

# NORTH METROPOLITAN TAFE BUILDING AT 25 ABERDEEN STREET

PERTH, WESTERN AUSTRALIA, AUSTRALIA

## INTRODUCTION

The 7-story building at 25 Aberdeen Street at the heart of Perth Cultural Centre is located in the ancient country of the Whadjuk Nyoongar people, who have been the traditional owners of the southwest lands of Western Australia for 45,000 years. The building is part of the [North Metropolitan TAFE](#), the largest TAFE college in the state with 10 campuses in the city and across the northern suburbs.



## PROJECT DETAILS

Reliable Controls Authorized Dealer [BAE Services](#) updated the building automation system at 25 Aberdeen Street during a retrofit project.

The existing building management system had been in place with limited control capabilities since the facility was built in 2005. With the introduction of smarter variable air volume, air-handling unit, and chiller routines, the new Reliable Controls system has significantly improved the facility's energy efficiency and occupant comfort.



## MARKET SEGMENT

Education

## PROJECT TYPE

Retrofit

## INSTALLATION TYPE

HVAC, lighting

## TOTAL AREA

11,000 m<sup>2</sup> (118,403 ft<sup>2</sup>)

## PROTOCOL

BACnet, Modbus, SMTP

## INSTALLED EQUIPMENT

240 MACH-ProAir<sup>™</sup> controllers  
8 MACH-ProCom<sup>™</sup> controller  
2 MACH-ProSys<sup>™</sup> controllers  
1 MACH-ProWebCom<sup>™</sup> controller  
31 MACH-ProZone<sup>™</sup> controllers  
RC-Archive<sup>®</sup> software  
RC-RemoteAccess<sup>®</sup> software  
RC-Studio<sup>®</sup> software  
RC-WebView<sup>®</sup> software

## INTEGRATED EQUIPMENT

ABB variable speed drive, Daikin D-BACS gateway, Danfoss variable speed drive, Carel controllers with PowerPax, Smardt software, and Schneider power meters

## TOTAL SYSTEM OBJECTS

1,730

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BAE Services installed four Reliable Controls software programs as part of the building automation system upgrade. RC-Studio software configured on a local workstation allowed BAE Services to design, develop, and deploy the new system with ease. With RC-RemoteAccess BACnet Secure Network software, BAE Services connected the system to the facility's Azure virtual machine, streamlined IT management, and improved data communications security without additional routers or controllers. RC-WebView, hosted on the virtual machine along with RC-Archive, is configured to host three independent BACnet building control systems at other North Metropolitan TAFE buildings in a single enterprise website. RC-WebView is a browser-based building management solution that combines the power and accountability of enterprise tools with a simple interface. Today facility managers depend on RC-Archive to deliver a robust, dependable record of building performance data with continuous downloads of data logs to a SQL database.

A MACH-ProWebCom controller, a unique combination BACnet Building Controller, BACnet Operator Workstation, and powerful web server, allows building operators to conveniently access and control mechanical equipment over the internet. Eight MACH-ProCom and two MACH-ProSys controllers communicate over BACnet/IP to control gas-fired boilers, water pumps, chillers, cooling tower fans, air-handling units, fan-coil units, exhaust air fans, and outside air fans. With their extensive network routing abilities, highly scalable inputs and outputs, and small size, the MACH-ProCom and MACH-ProSys are fully programmable BACnet Building Controllers that provide an ideal balance between form and function.

BAE installed 240 MACH-ProAir controllers throughout the building, each of which includes an airflow sensor and onboard damper motor. The new variable air volume controllers allow the collection of complex data that inform the control of air-handling units, chilled hot water valves, and fan speed. A trim-and-respond strategy provides energy savings by delivering only the required amount of air to the variable air volume system. Thirty-one fully programmable MACH-ProZone BACnet Building Controllers, ideal for controlling midsize rooftop and heat-pump applications and small mechanical room equipment, provide highly scalable inputs and outputs in a compact package.

BAE Services undertook this retrofit project during full occupancy of the building over a summer period. Planning and scheduling were paramount to reducing any tenant comfort disruptions. BAE Services and Reliable Controls are proud to report energy use in the North Metropolitan TAFE building at 25 Aberdeen Street was reduced by nearly 40 percent during the first year after installation, and ongoing commissioning will help save even more energy in years to come.



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