

# Complete Refrigeration System from LU-VE for Two Specialty Retailers

**David Goodwin**

The emergence of specialty retailers in Melbourne's suburbs can be attributed to changes in lifestyle and eating habits influenced, in part, by migrant settlers.

More recently, increasing interest rates have forced families in mortgage belt areas to seek fresh food and produce in bulk.

These retailers, like the larger supermarkets, still need well made, dependable and energy efficient refrigeration equipment. LU-VE Contardo Pacific's Managing Director, John Mignano, told *Celsius* that because LU-VE was now the Australian distributor for Italian manufacturer De Rigo, who make merchandise display cases, he can now offer complete refrigeration turn-key solutions.



DeVine Quality Meats in Melbourne's inner suburban of Northcote is both butcher and delicatessen

One of the contractors servicing these specialised retailers is Jos Jeanne of M&J Refrigeration. Jos has 20 years in the business and eight years running his own business. In the March issue M&J Refrigeration's, Jos tackled a large fresh food market at Melton. In this issue Jos installed a refrigeration system for a combined delicatessen and butcher shop as well as a fresh food and produce market catering for the five major food groups in outer Melbourne.

## Refrigeration Challenges at DeVine Quality Meats

At a shopping centre in the Melbourne suburb of Northcote, seven kilometres north east of the CBD, DeVine Quality Meats recently opened for business. It's one of the new hybrid retailers springing up in Melbourne which is part butcher and part delicatessen.

Its owner Nick Divenere has been in retailing 23 years. He told *Celsius* Northcote didn't have a delicatessen or butcher's shop in that particular area so he decided to set up a shop combining the two, modelled on a larger store he had in Melbourne.

"A friend of mine introduced me to Jos Jeanne. He had the best price and the best product with LU-VE equipment with their new Hitec condensing unit and the De Rigo Roatan display cases."



The De Rigo Roatan model deli case with processed meat and salted cod

Nick needed to set up a shop quickly and started planning the project towards the end of 2007, organising the lease of the property in the Northcote shopping centre. He asked Jos what he could do in a confined area. "The coolrooms were being built by another company and we were able to complete the refrigeration of these in three weeks from quote to finish," Jos said.

## The New De Rigo Merchandise Display Cases

LU-VE can now supply merchandise wall cabinets for hypermarkets, fresh food and produce markets, supermarkets and environmentally friendly CO<sub>2</sub> applications, according to John. "The display case units include: traditional island cases and pack systems and cabinets from De Rigo of Italy. Refrigeration contractors like M&J Refrigeration can count on more than just condensers and evaporators from us in the future and buy a complete refrigeration package either direct from LU-VE or through its network of distributors throughout Australia," John said.

"This empowers the refrigeration contractor to offer the complete package as in many cases companies sell directly to the end user."

According to Jos Jeanne, one of the goods things about the new merchandise cases from De Rigo, compared to its local competitors, was the installation time was much faster. "There is a minimum amount of trimming to be done to the cases so once you put in your locating pins and bolt it together the whole thing lines up very well. A lot of the cases have accessories and trimmings to be added to the joins because they are not quite perfect.

The De Rigo cases come with the trimming and are fully prefabricated. You just put in the locating pins and bolt it together and that's it. The piping-up of the refrigerant in De Rigo cases is quite easy.

For a delicatessen the De Rigo the Roatan model was selected. "It has a much wider 900 mm width internal tray on display case for extra product. For the same price as the Roatan the competitor's product is only 780 to 800 mm.

"The other good thing with the Roatan model is they have double-rows of display lights on top. It is an advantage that enhances the look of the product. The Roatan cases have an electric defrost so you can run a much lower temperature than other cases and won't ice up as easily. Most of the deli cases have a normal defrost sequence. When they go on defrost they just shut the refrigeration down so fan assisted air can circulate and defrost the unit," Jos explained.

"Even if the Roatan cases run at a lower temperature we can still achieve a defrost without unit shut-down, despite the air temperature inside being around 0° to 1°C.

"The cases came pre-wired and all the electronics and the heater fans are separately fused. If there is a problem with the heaters or the fan motor it doesn't blow the controller," he emphasised.



The defrost silicon strip is just behind the curved glass at the front of the Roatan display case

"The under storage compartment is very big, compared to other makes and on the with Roatan there is an anti-mist glass which will allow a lower temperature without fogging. In a lot of cases there is a fan underneath the unit that blows on the glass to keep it clear but the down-side is you have all this dust blowing up onto the glass all the time so the base of the case needs to be constantly wiped clean.

"With the Roatan there is silicon rubber strip that transfers heat through the rubber to the base of the glass so you don't have a problem with condensation.

"The other advantage with the Roatan cases is when you install a full line of cases, if one case goes onto defrost how are you going to get the other case to go into defrost at the same time? With the Dixcell controller on each of these cases they are equipped with a lead, master and a slave arrangement.



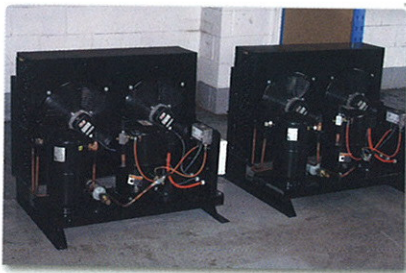
Two little wires go from one controller to the next and even though temperature control is handled by each of the units, you can control and activate the common defrost throughout all, even though they are individual cases.

The temperature of the case can range from -2°C to 4°C depending on what you are storing in it. Nick Divenere the owner confirmed that the controller was easy to operate.

New LU-VE Hitec Condensing Units are Manufactured in Australia.

There are two LU-VE Hitec CS20 Condensing units at DeVine Quality Meats.

John Mignano told *Celsius* he had the new units designed in 2007. Wholesaler distributors like David Day of Temperature Solutions in Frankston influenced the design of the new unit. "We are now stepping up our manufacturing of the Hitec units in Melbourne with an experienced refrigeration contractor doing the fabrication and assembly.



Two Hitec Condensing units

"The industry wanted 'plug and play' with all the wiring in one electrical box so you connect up your power and off you go. We provide you with one HP/LP but you can easily fit two because there is space for two to control your head pressure. Each condenser comes with two Elco fans and the design is good for high ambient conditions.

It's a very good coolroom or freezer room unit," Mignano added.

"Price wise it's very competitive. We have added extras like a site glass and drier as an option.

"You have a choice of Copeland or Maneurop reciprocating compressors. In the case of DeVine Meats there are two hermetic Copeland reciprocating compressors, both for medium temperature.

The coil comes from a company called HTS - a LU-VE owned company specialising in OEM coils.

There are two condensing units. One is for the two coolrooms and the other is for the cases. "The reason I used two condensers was because the display cases were rated to -10°C saturated suction and the coolrooms were rated to -5°C saturated suction. It would be useless to get one unit rated all the way down to -10°C. The refrigerant is R404A," Jos said.

#### The TGD Fridge Doors

The Thermo Glass Doors (TGD) present the product very well and are staff-friendly, according to John Mignano

who is also the Australian distributor for TGD, a company owned by the LU-VE Group's chairman, Mr Ingenio Liberali.

"The door frames are one-piece, factory wired and 1800 mm high by 795 mm wide. They are a modular system and can be easily removed from the frame.



The three TGD doors with top and side mullion illumination

"Lighting is built into the top and side mullions with electronic ballast, and fast switch-on. There is a 90° opening lock so doors can't be left open by the staff charged with loading the fridge," Mignano said.

"Because the TGD doors are well lit it improves the presentation of the product."

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FEATURE ON SPECIALISED RETAIL REFRIGERATION



**Australian Government**

Department of the Environment, Water, Heritage and the Arts



## Discussion paper for public comment and announcement of public meeting Proposed amendments to the refrigeration and air conditioning aspects of the Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995

The Australian Government Department of the Environment, Water, Heritage and the Arts regularly engages various sectors of the refrigeration and air conditioning (RAC) industry to ensure that the regulations and the RAC licensing scheme are working effectively both for the environment and for industry.

A discussion paper "Refrigeration and Air Conditioning aspects of the Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995" has been prepared and is now available for public comment. The paper deals with issues such as the rules for licence and authorisation holders, industry standards, the operation of the Australian Refrigeration Council and potential amendments to the regulations.

A copy of the discussion paper is available on the department's web site at <http://www.environment.gov.au/atmosphere/ozone/rac/consultation.html> or by contacting the department by email at [rac@environment.gov.au](mailto:rac@environment.gov.au) or on 1800 803 772.

Please send your comments to:

Ozone and Synthetic Gas Team  
Department of the Environment, Water, Heritage and the Arts  
GPO Box 787  
CANBERRA ACT 2601

Comments must be provided in writing and received at the department no later than **Friday 16 May 2008, 5pm Canberra time.**

A series of public meetings to seek feedback on the issues raised in the discussion paper will be held in capital cities and selected regional centres. More information on the public meetings is available from the website above, by emailing [rac@environment.gov.au](mailto:rac@environment.gov.au) or calling (02) 6275 9002.

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### The Unit Cooler Evaporators

There are two coolrooms and each has a three fan 4 kW LU-VE S2HC 107 N50, accessed by staff by opening any one of three TGD glass doors. This contains trays of stock for the Roatan cases and kept at a constant 2°C

"The characteristics that distinguish the new LU-VE S2CH Super Unit Coolers are their compact energy efficiency, efficient heat exchanger, reduced dehumidification frost formation, increased air throw, greatly reduced internal volume, low noise levels,



The LU-VE 34 kW S2HC107 N50 Unit cooler in the coolroom behind the TGD doors

energy consumption and compact overall dimensions," John said.

### Conclusion

The refrigeration system is running well and Nick Divenere is very pleased with the performance of the refrigeration equipment in the coolrooms and the new De Rigo Roatan delicatessen and meat display cases look great and are working well.

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## The Lakes Fresh Food Market Fulfils the Lifetime Dream of Its Owners

**David Goodwin**

The next challenge for M&J Refrigeration was the installation of a complete refrigeration system at a fresh food and produce market at Taylor's Lakes, north west of Melbourne. It is owned by Stephano Umbrella and Fortunato (Lucky) De Agistivno who has been in fruit and vegetable business for more than 35 years.



The Taylor's Lakes Fresh Food Market just before opening in April 2008

Stephano is a chef by trade and told Celsius that being a chef he always enjoyed getting smiles from his customers when he pleased them with his cooking. "I tried different businesses in my life. I had a restaurant and later a gelateria icecream parlour which I learnt about while overseas. I first came to the Taylor's Lakes area in Melbourne to set up my gelato business seven years ago."

When Stephano was not doing so well in the colder months of the year and worrying how he was going to survive, just across the road was a fruit and vegetable shop which was

always busy. "That was to me the best type of business – a necessity business – catering for people from all different ethnic backgrounds," he said enthusiastically.

"The customers were not after a treat like a gelato, they were in the shop buying the essentials of life – fresh fruit and vegetables. I had an idea – what if I set up a store with the five major food groups, all under one roof – a one-stop shopping experience.

"Taylor's Lakes is one of the biggest mortgage belt growth areas of Melbourne and at least 30 km from the Melbourne CBD. Population wise it's growing all the time.

"My vision was to set up the market based on volume sales and good quality fresh food at economical prices to cater for the needs of the local population," Stephano said.



The two De Rigo LAWAN dairy and meat case units with fresh food and vegetable island displays in front of the freezer display cases with TGD doors.

Stephano came up with a concept and drew all the original plans on computer which took three months. He then approached the landlord, one of his old customers from his restaurant days, and told him all about his idea. "the landlord, a builder, agreed to build the food market. The floor space is around 800 m<sup>2</sup>

I have only known John Mignano a short time. He is a very nice man and very helpful supplying all the refrigeration equipment and helping with the project. John introduced me to the De Rigo Roatan deli display cases and Lawan dairy and processed meat cases. I called Joss Jeanne at M&J and gave them a deadline of six weeks to complete the project.

### Modern Delicatessen Display Cases and Dairy Cases

According to Stephano the 15 m De Rigo Roatan deli display case caters for the needs of the ethnic population in the area with a variety of local and imported cheeses, nuts, processed meats, poultry and fish. We will also cater for functions and parties in this section," he said.



The large 15 m De Rigo Roatan delicatessen display case. The deli coolroom is at the other end of this display

There are two Lawan display cases, said John. "They have a strong robust frame with a bump rail for transportation. Each unit has its own Dixcell temperature controllers like the Roatan delicatessen cases. The cases are suitable for



processed meat display and dairy applications. They have single and double air flow at the top of the unit. The drain pipe is accessible for under the base fan assembly. The piping of the expansion valve is included. Each of the units are illuminated by rows of bright canopy lights.



An example of how the Lawan display case will look like when the project is completed with processed meat and dairy products

### The Coolrooms and LU-VE Unit Cooler Evaporators

There are three coolrooms and one freezer room at the Lakes Fresh Food Market, according to Jos. "The biggest coolroom is for storing the fruit and vegetables is 10 m x 8 m wide x 4.4 m high with two 16 kW S3HC 430 N50s. There is a delicatessen coolroom 3.6 m x 3.6 m with a 6.3 kW LU-VE S3HC 145 N50 and a six glass door freezer case with a new hitec LU-VE 8 kW SMA 242 at -24°C. A 3.6 x 4 m x 3.2 m high coolroom contains a LU-VE 8 kW SCH3 215. The 4.4 x 4.4 x 2.4 m high ripening room has a LU-VE S3HC 215 N50 unit cooler."



The smaller ripening coolroom next door to the main produce storage coolroom

Similar to the Melton fresh Food Market project in March *Celsius*, LU-VE and M&J Refrigeration selected the various models for the project based on the size of the room and these have certain features in common, according to John.

"The combination of ripple finned tube and "Turbofin" has been optimised to give good heat exchange coefficient.

"Our hitec LU-VE Unit Coolers have low motor consumption, reduction of internal circuit volume and refrigerant volume and overall dimensions reduced," John said.

"High performance and low energy consumption fan motors are lubricated

for life and thermally protected. Steel galvanised casing on each unit cooler has epoxy-polyester powder coating for corrosion resistance.

"Other features include: reduced dehumidification; reduced frost formation; increased air throw; greatly reduced internal volume; low noise levels; low energy consumption and very compact overall dimensions."

### New Hitec Freezer Case Unit Cooler

The freezer case unit cooler is one of the most advanced designs to come out of Italy in recent years. It was amongst the new products released during IKK 2006. In January 2007 Area Manager for the LU-VE Group, Aldo Crepaldi told *Celsius* the BMA and SMA units were the first to have a galvanized-steel casing, powder coated for durability.



The new LU-VE unit cooler within the freezer case behind the TGD doors is a hitec LU-VE 8 kW SMA 242

"It has the inclusion of a bigger fan motor with high efficiency and low consumption. The smaller diameter copper tubes have been developed for the new refrigerants, according to Aldo. The 'Jet-O-Matic' Distributor and refrigerant circuits were optimised to ensure the maximum efficiency of the heat exchanger," Aldo said.

"The fan shrouds and grille is where special attention has been given to the airflow path to ensure dynamic air-flow through the coil. The Turbocoil 2 Heat Exchanger has a high ratio of capacity to cost with new aluminium high efficiency fins with special turbulence for reducing dehumidification and frost formation.



The main produce coolroom with two 16 kW LU-VE S3HC 430 N50 Unit Coolers

"The unit has electric defrost with a stainless steel electric heater element allowing quick and efficient defrost. Like all the other LU-VE Unit Coolers the SMA model has very compact

dimensions and reduced internal volume."

### The Compressors and Condenser Units

The compressors for the project were manufactured by Meneurop, according to Jos. "It is a combination rack with one low temp Maneurop MTZ 88 Compressors and three medium temperature temp Maneurop MTZ 160 Compressors. These are very good compressors and the right price range for the project.



Three 23 kW MTZ 160 Maneurop reciprocation compressors

"The condensers are two SHVN 110 kW, which with the compressors is a sizeable plant. We needed a VSD (variable speed drive) to control the head pressure on the unit. The refrigerant selected is R404A."



The two 110 kW LU-VE SHVN 110 condensers

### Conclusion

The project was nearing completion and had yet to open when *Celsius* visited earlier this month. All the units at that time were running at the right temperature but the fresh food and produce had not yet arrived.

For the May issue we will report on progress following the opening of the Lakes Fresh Food Market.

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