



Future of cool savings

The spotlight is shining on commercial refrigeration with increasing pressure on manufacturers to develop smarter, more energy efficient and sustainable equipment that could slice a big wedge out of operating costs for hospitality businesses, writes Rosemary Ryan.

Refrigeration is one of the quiet heroes of the commercial kitchen, the pieces of equipment that are ticking away day and night every day of the year and which are so vital to the smooth and efficient running and success of a hospitality business.

Working away 24/7 means commercial refrigeration is also one of the biggest consumers of energy and cost sources for business operators, which has meant it's an area that's coming increasingly into the spotlight as the focus on energy efficiency continues to grow, both from the view of protecting the environment as well as reducing costs for businesses, particularly in tight margin industries like food service.

Plus the trend of increasing consumer interest in food provenance and local sourcing—driven by concerns about the environment as well as demand for taste and freshness—means caterers are using larger volumes of fresh produce which, in turn, has led to a demand for increased refrigeration capacity and interest in smarter refrigeration technology that can save on wastage.

Commercial refrigeration is a major topic of interest for the Federal Government which has developed a draft strategy that aims to improve the energy performance and uptake of energy efficient products and services within Australia.

It aims to do that with a series of measures which target both the manufacturers, encouraging the improved design of equipment, as well as end users, educating them on the long term benefits to their business of installing new refrigeration. The strategy also aims to focus on better maintenance practices by business operators with findings that a refrigeration system that isn't regularly maintained can lose 10-15 per cent of its efficiency.

In 2008, non-domestic refrigeration consumed more than 13,400 GWh of electricity in Australia. Of that 14 per cent was used by the catering, hospitality and retail sectors. With a range of new policy measures the Government expects to reduce commercial refrigeration consumption by 14 per cent in 2020.

A key part of the Government's draft strategy is a tightening up of the MEPS

(Minimum Energy Performance Standards). Two key measures in its national strategy include plans to accelerate and expand the current MEPS and labelling program, as well as the establishment of national legislation for MEPS and labelling.

This has been welcomed by some of the top manufacturers of commercial refrigeration equipment. Mark Kerspian, of Skope Refrigeration, which is recognised as one of the leaders in the development of energy efficient commercial refrigeration equipment, says tightening the MEPS system would be good news for the foodservice industry.

“MEPS, in the past, has been a bit of a toothless tiger and a lot of products have snuck through onto the MEPS website that has basically not been authenticated as tested,” says Kerspian. “So it hasn’t been as useful a tool for buyers as it could be.”

Kerspian predicts the Government’s proposed plans to raise the minimum standards could see around 40 per cent of the equipment that is on the MEPS website at the moment filtered off.

Top refrigeration manufacturers are already forging ahead with technological improvements to refrigeration systems that can offer significant long term benefits to a foodservice operator’s bottom line. They can deliver cost savings that come from a combination of factors including savings in energy costs, reduction of food wastage, and less money spent on maintenance. “Well designed, no leakage systems must be at the top of every smart manufacturer’s agenda,” Kerspian says.

Kerspian says technology being built into the new generation of refrigeration systems is already offering good opportunities for hospitality operators to reduce costs of refrigeration operating in such intense environment as foodservice where the equipment must cope with challenges such as the incessant door opening that is part and parcel of a busy hospitality operation.

One of the new technology areas is the development of increasingly sophisticated intelligent controllers that help reduce power consumption by working to adjust how hard the fridge is working as conditions change, and controlling conditions inside the cabinet.

Intelligent controllers are able to detect a change in the operating situation and alter the way the refrigeration system operates to ensure that energy use is kept to a minimum while also ensuring the contents are stored safely at the right temperatures.

For example, if the door has not been opened for a given period of time, then the controller could switch off the evaporator fans. It’ll carry on monitoring the temperature and, as required, switch the fans back on.

Making your choice

Refrigeration can play a huge part in ensuring your kitchen is more environmentally friendly and delivering the best value to your business. By choosing carefully and caring for your equipment you can ensure your total operating costs are minimal through increased energy efficiency and reduced food and beverage wastage. Here’s some tips for when you’re choosing equipment for your business.

- Are your specifications accurate? Have you ordered what is specified, and have you double-checked the measurements and specifications?
- Ensure you incorporate appropriate space into your kitchen to allow for airflow around the refrigeration. Good ventilation will ensure a cool operating refrigeration system that in turn will reduce power consumption and increase the lifetime of the unit.
- In your kitchen check where the heating generating products are located in terms of distance from your refrigeration. Is there enough distance between the two types to ensure one does not have a negative impact on the other’s productivity?
- Is there an off-the shelf-product to fit your specifications, or will you require a one-off product to be designed and manufactured?
- Are you able to clean your refrigeration items easily, without having to move them?
- Is your refrigeration door self-closing?
- Does your refrigeration product configure to avoid cross contamination of varying types of food?
- Check the energy efficiency of the unit. Ensure that the cabinet is MEPS compliant, ideally it should have a ‘High Efficiency’ rating.
- If possible, check the cabinets rated Climate Class to ensure it is suitable for the climate it is being operated in. This will help reduce energy consumption and will guarantee consistent cold product temperatures.
- Choose units that use new technology such as power saving modes.
- Choose units that are sized to meet your refrigeration needs. Cabinets will not perform optimally if they are overloaded or under-loaded with products.

Courtesy: Skope Refrigeration

“This means that during quiet times, like overnight the refrigeration system will use less energy, while the smart controller ensures food safety and quality are protected,” says Skope’s Kerspian.

“You could have a beverage cabinet that can work out the cycle and it knows that at 10pm at night it can go to sleep but it knows that at 4am it has to gear up to get everything down to a core 2°C. It doesn’t shut off entirely but it lets the cabinet have a little less refrigerant when it needs it, so it’s not going flat out 24 hours a day.

“The new systems are all being developed around smarter controllers and, smaller and more efficient compressors, around EC fan motors which are speed controlled fan motors, and also on proper installation.”

Leading the way in the installation of some of the most efficient refrigeration systems available are some of the major convention and function centres in Australia that are under pressure to attain very high global green standards with buildings that incorporate sustainable products and systems.

One of the most recent to launch has been the new property from the Doltone hospitality group—its sleek 6-star green-star rated Darling Island Wharf centre. The building is the first in the rating class in NSW.

‘It doesn’t shut off entirely but it lets the cabinet have a little less refrigerant when it needs it so it’s not going flat out 24 hours a day.’

With refrigeration representing the biggest energy user for the operation, it was a big focus in the strategy to meet the six-star standard, says Jeff Bennett of Queensland based consultancy Bennett Design Group, who worked on the project. Bennett says the purpose-designed and constructed refrigeration system installed will deliver around a 15 per cent reduction on running costs compared to a standard refrigeration system.

“We chose water cooled refrigeration to be able to meet the six star rating,” he says. “It means that it reuses the water out the harbour—it’s free water. We chose it because it’s more efficient and costs less to run two things you have to have if you are going to have that rating standard.”

“It’s more expensive up front but of course in the end in the long term it saves lots and lots of money—I would imagine ten to 15 per cent a year of running costs. You have the upfront costs but are saving money through the year.”

Bennett said the other feature that held the Doltone development achieve the rating was the specially designed cool rooms.

“We used a higher density cold room panel and a thicker panel to give you basically a zero loss running through it,” Bennett says. “The walls are double the thickness which means they are more difficult

refrigeration

to install. Plus they have special floors so that nothing sweats, and all have automatic controllers and entrapment alarms. There is a bit of cost up front but we would save 20 per cent refrigeration costs running it.”

Meanwhile, all the cabinet refrigeration installed within the Doltone development’s new gourmet food outlet, Signorelli Emporium, feature triple glazed glass. “It means no heat can come into the refrigeration, it is much more efficient,” Bennett says.

“Really none of this is groundbreaking science. But it does cost money and that’s why most consultants wouldn’t suggest it, a lot of clients aren’t able to spend this sort of money, or they’re not looking long term.”

Good management and processes in commercial kitchens are also essential for operators who want to reduce their refrigeration costs. Refrigeration expert with Moffatt, Scott Graham, said simple mistakes like putting food that is too hot into a refrigerator can force the fridge to work harder and increase running costs.

“One of the major issues with refrigeration costs and breakdowns is that food is put into fridges when it’s too hot so if you’re cooking your food and chilling it down and putting food that might be 50°C in your fridge then the temperature of the fridge rises and the fridge has to work a lot harder to get that temperature back down. That’s where a blast chiller is very valu-

Technology gives peace of mind

It’s one of the worst nightmares of a foodservice operator—a failure in the refrigeration system that goes undetected or that happens when no one’s around.

But the area of temperature monitoring systems that will alert operators if the temperature of their fridges falls or if the fridge fails is delivering peace of mind and is becoming more commonplace in hospitality businesses.

One of the newest products on the market is Temp Minder, a 24/7 wireless temperature monitoring system, that was one of the finalists at the Fine Food Australia Best New Product Awards last year.

Temp Minder is a “live” refrigeration communications tool with four functions—display, record, report, and alert.

It allows operators to continuously monitor temperature in walk-ins, freezers and every other refrigeration appliance in your kitchen and view them on the system’s receiver display or “live” via the Internet. It will also send temperature warnings direct to email and mobile phones via text message.

It also provides data logs, charts and graphs that can be viewed globally by an internet browser to show the history of the temperature within a refrigerator or cool room.

It takes away the need to have employees going around and checking refrigeration temperatures and logging it but it will also advise the relevant person within the establishment via email and SMS exactly when their refrigeration is not holding at the right temperature.

able. If you want to run efficiently you need to have a blast chiller.

Other simple things like ensuring cool-room doors are kept closed (not propped open during busy times) and that units aren’t over stocked, plus a strict program of preventative maintenance can also deliver savings, says Skope’s Kerspian.

He said things like a partially blocked condenser could increase energy consumption by up to 23 per cent, while a

‘We’re talking about a profit centre that could be devoid of any profit.’

faulty door seal by up to 11 per cent.

“When you’re running a food service operation we are talking about a profit centre that could be devoid of any profit unless you really work at it.

“When we do an energy audit people are always amazed at the opportunities for cost savings. All of a sudden something like refrigeration that they hadn’t really thought much about becomes very important.”

*Celebrate everything with
Mrs Mac's Party Range*



*Now even better value-
with a great new everyday
promotional price*

- Generously sized 52g party pies and 33g party sausage rolls offering greater value
- Range of flavours for wide appeal, including beef, chicken and vegetarian
- Packed with premium quality ingredients
- Attractive sprinkles for identification and enhanced presentation
- Trusted national brand
- Supported by Mrs Mac's extensive sales and merchandising team

*To find out more about Mrs Mac's Party Range
contact (08)9442 5222
or visit www.mrsmacs.com.au.*

MRS  MAC'S

*Baking quality pastries for over 55 years.
If it's not a Mrs Mac's, take it back!*