

Queensland Health Bohle Distribution Centre



How a high-tech warehouse cut electricity consumption by 31%*

The Queensland Health (QH) centre at Bohle is a pivotal storage facility for distributing medical goods across North Queensland.

To protect the integrity of the products and increase their shelf life, it became necessary to air condition the warehouse—

a challenging exercise in a tropical climate.

QH has achieved their objectives and the facility now has vastly improved air quality and working conditions at a fraction of projected costs, allowing plans to introduce a second work shift to proceed.

Savings Snapshot

How this distribution centre became a high-quality facility



Lights

LED hi-bay fittings replaced existing lighting



Skylights

Reduced reliance on electric lighting



Air conditioning

Installed an air-cooled chilled water thermal energy system



Switchboard

Installed to have a standby generator connected in case of mains power interruption



Insulation

Earthing systems were upgraded

“The installation has provided an energy-efficient solution that has enabled a clean room environment for the storage of clinical inventory and a more pleasant workspace for staff.”
Wayne Nuske, Supply Manager.

Queensland Health
Bohle cut electricity
consumption by

31%*

*energy savings shown are from an independent auditor's measurement and verification, report conducted in 2010

Money Saving Choices



Innovative solutions for a cooler, cleaner environment.

A small scale air-cooled chilled water thermal energy system was installed. Its design responds to local climatic data, dehumidifies the air and provides a positive building pressure preventing dust and odours from entering the building. The central chiller plant now operates from 6pm to 6am to lower the temperature of reticulated water to about 6°C in four 28 litre tanks. Cooled air is circulated via a fabric duct hung below the ceiling.

A battery allows this cooling system to be de-coupled from the process plant so power demand profiles can be manipulated. The large doors to the despatch areas are sealed with an electric shutter that prevents cool air escaping.



An investment that pays all day. And every night.

QH made a considerable investment to achieve this electricity demand reduction. However, the savings that it now generates are considerable—115kVA during the day, and 32kVA at night—verified by an independent auditor. It means the cost will be recovered in under 3.5 years, and savings beyond.



A challenging situation in a harsh climate.

The facility comprises a bulk storage warehouse and office space—a total of about 4,400 square metres. The sensitive nature of products stored require the warehouse to be cooled to around 25°C. The office area used fluorescent lighting and a stand-alone 30kW air conditioner as well as kitchen appliances.

To simply add traditional air conditioning to the warehouse would have resulted in daytime operating demand of 140kVA—too expensive and environmentally unsustainable. An energy audit was undertaken and solutions were developed.



Above: The hi-bay lighting automatically switches off when there is adequate natural light penetration through the warehouse skylights.

Your turn

Go to “Save on your bill” at ergon.com.au/your-business to help you choose an energy efficiency consultant and take the first step towards reducing your energy costs.

