cities taking action to address climate change by developing and implementing policies and programs that generate measurable reductions in both greenhouse gas emissions and climate risks. C40 supports cities to collaborate effectively, share knowledge, and drive meaningful, measurable, and sustainable action on climate change. The lack of access to finance was one of the biggest barriers to cities delivering climate action; however, several actions have been taken in this regard.

The UN Green Climate Fund directed at low carbon, resilient development received a boost at COP21, with advanced economies formally agreeing to jointly mobilize $100 billion per year by 2020 to address the needs of developing countries.

C40 is doing its part to mobilize financing through the creation of the C40 Cities Finance Facility (CFF) in partnership with Germany and Inter-American Development Bank (IADB), which will provide the skills, technical assistance, and connections to funding opportunities needed to unlock up to $1 billion worth of sustainable infrastructure in cities across low and middle income countries by 2020.

SOLUTIONS COP21 PARIS 2015

The World Bank Group has adopted a new Climate Change Action Plan, which intends to help countries meet their Paris COP21 pledges and address increasing climate impacts. As part of this effort, the bank plans to provide $25 billion in private financing for clean energy by the end of the decade. World Bank Group president Jim Yong Kim said, "following the Paris climate agreement, we must now take bold action to protect our planet for future generations. We are moving urgently to help countries make major transitions to increase sources of renewable energy, decrease high-carbon energy sources, develop green transport systems, and build sustainable, liveable cities for growing urban populations."

International Finance Corporation (IFC), a member of the World Bank Group, is planning to increase its climate investments from the current $2.2 billion a year to $3.5 billion a year in grid-connected renewable energy, green buildings, industrial/commercial energy efficiency, and climate-smart urban infrastructure. In addition to adding $13 billion a year in private sector financing by 2020, IFC intends to continue to use financial instruments and advice to grow its business in distributed renewable energy, off-grid energy access, and climate-smart agriculture.

Corporate leaders, government ministers, and international development banks leading the transition to a green economy highlighted the multi-trillion dollar business opportunities at the Sustainable Innovation Forum, the largest business-focused event held during the COP21 Paris Climate Summit. The two-day event aimed to accelerate the development of a low-carbon, green economy by showcasing innovative technology solutions, sharing pioneering thinking, and building cross-sector partnerships.

United Nations Environment Program Executive Director Achim Steiner said, "as momentum for a sustainable future grows, we are already seeing the enormous opportunities for business of an inclusive green economy. We need look no further than the power sector, where last year half of all new infrastructure investments—some $270 billion—were in renewables. The market for low-carbon technologies and innovations is not some future concept. It is thriving today, and offers huge potential for those who would capitalize on it."

Earlier this year, members of the Massachusetts Institute of Technology (MIT) community and researchers from the US Department of Energy (DOE) convened for Energy Efficiency and Renewable Energy Day, an event dedicated to the future of low-carbon energy. DOE leaders and MIT faculty discussed current research to accelerate scientific breakthroughs in clean energy fields. In a panel on buildings, energy efficiency, and advanced manufacturing, Mark Johnson, DOE's Director of Advanced Manufacturing, spoke about the importance of having an innovation ecosystem where research and development and manufacturing are connected. "We need to stop the cycle", he said, "of clean energy products [being] invented here, but made elsewhere." Reliable Controls excels in the global market in this regard by keeping all research and development, manufacturing, assembly, sales, and service at the LEED® Platinum Headquarters in Victoria, BC, Canada, effectively leveraging the company's ability to sustain an in-house ecosystem while retaining the company's position as a global player in the market.

"The market for low-carbon technologies and innovations is not some future concept. It is thriving today, and offers huge potential for those who would capitalize on it."

The next four years are critical; global emissions must peak by 2020 and the agreement may not kick in until that year. Cities have a major role to play, consuming more than two thirds of global energy and on track to become home to more than two thirds of the global population. The good news is that global mayors within the C40 network and beyond are already providing the leadership, commitment, and concrete solutions to make the difference.

The building industry is one of the largest users of energy, with buildings accounting for almost one-third of global greenhouse gas emissions; therefore, efforts to reduce energy can pay high dividends in lowering the global carbon footprint, and controllers and sensors that Reliable Controls manufactures and distributes are key in this effort. Not only does the company provide effective CO2 measuring tools, but it also provides the software to measure all data and make essential changes where necessary, allowing building operators to make noticeable changes to save energy and costs.

There is more to this energy movement than rapid advances in technology. The breakthrough of big data promises to take energy savings into a new era, delivering customers previously unrealized operational intelligence. As outlined in the Q2 2016 issue of RUNtime, effective enterprise data management has a clear impact on businesses and the Reliable Controls MACH-System is engineered to provide a simple, flexible, and sustainable solution for modern facility and enterprise portfolios, as well as an excellent solution for facility enterprise data management.

Leadership in Energy and Environmental Design (LEED) is a rating system recognized as the international mark of excellence for green building in 150 countries. LEED works because it recognizes that sustainability should be at the heart of all buildings; in their design, construction, and operation.

Reliable Controls is in a unique position to help building owners and operators achieve these energy goals. In British Columbia alone, over 33% of LEED Platinum buildings depend on Reliable Controls. The results speak for themselves. Leaders around the world have made LEED the most widely used third-party verification for green buildings, with approximately 1.85 million square feet being certified daily.

Green buildings create a healthier working environment for staff and tenants, through better air ventilation and more natural daylight. They also reduce waste, conserve energy, decrease water consumption, and drive innovation. It is clear that making buildings greener with Reliable Controls can have a significant impact on larger environmental goals, ultimately directly helping to achieve the goals set out in the historic Paris Agreement.

RUNtime

With 30 years of design and manufacturing excellence in the building automation industry, Reliable Controls continues to grow steadily. Regional sales and support offices now span the entire globe.

Spanning the Globe with Regional Sales Support

Robb Shipley
Western Canada

Will McNeill
Western USA

Tracey Lange
Central USA

Al McElhone
Eastern Canada

Gary Bauer
Eastern USA

Karina Dougherty
Latin America

Candice Herrmann
Coordinator

Brian English
EuroAfrica

Jacob Sng
Southeast Asia

Wei Wang
China

Cindy Lee
Administrator

Ian Giles
Australasia

New Dealers

New Reliable Controls Authorized Dealers

BAS Control Systems LLC
Mechanicsville, VA, USA

Prodepred - DHP Sistemas
Canoas, RS, Brazil

VIMAU S.A. de C.V.
San Pedro Garza Garcia, Nuevo Leon, Mexico

Reliable Controls sales, installation, service, and support are all performed by a growing network of independent, factory-trained Authorized Dealers. Each dealer is committed to the green building controls industry and to providing total customer satisfaction.

Trade Shows

Visit Reliable Controls at these Upcoming Trade Shows

AIRAH 2016
For a more detailed list of AIRAH location and addresses, please visit: www.reliablecontrols.com/news/events/

July 7, 2016: Brisbane, Australia

July 28, 2016: Sydney, Australia

August 23, 2016: Cairns, Australia

August 25, 2016: Townsville, Australia

September 15, 2016: Victoria, Australia

September 22, 2016: Canberra, Australia

October 27, 2016: Adelaide, Australia

Arizona Association of School Business Officials
July 20-23, 2016, Tucson, AZ
Marriott Star Pass Resort

MCE Asia 2016
September 7-9, 2016, Marina Bay Sands, Singapore
Marina Bay Sands, Booth #F18

AHR Mexico 2015
September 20-22, 2016, Monterrey, N.L., Mexico
Cintermex, Booth #1316

Facility Reduces Energy Consumption by 67%

Upgrades Result in Expected 4-Year Return on Investment

Environmental Automation, an Australia-based Reliable Controls Authorized Dealer, successfully completed a building automation system update project for Capital Centre, an office tower in Sydney, Australia. The project resulted in a 67% reduction in energy consumption and an expected four-year return on investment.

The office tower, located within the Sydney Hilton Hotel, is an eight floor tower with a total floor area of 15,429 m² (166,078 ft²) with services independent of the hotel. Mechanical services and the ancillary plant and equipment serving the office towers were last refurbished in 2006; however, in the years following the refurbishment, there were issues with reliability and operating costs, which gradually escalated to undesirable and unsustainable levels. The system had also reached the end of its product support life, which contributed to the escalating issues and costs.

Key objectives included:

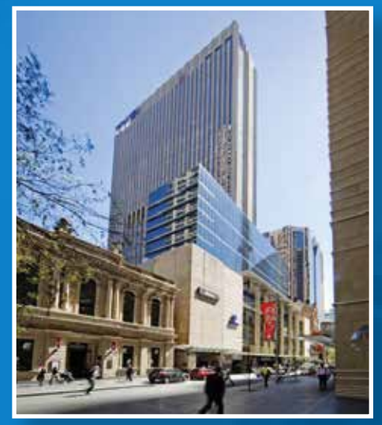
- Improved reliability of mechanical equipment
- Energy operating cost reduction
- Addressing inefficiencies in plant operations
- Reducing operating costs
- Improved visualization/reporting

This project included two streams of engineering, which were undertaken during the initial phases of the project:

1. **Design and implementation of the new building management system (BMS) control strategies, including hardware, networking, and integration**

2. **Identification and action planning for plant items requiring additional solutions to improve core reliability to acceptable levels, and succession planning for major plant items deemed a risk to efficiency and reliability goals**

The solution implemented for this project is a fully native, BACnet® compliant BMS, using Reliable Controls hardware and software. While BACnet is known as a "future proof" solution because of its backwards compatibility and ability to work with products from different vendors, Environmental Automation further ensured the project's future viability through the installation of



an optic fiber backbone, installed from the basement lead point of attachment through to the plant room, with floor connections made at strategic locations. High speed, CAT 6 cabling was reticulated across the floors to their respective controllers.

New controllers were installed at each VAV throughout the building and networked to the new dedicated floor controllers. Work was done after hours to minimize inconvenience to the tenants and was monitored the next working day to ensure the tenants were unaffected by the changes.

The strategies implemented to main plant components optimized fan and airside control, reducing fan energy, noise levels, and general wear and tear on the plant and equipment. By better managing the airside loads, including the outside air loads, stability was added to the conditioned spaces and chilled water circuits. Attention was given to improving the operating conditions and reliability of the chillers by optimizing the cooling towers and associated water pump operation. Further improvements, primarily control strategies, were incorporated to the chiller staging and load control, markedly improving the respective chillers and overall chilled water systems' efficiency, reliability, and load control sequencing.

The project commissioning and automated control of the system occurred in the last week of March. Evident as per the graph below, such dramatic variations in energy consumption and improvements in climate conditions are an indication of the advances and potential savings that modern control engineering and strategies approaches can produce.

The following building performance improvements were realized:

- Reduced drafts in zone spaces leading to significant reduction of temperature complaints
- Self-optimized airflow management to meet respective zone requirements, achieving tenant satisfaction over a wide range of conditions
- Significant reduction of energy consumption
- Increased utilization of chiller plant to achieve comfort conditions instead of unnecessary fan performance increases
- Tighter control of outside air stream for ventilation requirements leading to indoor condition improvements, including temperature and humidity stability

Chilled water plant control system improvements included:

- Reduced variations in water temperature during light load conditions
- Anticipated load requirements and intelligently staging chillers and plant to meet those conditions in advance
- Minimized the operation of the bypass valve and unnecessary pump energy waste
- Significantly improved chiller reliability during light load conditions

Measurable Improvements:

Energy Savings: $54,024 per year

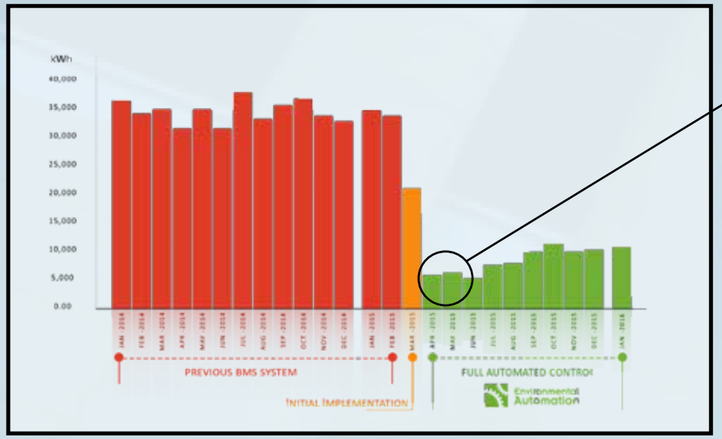
Service Call Reduction: $62,500 per year

Total Operating Cost Reduction: $116,524 per year

Return on Investment: 4 years

Energy Consumption Reduction: 67%

MECHANICAL: Metered Energy (Total) Consumption kWh



The level of energy consumption savings is evident at this point of commissioning.

Environmental Automation

Project Manager: Tony Bojkovski, Sr. Systems Engineer: Steve Sedger, System Engineer: James Giannikos, Pre-works Engineering: Dave Flanagan, Engineering Support/Graphics: Eleanor O'Hagan, Engineering/Commissioning: Danny Yadran, Installation Technicians: Aiden Wells, Artie Alevras, Jesse Collett, Marco Lasogga, Service Technicians: Ben Linder, Marty Da Silva, Rob Canda, Rodney Bates

Bureau of Reclamation

Ephrata, WA, USA

Government

Reliable HVAC Control

The Bureau of Reclamation Ephrata Field Office/Warehouse is a four-storey office building housing government employees who are focused on storing and conveying water and providing infrastructure for agricultural development, flood control, municipal and industrial water, and fish and wildlife enhancement.

Project Details

Reliable Controls Authorized Dealer Skyline Automated Systems Inc., removed the existing control system from this occupied facility and replaced it while working to ensure as little downtime as possible.

The mechanical equipment in the facility includes boilers, cooling towers, circulating glycol pumps, and head pumps. A MACH-ProZone controller with SSL was installed for each of the 29 heat pumps. Another 15 MACH-ProZone controllers were installed to pick up the heat-pump zone return air temperatures, four fresh air fan systems (one per floor), the bathroom exhaust fans, and two humidifiers. Networked hardware includes a MACH-ProWebSys controller with an MS/TP subnet and SSL.

Some of the older heat pumps did not have enough head pressure to actuate their reversing valves, causing compressors to trip on high pressure. Programming through Control-BASIC™ allowed the compressor enough runtime to build up sufficient pressure before switching the reversing valve to cooling. Working closely with the mechanical contractor and management ensured the project was completed in a timely manner.

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

Project Type:
Retrofit

Installation Type:
Boiler, Heatpump, Cooling Tower, Gycol heating loop, Circulating Pumps

Total Area:
4,875 m² (52,474 ft²)

Equipment Installed:
1 MACH-ProWebSys™
1 MACH-ProPoint™
44 MACH-ProZone™
29 SMART-Sensor™
RC-Studio®
RC-Toolkit®
RC-GrafxSet®

Network:
EIA-485, Ethernet

Integration:
SMTP, BACnet®

Total System Points:
255 points

Reliable Controls® Dealer:
Skyline Automated Systems, Inc.

www.reliablecontrols.com