

# Fresh is berry best

Renowned strawberry grower McMartin's Farm on the Sunshine Coast recently installed new refrigeration and cooling equipment to keep its produce in top shape come production time. Carly Fordred finds out more.



*McMartin's Farm*

The Sunshine Coast is a unique place, and renowned as one of Queensland's best coastal strips. It stretches 65 kilometres from Caloundra and extends north to Noosa, featuring pristine sandy beaches, lush hinterland and rainforest.

Also nestled in among the beauty that is the Sunshine Coast is a regional fresh produce industry, owing its viability to the region's high number of fresh fruit and vegetable farms.

One fresh fruit that blossoms in the area due to its unique warmer/sub-tropical climate is the humble strawberry.

A staple of the region, the strawberry is worth about \$150 million to the regional economy. In fact, the strawberry industry in Queensland represents the highest percentage of Australia's strawberry production.

On a global scale, Australia is not the largest producer of strawberries. That title goes to the US, Spain and Japan; however, Australia moves higher up the table in terms of production efficiency. This is driven by factors such as varieties that taste better, effective marketing by growers and improved cool-chain management.

There are a number of strawberry farms dotted along the Sunshine Coast, including McMartin's Farm, which is located outside of Bli Bli, in the Maroochy region.

The owners of the farm, the McMartin family, have been involved in growing strawberries on the

Sunshine Coast for the past 40 years. From the end of May to mid-October, McMartin's Farm is open seven days a week to the general public, offering strawberries, home-made gourmet ice creams and jams. McMartin's also allow visitors to pick their own berries straight from the fields.

To enrich its production process and cold-chain management, McMartin's Farm recently undertook

an overhaul of its refrigeration and cooling equipment.

Obviously, strawberries are big business for the farm and for the region. This explains why the farm needs to keep its harvest in the best possible refrigerated environment.

Keeping McMartin's Farm's strawberries in this condition has involved a co-operative approach between local refrigeration manufacturers and installers.

The farm recently installed three new cool rooms – crucial to its post-harvest cooling and packaging process. These are a cooling room, featuring a blast chiller to cool the berries; a preparation room to hold the berries prior to packaging; and a dispatch room to hold the packaged berries prior to shipping.

The refrigeration installation was a joint venture between local businesses Chillskill Refrigeration and GPS Air Conditioning & Refrigeration.

Chillskill Refrigeration's Richard Cromack explains.

"The first cool room featured a blast chiller, required to bring 10,000kg of strawberries from field temperatures of between 28°C – 30°C down to 4°C for processing," he says.

The cool room was equipped with a condensing unit and evaporator and required a pull down time of eight hours.



*The cool room facility.*

The second cool room in the post-harvest process is the preparation room. The room was required to pull down 10,000kg of strawberries from 4°C to 2°C and then hold them before packaging.

The third room, the dispatch room, was required to hold up to 15 pallets of packaged strawberries before shipping. The estimated product load of these pallets was 10,000kg from 6°C to 2°C.

Both the preparation and dispatch rooms were also equipped with condensing units and evaporators.

Designing and installing a three-stage cool room production process for the farm was not without its challenges, according to Cromack, but was all part of the brief that needed to be filled.

“The greatest challenge was having the right capacity for each system, with only 85 amps 3Ø for the refrigeration plant,” he says.

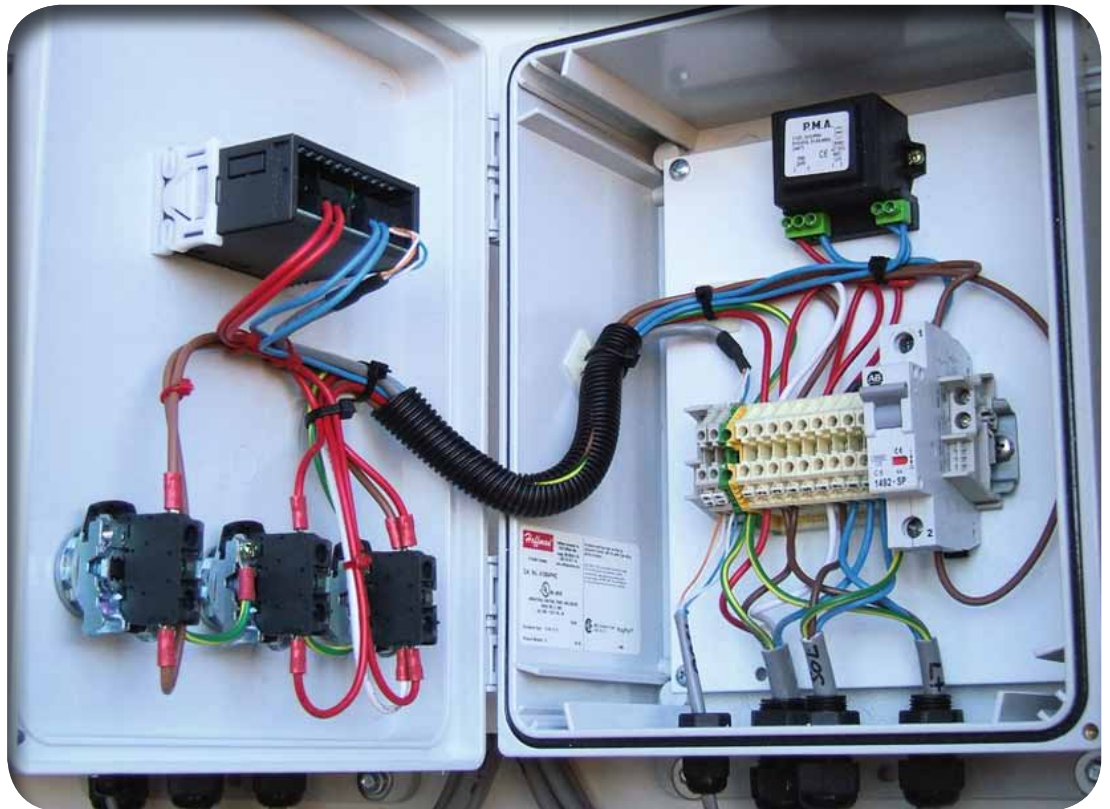
Another of the challenges, requiring a more practical approach, was identifying a way that would ensure that all the produce was maintained in exactly the same condition.

Cromack says the cooling required the “right balance of air flow and capacity” for the blast chiller to move air through the product – without drying the outer fruit too much before the inner packed fruit was down to temperature.

Like many projects of this nature, creativity from the design and installation team was used to make the best of the conditions.

The blast chiller cool room and the preparation room were made with a two-part sliding door, Cromack explains, which also acted as the dividing wall separating the two rooms. This was achieved so that the strawberries could be transferred without ever leaving the refrigerated air space.

“In addition, the preparation room system was designed to have enough capacity to hold the fruit



Inside the cool room control box.

in both rooms with the blast chiller compressor turned off, with only the fan on for circulation,” Cromack says.

This was designed in case the blast chiller room was required for additional storage area.

So how does it stack up in terms of energy savings for McMartin’s farm?

The compressors selected on all systems allowed for maximum coefficient of performance (COP) and permitted additional capacity, allowing shorter run times and faster pull-down times as a result of greater air flow, using a larger capacity FDC unit.

The installation at McMartin’s farm was put under the test during its first high-production run. According to Cromack, McMartin’s Farm couldn’t be happier with its new cooling process, and staff are looking forward to a strong strawberry season.

So next time you tuck into a serving of strawberries and pancakes or spread some strawberry jam across your toast, think of McMartin’s Farm, snuggled up on the Sunshine Coast, producing some of the country’s best and freshest strawberries with the help of HVAC&R. ■



The cool room’s outdoor units.

## McMartin’s Farm

### The details

Client:  
**McMartin’s Farm,  
Sunshine Coast, Queensland**

Installers:  
**Chillskill Refrigeration and GPS  
Air Conditioning & Refrigeration**

Electrical installation:  
**Cromack Electrics P/L**

### The equipment

Blast chiller cool room:  
**Patton Quantum PZB1500 condensing  
unit and JMC340 evaporator.**

Preparation and dispatch rooms:  
**Patton Quantum PZB800 condensing  
units and PM160 evaporators.**

Compressors:  
**Copeland scroll compressors.**