



## SELECTED TECHNICAL SPECIFICATIONS

- ▶ 90 kW cold storage capacity at -20°C.
- ▶ 250 kW medium-temperature capacity.
- ▶ Unique pumped DX CO<sub>2</sub> circuit.
- ▶ Unique over-pressurisation control for CO<sub>2</sub> receiver.
- ▶ Unique CO<sub>2</sub> suction superheating concept.
- ▶ Solar power integration and load shedding.
- ▶ Single fluid reticulation across multiple temperature levels.

### ABOVE

The NH<sub>3</sub>-CO<sub>2</sub> cascade system encompasses a GEA Grasso Duo high-side ammonia compressor package; a booster CO<sub>2</sub> compressor rack fitted with GEA Bock compressors; and Witt CO<sub>2</sub> liquid pumps.

“We convinced Fung Lea to use water-cooled ammonia for the high side of the cascade for improved energy efficiency, improved service life, and lower total cost of ownership.”

— Mack Hajjar, Tri Tech Refrigeration Australia

The system overall, “is a cost-effective solution for intermediate-size plants that are too small for full-scale ammonia, and too large for Freon,” Hajjar argues.

“It’s an appropriate trade-off between efficiency and cost whilst remaining natural refrigerant-based. It eliminates ammonia from the field, can be scaled up or down, and is entirely appropriate for supermarket applications,” he asserts.

Using a CO<sub>2</sub> rack with only minimal additional features helps to improve the cost effectiveness of the Fung Lea system still further.

With appropriate modifications, the system can generate hot water by virtue of its heat pump and heat recovery functions. It can also be containerised, reducing the footprint of the plant room.

Given that the system was only commissioned in January, a full set of operating performance data is still being acquired.

Yet based on observed operation and power draw, “we expect the energy consumption of the freezer to be approximately 40% that of a similar air-cooled conventional Freon-based installation,” Hajjar predicts.

■ AW & CR