

ENGINEERING
TOMORROW

Danfoss

Case Story | Gibson's Farm Shop

Gibson's Farm Shop achieves over **20% energy saving** with **Optyma™ Plus INVERTER**

The growing store added new refrigeration capacity – and still saw energy bills fall – after replacing two condensing units with a single adaptive package.



HIGHLIGHTS

- Over 20% energy savings
- Low refrigerant charge and installation costs
- Optimised food safety and preservation
- Part-load efficiency

For more than 50 years, the Gibson family has provided the Canterbury area with high-quality, handmade and locally-sourced food. The business started selling apples and pears fresh from the farm and, as its reputation spread, grew into a purpose-built farm shop.

The family's ambition did not end there. The farm shop recently expanded further, adding a deli, bakery, and coffee shop, and acting as a storefront for Kent's finest food producers.

The project demanded extra refrigeration capacity – and presented the opportunity to review and upgrade the shop's existing cooling equipment. The company turned to its longstanding supplier, Cold-Air Refrigeration Ltd.

The challenge: increase refrigeration capacity, but reduce running costs

Since 2010, the farm shop's three display cases had been connected to two outdoor condensing units, with conventional fixed-speed compressors and fin-and-tube condensers.

These units, from the Danfoss Optyma™ bare range, had served the shop well – but the Gibson family were eager to take advantage of new technology to save energy consumption.

The shop's new, larger cases totalled 7.5m with 8 kW of cooling capacity. Cold-Air managing director David Eldridge knew that technologies – like microchannel heat exchangers and inverter scroll compressors – presented the opportunity to make significant energy savings, while also reducing refrigerant charge.

David said: "This was an ideal site for Cold-Air's first Optyma™ **Plus INVERTER** installation – with the opportunity to closely monitor its setup and performance. It's highly efficient, and it made the installation easier to integrate."



The solution: replace two units with one **Optyma™ Plus INVERTER**

David used the Danfoss Coolselector® 2 calculation and selection tool, to compare annual energy consumption for a single Optyma™ **Plus INVERTER**, against two conventional condensing units.

He found that, over a year's cycle, the inverter scroll unit would offer a significant benefit, because its stepless variable speed compressor adapts to the required cooling capacity – saving energy under part load conditions, and from switching on and off.

The unit's microchannel heat exchanger further increases efficiency, while reducing refrigerant charge. And it's all achievable within the proven Optyma™ product line the company has come to trust.

David performed the calculations using R449A refrigerant, as an alternative to the banned R404A. And he specified that the new cabinets should be fitted with Danfoss TE2 expansion valves, for ease of maintenance and installation.

He explains: "We recommend Danfoss products for their recognised quality. I use Coolselector all the time to perform calculations and select the right products. I find it easy to use, with accurate information and plenty of components to choose from."

The result: Over 20% energy saving, and maximum food quality

Since switching to the Optyma™ **Plus INVERTER**, Gibson's Farm Shop is using over 20% less electricity. And its simple, plug-and-play format and low refrigerant charge helped to keep installation costs down too.

More importantly, the unit has proven 100% reliable – keeping the food at a constant temperature so it's always in the best condition for the shop's discerning customers. Fittingly, this includes local fresh fruit – the same high quality produce that made the shop's name some 50 years ago.

Indeed, the Gibson family have gone one step further. Using Danfoss Prosa IoT enabler, Cold-Air can now proactively monitor temperature through the ProsaLink app, to maximise food safety at all times.

Having already supported the business for so much of its journey, we're delighted to see that both David and Danfoss refrigeration technology look set to continue serving Gibson's Farm Shop and its customers for years to come.

Danfoss products used:

- Optyma™ **Plus INVERTER**
- TE2 expansion valves
- PR-SC4 Direct IoT enabler paired with ProsaLink app
- Download Coolselector® 2 to select the products at coolselector.danfoss.com



For further information, or to talk about your own project, please contact:

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