

Case Study

Gemelle Ristorante Italiano

Refrigerant System Review

MINUS40

www.minus40.com.au

P: (02) 8850 4811



Gemelle Ristorante Italiano was suffering refrigerant leakage of several kilos per week, leading to reduced performance of the refrigeration equipment and ongoing cost of replacing the refrigerant. With much of the reticulation sealed in concrete, there was no way to identify the leakage site and maintain the system properly.

Located in Liverpool NSW, Gemelle has seating for up to 180 guests, with multiple cool rooms, freezer rooms, refrigerators and beverage coolers. With each load connected to the single main suction pipe, there was no opportunity to take a single unit offline without risking the entire stock of meat and seafood.

System review

Minus40 was engaged by Gemelle to conduct a technical review of the refrigeration system, including component and equipment, piping reticulation, as well as control system and electrical connections. The system consists of two identical compressor racks and two identical air cooled condensers, one for the low temperature system (freezer rooms) and one for the medium temperature system (upright and under-bench refrigerators and cool rooms).

The review quickly identified limitations of the system, such as risky dependence on a single

suction line and inaccessible pipes. The low-temperature rack was also found to be working outside its operating limits, which risks early failure and high maintenance cost.

System improvements

Based on the review, Minus40 proposed new piping reticulation for Gemelle. This included the design of a liquid and suction header for each rack, and individual suction and liquid pipes for each load. All of the new pipework has been routed through ceiling cavities and wall spaces so it can be accessed for repairs if necessary.

The new piping was installed in January 2015, with the system immediately providing improved performance and reliability. The review also recommended liquid injection and liquid sub-cooling to provide relief for the low-temperature rack.

“The new design has been more reliable and gives us steady savings on the cost of refrigerant” said site owner Sam Sofi.

