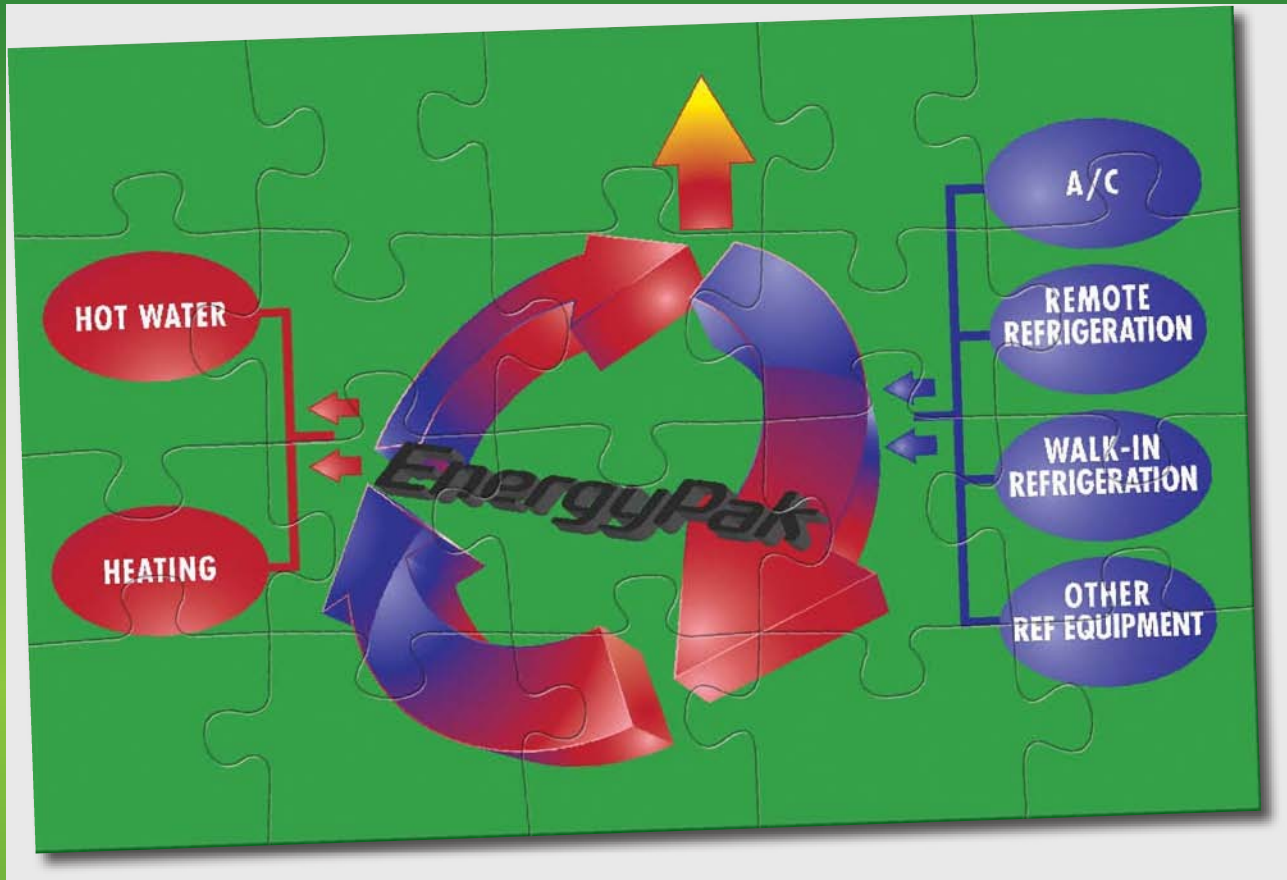


A New Solution

By Tom Mathews



Refrigeration and air conditioning are among the highest energy end uses in foodservice facilities, and because of the nature of their operation, they can also be the greatest wasters of energy. EnergyPak, a brand new technology, wants to change all that. This unique, next generation, foodservice facility modular heat/cool supply and control system is making a favorable impression on the first few foodservice industry consultants who have had the opportunity to learn about the system. "The EnergyPak system is one of the most significant developments in foodservice sustainability in recent memory," says Woody Woodburn, FCSI, of Woodburn & Associates. "What a great idea to pull refrigeration and A/C together, and then reclaim the heat from the processes for space and water heating; genius! Just the right package at the right time for 'green' foodservice!"

Refcon, the company that developed the technology, currently has several patents pending for the key EnergyPak design advantages. This new technology consolidates refrigeration, heating and air conditioning components and captures 100% of the useful recoverable heat, thereby reducing overall energy usage, operating expenses and carbon footprint. Moreover, while most conventional systems can deliver one or two LEED credits, EnergyPak can help deliver up to an unbelievable 16 LEED certification credits!

Intended for consultants designing new facilities and foodservice concepts, the Energy Pak can't be retrofitted. Albert Yanez, FCSI, with Clay Enterprises, discovered Energy Pak just in time to use it for the refrigeration for Bel Air Bar & Grill in Los Angeles. "We wanted to combine the refrigeration and AC into one larger system, but it was too late by

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the time we found this,” he said. “It’s a LEED certified project so we’re glad to find this technology.”

In designing a foodservice establishment, each piece of equipment – walk-in, under-counter, etc. – normally has its own individual electrical circuit, including wiring and breaker. The Energy Pak significantly reduces the electrical load for most foodservice equipment served by it,” explains Herman Jakubowski, president of Refcon. “Now you can consolidate many individual circuits into just four or five because more than one unit can be plugged into one circuit.” The savings from not having to install 15 circuits for example, at \$1500 per circuit, total over \$22,500, and this is just the start.

The entire system uses ABS or plastic tubing rather than copper piping, and equipment served by EnergyPak can be easily moved around via quick connects. A single door refrigerated unit can be replaced with a different style or larger unit with ease at any time in the future, allowing for great flexibility in initial foodservice facility layouts and later changes in operating strategies.

Air conditioning and refrigeration equipment cycle on and off constantly in the course of a day, because their load is constantly changing. Energy Pak adapts to the exact load requirement, whether peak or minimum, at any given time, with no loss of efficiency. And one not to be overlooked side benefit is that the kitchen temperature isn’t being affected by waste heat from the refrigerated equipment, making it a more comfortable environment for staff and for perishable food.

Estimated EnergyPak Savings Analysis

Refrigeration Without A/C	Description	Refrigeration With A/C
67,500 KWH/YR	Estimated energy usage for mix of self-contained and remote condensing units as currently designed.	136,500 KWH/YR
58,500 KWH/YR	Estimated energy usage for EnergyPak.	100,500 KWH/YR
9,000 KWH/YR	Estimated energy savings using EnergyPak.	36,000 KWH/YR
6 Tons	Estimated reduction in air conditioning load when EnergyPak is used.	6 Tons
1,900 GAL/Day	Estimated hot water available when EnergyPak is used, 60° F EWT and 110° F LWT.	7,100 GAL/Day
84,800 KWH/YR	Estimated KW hot water savings when EnergyPak is used.	314,400 KWH/YR

Using a glycol-water solution which circulates constantly in a loop (not unlike the system in home radiators), the temperature is maintained with a minimum of energy expended. This results in a dramatic shift in the stability of energy control.

Further, the heat from the closed system is extracted and used in the HVAC or for heating water or makeup air for hood systems. EnergyPak also makes it easy to recover heat from hoods, where systems like the new one from Halton Industries are being employed.


"Many projects pursuing LEED certification have struggled with how to garner credits in the Energy and Atmosphere area," says Jakubowski. "In addition to minimizing energy and the adverse effect on the environment caused by refrigeration, air conditioning and heating, EnergyPak also decreases operating costs and provides substantial savings. It's a revolutionary solution for companies looking to operate more efficiently, both in regards to wasted energy and its impact on the environment as well as those looking for ways to save money."

According to Refcon, EnergyPak can increase refrigeration and air conditioning system efficiency over conventional foodservice refrigeration and air conditioning systems by as much as 45% and delivers an 80% or more reduction in overall refrigerant charge versus the energy use and refrigerant charge seen in traditional restaurant and foodservice refrigeration and air conditioning systems and design approaches. With these energy cost and operational savings, companies can expect to achieve a payback of less than 2.5 years when using the EnergyPak system. "We haven't seen a single project so far with less than 39% improvement in energy use," says Jakubowski.

"The EnergyPak by Refcon is one of the most exciting innovations to come onto the food service scene in my 35 years of working as a consultant. The components as they are assembled and designed will forever change the face of our industry in how we interface with the facilities we're working within," says Reggie Daniel, FCSI, President, Daniel Design, Inc., an independent foodservice consulting firm that designs and specifies products like the Refcon EnergyPak for use by clients. "Simplicity of design, reduction of energy usage and potential maintenance items will minimize ongoing expense and provide a flexibility to operations that has never before been available. The EnergyPak will take the part of foodservice that has seen little innovation into a technologically advanced new era."

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Refcon provides a full complement of support services throughout facility design, construction and grand opening phases as well as ongoing monitoring services afterwards. "The system reduces the failure points by reducing the number of mechanical components dramatically," says Jakubowski. "But if something does go wrong, our 24/7 monitoring system knows instantly. We know exactly which unit is malfunctioning as soon as it does and send out a technician." This monitoring is also invaluable for HACCP as it assures detailed temperature records are maintained.

Much of this technology has been developed in the last few years and some of it is in use in supermarkets today. "But the approach is completely different for foodservice. It's a monumental shift in what's available," says Jakubowski. "While it represents a huge reduction in system complexity, it's also a huge increase in system sophistication." 

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