



How ActronAir and Coles Refrigeration helped Belmont 16s
reduce its HVAC power consumption by 38%.

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Belmont 16s is a modern facility situated on the northern shore of Lake Macquarie.

An audit of their HVAC equipment was conducted in 2013, and it found that the majority of the plant was inefficient, old, and in poor condition. As a result, the club approved a staged HVAC equipment replacement program to run throughout 2015, to coincide with a planned renovation and extension of the club.

The program was commissioned in December 2015, and included the replacement of existing HVAC equipment in the poker machine lounges, coffee shop, bars, and lounges, as well as new equipment installed in the newly constructed areas of the club, specifically the Boat Shed bar and the Bistro Terrace.

ActronAir, in conjunction with the appointed air conditioning contractor Coles Refrigeration and inline with Marline Newcastle's design were engaged to supply the following HVAC systems:

<p>3x Hercules PKV1400</p>  <p>Poker Machine Lounge North Poker Machine Lounge South Sails Bistro</p>	<p>2x Tri-Capacity PKY700T</p>  <p>Star Lounge Bistro Lounge</p>	<p>3x Commercial Ducted SCA340C/SCA340E SCA290C/SCG290E SCA290C/SCG290E</p>  <p>Gaming Area Lakeview Lounge Sails Bistro</p>	<p>1x Classic Ducted SRA260C/SRA260E</p>  <p>Bar Lounge</p>
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In order to assess the impact that updating their HVAC equipment had, it was important to have access to 'apples for apples' comparison data. Belmont 16s commissioned independent energy auditor GJME Energy Management Solutions to monitor the electricity consumption on the site, including specific data for the replacement systems in the existing areas of the club. This allowed Belmont 16s to compare historical data from 2012 through until the replacement program was implemented, with the new performance figures delivered post-installation of the new systems. This gave them a clear understanding of the impact the new HVAC equipment had on their overall energy consumption.

What did the review find?

38% reduction in HVAC consumption for the pre-existing areas of the club

- HVAC now accounts for 46% of the site's energy consumption, down from 50% in 2013. These figures were achieved despite an increased club footprint and longer operating hours.
- 38% reduction in HVAC consumption for the pre-existing areas of the club.
- Power factor at peak demand increased from 0.766 to 0.944 due to the new HVAC equipment.

Reduction in HVAC consumption.

The reduction in HVAC energy consumption in the pre-existing areas of the club has a huge impact on Belmont 16s' overall electricity costs. When compared to the historical costs in 2014 (prior to the renovations) the savings are substantial:

Total Electricity Cost	\$422,005.35
HVAC Electricity Cost in 2014	\$194,122.46
HVAC Electricity Cost once new ActronAir products were installed (38% reduction)	\$120,355.92

The new ActronAir HVAC equipment delivered a **\$73,766.54 saving each year**

But wait, there's more...

The improved performance wasn't only seen in the pre-existing areas of the club that had replacement HVAC equipment installed.

GJME's report also found a number of improvements to Belmont 16s' overall energy performance, including:

Increased Power Factor

For years Belmont 16s has had issues with low power factor, which meant that it was being charged for electricity that it did not use.

GJME's review found that with the new ActronAir air conditioners operational, Belmont 16s' power factor increased from 0.766 to 0.944. This meant that the club reduced its energy costs even further, and **freed up an additional 100 amps of available power by simply updating their HVAC equipment.**

Low Starting Current

With the renovations complete, Belmont 16s increased their building footprint, times of operation, and occupancy, which in turn required additional HVAC equipment. However, because the ActronAir Hercules and Tri-Capacity products only require a low starting current, **Belmont 16s were able to make these increases without having to upgrade their electrical mains**, which would have carried a substantial investment cost – yet another way in which Belmont 16s' decision to invest in upgrading their HVAC equipment with ActronAir products delivered savings to their operations.

Testimonial

"The Actron HVAC units fitted to the Club in 2015 have proven to be all that we had hoped prior to their installation, both in terms of energy efficiency and comfort levels provided and enjoyed by our patrons.

As part of the process we were keen to determine the extent of any saving. As part of our ongoing partnership with GJME Energy Management Solutions, we have logged energy consumption for some years with this giving us the baseline to measure the results following the installation. These have been significant, the units returning a reduction in electrical consumption and peak demand returning an annual saving of over \$70K.

Given this, Actron's service and the units overall performance we have now also replaced the remainder of our HVAC plant servicing our auditorium and are looking forward to realising more savings going forward."

Gordon Maxwell

Operations Manager - Belmont 16 Footers Sailing Club



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