

# How replacing 4 old air conditioners will save the Mingara Recreation Club over \$25,000 a year on their power bills.



Independent data logging has shown that by simply replacing 4 old air conditioning units in their Gaming Area with new, energy efficient ActronAir air conditioners, the Mingara Recreation Club is now enjoying the following improvements:

- **Better energy efficiency:** Energy consumption on the four sub-mains reduced by 202 kWhs a day, a drop of 35%.
- **Better peak performance:** A 12% reduction in demand at peak, which delivers a further savings from Mingara's peak capacity charge.
- **Better gaming area performance:** A 25% reduction in the amount that the Gaming Area contributed to whole-of-site energy consumption, with a 35% reduction in Gaming Area average daily consumption cost.
- **Better when it's hot:** The ActronAir systems delivered the above results in a time frame that was 5.6°C hotter than the conditions the old systems were tested in.
- **Better spare capacity:** The ActronAir systems freed up 22.3 amps per phase at maximum load. The surplus amps can now be used elsewhere, reducing the need for future upgrades to the mains board or the sub-mains board which saves thousands of dollars.

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# Can you really afford to keep your old air conditioning?

Every pub and club is different, but on average Heating, Ventilation and Air Conditioning (HVAC) typically accounts for 40-50% of overall energy consumption at any given venue. This means that if the HVAC system is outdated or inefficient, it can have a tremendous impact on overall operating expenses.

And when it comes to the air conditioning of clubs & pubs, it is often a case of out of sight, out of mind, with systems typically installed in out of the way places. As such, it is very common for the air conditioning systems to be forgotten over time, leading venues to continue using HVAC systems that are long past their use by date.

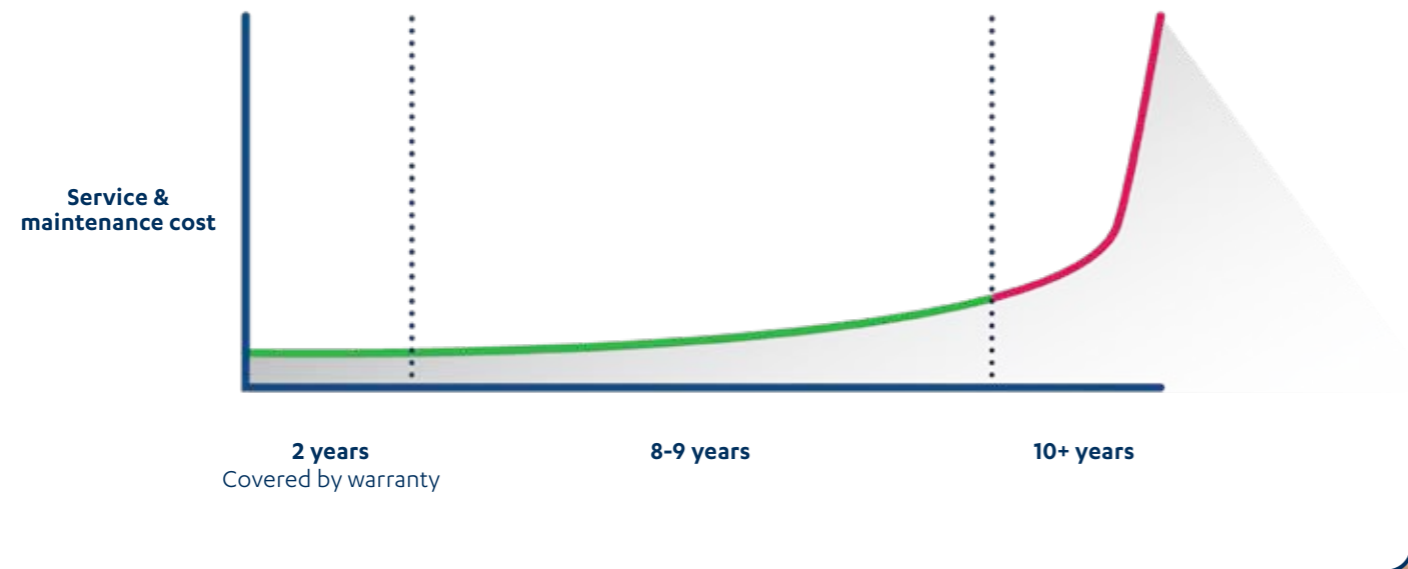
The problem with this is that as they age, HVAC systems tend to break down more often. The fact is that under high load conditions (e.g. extremely hot weather – right when you need them most), older systems are far more likely to fail. Not only that, older systems also tend to have increased servicing and maintenance costs required in order to simply keep them operational.

Furthermore, the HVAC industry is constantly making improvements in the areas of energy efficiency, reliability, and minimising impact on the environment. With advancements made in compressor, fan, and refrigerant technology, the cost savings that these new systems can deliver can pay for themselves in a matter of 3-5 years.

That's why more and more clubs are asking themselves whether it's time to upgrade their HVAC systems and start saving.



Typical Service & Maintenance Usage.



# Life's great at Mingara – now it's more comfortable and energy efficient!

Located in Tumby Umbi in NSW's Central Coast region, since its establishment in 1971 the Mingara Recreation Club has grown into a major destination for the local community, with extensive facilities including:

- 5 Bar Areas
- 4 Restaurants & 1 Café
- Gaming Area
- Events Centre
- Aquatic Centre
- Athletics Centre
- Fitness Centre
- Kids Playhouse
- Physiotherapist facility
- Hair Design Salon
- Beauty Salon
- Australia Post Office

As a major destination of choice for local families to gather and socialise, it's extremely important to Mingara that they consistently contribute to the quality of community life. Part of that vision is ensuring that across their facilities they provide a welcoming and comfortable environment.

With Mingara's facilities drawing extensive use by the local community, the need for reliable air conditioning is a must in order to meet their comfort commitments. And with such a large facility the energy efficient operation of these systems is vital, in order to ensure the club best manages their power bills.

That's why in September of 2017 Mingara made the decision to replace some of their older air conditioning units in their Gaming Area with 4 new ActronAir systems, engaging Precision Air Conditioning for the installation and commissioning. In order to measure the true impact of this update, they also agreed to engage GJME Energy Management Solutions to conduct independent energy testing of the area before and after installation.





# The results speak for themselves.

## Background

GJME were engaged to provide a comparative analysis of consumption details and trends of the 4 air conditioning systems in the Gaming Area of the Mingara Recreation Club, covering both the "Before" period (with the existing, old HVAC systems) and the "After" period (with the new ActronAir systems).

## Method

Temporary data loggers were installed on the 4 sub-mains of the Gaming Area HVAC at the facility (MCC1A), to record the actual 24-hour electrical demand and consumption trends of the existing air conditioning systems (PAC-1, PAC-2, PAC-3 and PAC-4), from 10th June – 27th June 2017 for comparison with data recorded from 25th October – 23rd November 2017 after new ActronAir systems were installed on the same sub-mains.

### Overview of consumption on each unit recorded during the "Before" and "After" periods

Mingara Gaming Air Conditioning Replacement Comparison Overview				
Area	Before (kWh/day)	After (kWh/day)	Percentage change	Increase or decrease
PAC 1 sub-main	35	38	+ 11%	Increase
PAC 2 sub-main	21	18	- 14%	Decline
PAC 3 sub-main	70	45	- 36%	Decline
PAC 4 sub-main	457	280	- 39%	Decline
Total for Gaming	582	380	- 35%	Decline
Site Daily kWhs	14,708	14,510	- 1%	Decline
Gaming units % of site daily kWhs 4% before, 3% after				
On average 202 kWhs less per day during a warmer period (5.6°C higher on average)				

## Findings

Initial analysis of the recorded data from each period indicated the consumption on the 4 sub-mains to have been 202 kWhs (approx. 35%) less per day saving \$31 per day. Encouragingly, this improved performance was delivered in the warmer October-November "After" period, which was an average of 5.6°C warmer than the June "Before" period.

Further analysis of the recorded data in conjunction with whole-of-site consumption information provided by Eutility, indicated that the Gaming Area was responsible for approximately 2.6% of the overall average daily site energy consumption, accounting for \$41/day of the \$1,660/day total site electricity cost. This represented an improvement from the "Before" period, wherein the Gaming Area accounted for approximately 4% of the overall average daily site energy consumption.

Additionally, **the data showed a 12% reduction in demand at peak** from the new ActronAir units, which will result in further savings of approximately \$40/day from Mingara's peak capacity charge.

Finally, the data showed that the maximum recorded demand of each unit during the "Before" and "After" periods indicated a free up of 22.3 amps per phase at maximum load with the ActronAir systems. The surplus amps can now be used elsewhere, reducing the need for future upgrades to the mains board or the sub-mains board which saves thousands of dollars.

**The electricity cost savings combined at Mingara Recreation Club came to a total of \$71/day.**

"Before period"					"After period"				
Mingara Gaming - Electrical Demand Monitoring Recording period 10/06/17 to 27/06/17					Mingara Gaming - Electrical Demand Monitoring Recording period 25/10/17 to 23/11/17				
Proposed	Ave. A Phase	Ave. B Phase	Ave. C Phase	Ave. Total	Proposed	Ave. A Phase	Ave. B Phase	Ave. C Phase	Ave. Total
<b>PAC 1</b>	38	37	36	111	<b>PAC 1</b>	38	37	34	110
Protective device	100	100	100	300	Protective device	100	100	100	300
Spare capacity	62%	63%	64%	63%	Spare capacity	62%	63%	66%	63%
Spare amps	62	63	64	189	Spare amps	62	63	66	190
<b>PAC 2</b>	31	30	29	90	<b>PAC 2</b>	30	29	30	90
Protective device	100	100	100	300	Protective device	100	100	100	300
Spare capacity	69%	70%	71%	70%	Spare capacity	70%	71%	70%	70%
Spare amps	69	70	71	210	Spare amps	70	71	70	210
<b>PAC 3</b>	47	46	47	140	<b>PAC 3</b>	44	47	46	137
Protective device	100	100	100	300	Protective device	100	100	100	300
Spare capacity	53%	54%	53%	53%	Spare capacity	56%	53%	54%	54%
Spare amps	53	54	53	160	Spare amps	56	53	54	163
<b>PAC 4</b>	82	62	64	208	<b>PAC 4</b>	49	49	47	145
Protective device	100	100	100	300	Protective device	100	100	100	300
Spare capacity	18%	38%	36%	31%	Spare capacity	51%	51%	53%	52%
Spare amps	18	38	36	92	Spare amps	51	51	53	155



# Don't just take our word for it.



"We recently engaged the services of Precision Air Conditioning to replace 4 old packaged units with 4 new ActronAir Tri-Capacity packaged units in the Gaming Area of the Mingara Recreation Club.

We wanted ActronAir systems due to the projected energy savings that the Tri-Capacity technology would deliver, the superior ambient operating temperature rating of +50°C, the fact they were locally designed and manufactured, and the extended manufacturer's warranty that ActronAir provided.

We are very pleased with the results of the data logging, showing that the new ActronAir systems were performing substantially more energy efficiently than the old systems they replaced. We have achieved a 35% reduction in our energy usage, which delivered us a substantial saving in energy operational costs.

Furthermore, the new ActronAir units have performed very well in some recent extreme heat. In fact, on a recent 44°C day the ActronAir systems were able to consistently maintain an indoor air temperature of 22°C, providing our members with substantial relief.

I would not hesitate to recommend ActronAir to any Club looking to upgrade their air conditioning systems."

**Tim Sutherland**  
Building Services Manager – Mingara Leisure Group



"We prefer to use ActronAir systems for a number of reasons.

Firstly, they have a great track record in delivering energy efficient performance for our customers, saving them on their energy bills for years to come.

Secondly, they are extremely reliable – when we put an ActronAir system in, we do so with confidence that it will do a good job for our client, even when it gets extremely hot. The comfort that comes from ActronAir offering an extended Manufacturer's warranty means we know the systems will be supported long after they're installed.

Finally, ActronAir being based here in Australia means they offer the best support in the business, with fast access to spare parts, the ability to talk to someone who understands our climate and conditions, and a great service network for ongoing support.

We recommend ActronAir to any pub or club considering updating their old air conditioning systems."

**Jason Cashin**  
Managing Director - Precision Air Conditioning

# Why choose ActronAir?

In order to make the best decision possible, when selecting your air conditioning solution there are a number of factors to consider:

## 1. The Products

- Are they energy efficient?
- How reliable are they?
- Have they got the right product types for me to choose from?

ActronAir's award winning product range spans from 2.5kW wall split units to 196kW packaged units and everything in between. This wide range ensures that you will be able to find the right solution for your specific needs, and you can take comfort in our hard earned reputation for energy efficient and reliable performance.



## 2. The Manufacturer

- Where are they based?
- Have they got a good reputation?
- Will they provide quality service support?

ActronAir is Australia's largest locally owned manufacturer, proudly designing and manufacturing systems right here in Australia. With over 30 years of experience, we also know how important service and support is. Our National Service Network has service staff on the ground and parts on the shelves, ensuring you'll never have to wait long for assistance. They're friendly, reliable, and prompt, earning us a reputation for providing industry leading support. And best of all, our 2 year manufacturer's warranty will keep you comfortable with absolute peace of mind.





**ActronAir**

*That's better. That's Actron.*

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