

Shop saves €13,000 a Year through Heat Exchange

CENTRA – WATERGRASSHILL – CO. CORK



Background

Watergrasshill is a busy town on the outskirts of Cork City on the main Dublin road. Ross's Centra shop on the main street is open all day and employs 23 people. During 2014 Ken Ross, the owner, decided to tackle his mounting overhead costs with a particular focus on electricity, which was the largest utility bill by far. With the help of the Musgrave Group, a retrofit and upgrade plan for the shop was developed.

Project Description

The main areas that they addressed were:

- Upgraded their lighting to more efficient LEDs throughout the shop. This included all refrigeration lighting, internal shop lighting and external security lighting. In areas of low occupancy sensors were also fitted.
- Upgraded the electronically commutated fans on all the display fridges to improve efficiency and reduce heat output.
- Replaced the individual refrigeration compressor packs from the main plant room with an external digital based compressor. This controls all the display fridges with individual temperature probes and ramps up and down as needed (as opposed to running all the time).
- As a consequence of changing the refrigeration system the 14 kW extractor fan on the plant room, which was running 24/7, has now been decommissioned.

Heat Exchange

Ross's Centra provides cooked products and hot food in its kitchen and Deli counter and, with the ovens and hot plates, this area gets very hot. An extractor fan was running constantly to keep the area cool. At the same time, they were spending an estimated €3,500 a year to provide hot water through the existing dual immersion system.

This was a key area that they looked at during the shop upgrade in 2014 and decided to use this heat to their advantage. Using the existing extractor system, a heat recovery unit was installed which takes the hot extracted air from the kitchen and uses it to heat water. This system has completely replaced the immersion system and is estimated to be costing ~ €350 a year to run. That's an annual saving of over €3,000. The investment cost for this system was ~ €6,000 which indicates a payback of 2 years.

**Financial Benefits:**

Potential Cost Savings: €13,000 p.a.

Investment: €45,000

Payback: 3.5 Years

Environmental Benefits:CO₂ reduced: 43 tonnes p.a.**Results**

In total the cost of all of this energy efficiency work, including grant aid received, was €45,000. It is estimated that Centre, Watergrasshill are currently saving at least €1,100 a month (€13,000 annually) which means that the payback on the complete shop upgrade is just over 3.5 years.