

## Success Story



### where

- The Berliner Continental Butchery & Bakery in Dainfern, Johannesburg

### what

- Heos water cooled self-contained refrigeration system
- Overall comparison against other stores in the same chain

### why

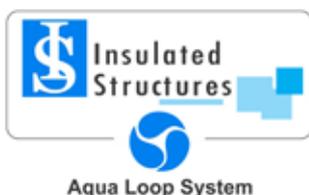
- Energy saving
- Lower running costs
- Stable temperature control

### when

- April 2016

### who

- Cabinet OEM and Installer: Insulated Structures



## Heos: the end-user's experience

Opened in April 2016, the Berliner Continental Butchery & Bakery is the third store managed by the Jerichevic family in Johannesburg, and the first Heos sistema installation in South Africa.

Heos sistema is the high-efficiency solution designed by Carel for the retail business.

It represents a new way of constructing refrigeration systems, using plug-in cabinets fitted with DC compressors, electronic expansion valves and advanced controllers. A water loop carries the heat due to condensation outside of the store. Insulated Structures is one of the leading refrigeration companies in Sub-Saharan Africa. Operating in Johannesburg since 1985, with a workforce of around 150 employees, it manufactures, sells and installs refrigeration units. The Slimline products used at the Berliner store have been designed to both include the latest energy saving technology and give the store a modern look.

Carel and Insulated Structures worked together on this project, sharing several different objectives, such as cost reduction and faster installation, increased energy efficiency and maximum food quality.

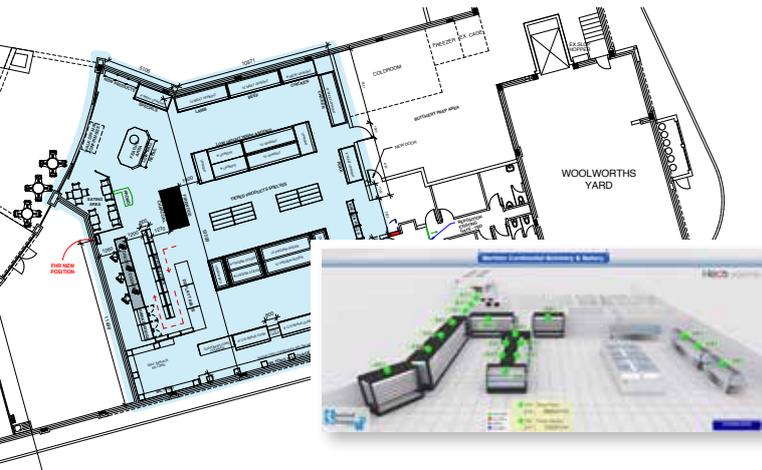
The main advantages of the solution are:

- lower running costs
- higher system reliability
- fine cabinet temperature control



HEOS sistema wins the prestigious 2016 AHR Expo Innovation Award. The AHR Expo Innovation Awards 2016 recognises the most innovative, effective and original HVACR products and technologies available on the market. Winners are selected by a panel of third-party ASHRAE member judges in 10 product categories, based on innovation, value and market impact.

## Description of the store



The store comprises 15 medium temperature cabinets and 3 cold rooms, covering a surface area of around 430 m<sup>2</sup>, and with a total cooling capacity of 73 kW.

This system uses two different Heos sistema configurations. In standalone mode, each unit has its own compressor and condenser, meaning the cabinet is completely independent and only shares the cooling water loop with the rest of the system. In multi-evaporator mode, the condenser is shared by several evaporators on different cabinets, each fitted with their own expansion valve: from the viewpoint of the electronics, the system is in this case managed in master/slave mode. The installation in South Africa features 15 standalone units and one multi-evaporator cabinet served by three units. The first configuration is ideal for maximising energy performance and system benefits, allowing the possibility to use true plug & play units (quick and easy maintenance). The second, on the other hand, responds to specific needs, such as limits in the layout and smaller-sized evaporators, for example in the delicatessen showcases.

Cabinets Qty	Cabinet type	Dimension	Cooling capacity
3	Curved glass serve over cases	7.3 m	5 kW
6	Meat upright	2.5 - 3.6 m	35 kW
6	Med High Back	2.1 - 3.6 m	16 kW
3	Cold room	15 m <sup>3</sup> 84.5 m <sup>3</sup>	16 kW



MT cabinets in the Berliner store



## Heos sistema

### High efficiency

- Variable speed DC compressor and electronic expansion valve
- Wide range of modulation
- Maximum energy efficiency at part loads



### Flexibility

- Plug-in units that simplify changes to the layout
- Larger selling area



## The water loop

The water loop is a closed water circuit that takes away the heat of condensation generated by the refrigeration units installed on the cold rooms and cabinets.

This system in particular comprises:

- a water circuit that carries heat away from the condensers to another place
- a dry cooler that transfers the heat outside.

All the heat produced by the refrigeration units is exchanged by the dry cooler, without differences in operation between summer and winter. This total free cooling is the solution that maximises energy saving.

### Main components:

- PVC tubing
- Twin variable speed pumps
- Dry cooler
- Compensating valves and filters





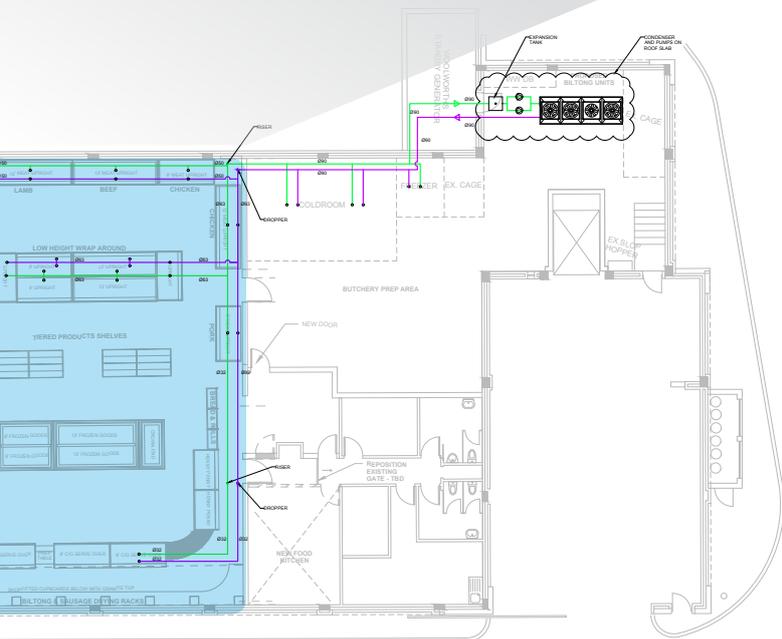
### Easy installation and maintenance

- Units tested and optimised in the factory
- Continuous monitoring of operating conditions
- Advanced algorithms for preventive diagnostics



### Environmentally-friendly

- Lower refrigerant charge (no long copper pipes)
- Less refrigerant leaks (no welding in the field)



## PlantVisorPRO

### System for connectivity, monitoring and remote management

PVPRO provides complete control of the system in every stage of operation:

- Start-up – centralised configuration of all the parameters;
- Daily operation – data logging, reports, activity scheduling;
- Maintenance – remote access and automatic response.

Specifically, efficient system management is guaranteed by:



Optimisation of system performance



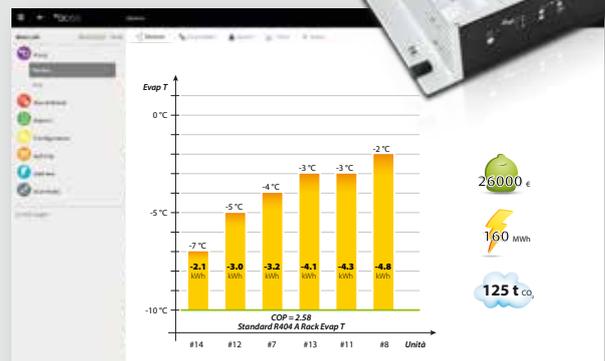
Data analysis



Alarm management

## boss

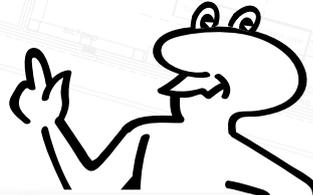
As concerns system supervision, alongside the consolidated PVPRO, a new mobile ready local supervisor is also available: boss. Designed for medium-sized and large systems, boss can be used on any mobile device, and thanks to built-in Wi-Fi, can access the supervisor without requiring any other network infrastructure.



# Conclusions

This is what Shaun Jericevich, owner of the Berliner store, had to say about the benefits obtained

“I'll never go back to a multiplex system again...”



No extra maintenance needed



“If we do have an issue such as a gas leak it will be just one cabinet that is affected and we might lose 3.5Kg of gas. When compared to the 50 – 60 Kg we lose when the Multiplex system leaks, HEOS is a no-brainer.”



**HEOS** Water cooled self-contained refrigeration system launched in South Africa with Insulated Structures

When one of the most innovative HVAC electronic controls manufacturer in the modern refrigeration scenario designs and specs a new refrigeration system expect stunning results

The evidence for this without question is now available in South Africa at The Berliner Continental Butchery & Sausery in Durban, Johannesburg. HEOS or High Efficiency Showcase Controls is the outcome of Carel's refrigeration engineers work to optimise the integration of their technologies into water cooled self-contained refrigeration.

Previously launched in Europe, the HEOS system is now available in South Africa as a collaboration between Carel and Insulated Structures.

The new water cooled refrigeration system is a first in the world of water cooled self-contained refrigeration. It is a first in the world of water cooled self-contained refrigeration. It is a first in the world of water cooled self-contained refrigeration.



**The user's experience**

For Shaun Jericevich there are three stand-out features of the new system

- 1. The HEOS system is a water cooled self-contained refrigeration system. It is a first in the world of water cooled self-contained refrigeration. It is a first in the world of water cooled self-contained refrigeration.
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+2 extra days shelf-life



“What this constant cabinet temperature has done is given us an extra two days shelf-life across the board on all products in the cabinet. Also, very important, the product colour holds reducing the need for reworking the product.”

30% of energy saving



“No doubt for the running costs: the cabinets and the cold-rooms running on Heos at Dainfern are similar in size to their multiplex Petervale branch and they use 30% less electricity.”

**SUPERMARKET & RETAILER** for FMCG, Retailers, Wholesalers & Suppliers

For more details about the end user experience you can find the complete article in the July printed publication of Supermarket & Retailer, that is a specialised media group that brings wholesalers, retailers and suppliers the latest industry news, store trends, merchandising, promo ideas and operating.

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