

Studies in success



IGA San Remo - Finalist Best HVAC&R Retrofit or Upgrade 2015



SAN REMO **IGA** plus LIQUOR

IGA San Remo First Place -
Environment and Sustainability Bass Coast
Business Awards 2015

At a glance...

The Business Need:

A refrigeration system that is efficient, reliable and has a minimal carbon footprint compared with conventional refrigeration systems.

The Solution:

Kirby NxGen Parallel Rack System (Hybrid CO₂ / R134a Combo system), CO₂ [R744] (L/T - Freezers) / R134a (M/T - Coolers)

Kirby WRC EC AxiTop™ Condenser

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The San Remo IGA refurbishment project was driven by the need to deliver a reliable and energy efficient solution whilst taking into consideration the total cost of ownership.

Whilst this would seem simple with an unlimited budget and physical space, there were both financial, space and environmental constraints at the site to consider and the need for a custom solution was identified and delivered in a collaborative approach by all parties involved.

The Solution

Heatcraft Australia collaborated with Refrigeration Innovations, MB Refrigeration and Emerson Climate Technologies to design a unique Kirby Refrigeration Rack System that met all of the clients expectations.

The solution has pioneered new ground in the development of parallel CO₂ / HFC Combo Systems at Heatcraft Australia and the installation work completed by MB refrigeration has set a new course for innovative CO₂ refrigeration technology in supermarket refurbishments.

In order to deliver the project in time for the peak Christmas rush, it was decided that an all in one Hybrid Combo Rack option would enable contractors, MB Refrigeration to bring the first stage, being the meat, deli and dairy areas on line first. As the low temperature section was the last stage, the CO₂ was 'system ready' for line connection. The move to CO₂ was in line with a conscious decision taken by the store owners to be good environmental citizens.



MB Refrigeration exceeded IGA's expectations through the entire project.

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Environmental Considerations

Part of the constraints on the project, was the store being located next to a caravan park. The local council wanted to see a reduction in noise levels. Although the plant would be contained within the building, the Kirby Rack was developed with compressor soundshells on the R134a medium temperature Copeland Stream Compressors with excellent results.

The Kirby WRC EC AxiTop™ Condenser contributed further to noise reductions and energy savings. The condenser features the latest in fan technology from ebm-papst and has some of the lowest recordable noise data of any condenser in the Australian market.

Incorporating VSD drive technology further benefitted energy consumption and the noise levels of the fans, even at high speed through summer.

This technology was a significant improvement on the existing plant which included a mixture of unitary equipment, some old open drive compressors and semi-hermetic packaged units spread across the roof area on a variety of different refrigerants.

Project partner, Refrigeration Innovations measured the sound level at the building roof top perimeter and found it well within the council levels at 50dB(A).

The Results

IGA Owners have been extremely pleased with the energy savings



The Kirby Rack system designed and manufactured for IGA is an excellent example of the design and innovation capability available through Heatcraft Australia.

achieved. This has been apparent through the use of the CO₂ scroll and HFC stream compressors which in operation exceeded original energy efficiency predictions.

The store energy bill is now lower than that of a comparable size store to the degree of \$6000 p/m.

This can be also attributed to the inclusion of the store heating being made available by the waste heat from the refrigeration system. The refrigeration system is fully integrated into the store heating with the use of heat reclaim coils.

IGA San Remo owner, Matt Synan, commented;

"We took a total store approach with this upgrade. We looked at every aspect of the project to see where we could make energy efficiency gains and, where possible, took them on board. This included the use of variable speed drives, a heat reclaim system, using waste heat

off the refrigeration to heat the store and state of the art energy efficient refrigeration units."

"Furthermore, we didn't lose a single hour of trade due to downtime, throughout the seven month renovation and upgrade."

For an innovative and energy efficient solution on your next project, speak with your Heatcraft representative on 13 23 50.

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