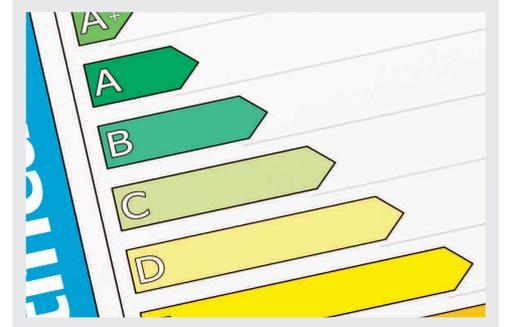


# An opportunity to save a significant amount of energy and it could actually be sitting right under our nose?

## Arguably one of the most straightforward areas where we can reduce energy use is to remove on site duplication of plant.

By this we are referring to the situation where valuable waste heat from a cooling system is rejected from a building but at the same time the building is using fossil fuels to provide space heating or hot water.



This situation can be found in any application from a manufacturing plant to a hotel/restaurant to a standard office building, all these buildings & their operational activity have a significant heating or hot water demand that can be operating alongside an equally significant rejected cooling load.

Basically high value waste heat is rejected from a cooling system within a building or process and at the same time a boiler could be operating in the same building; hence the production of energy is duplicated at very high cost.

Historically the specification of heating and hot water systems has been treated as a completely separate area to the specification of air-conditioning or refrigeration equipment.

However we are now entering an era where this duplication of plant in terms of refrigeration equipment and boilers is becoming extremely visible and is viewed as being unacceptable due to increasing energy costs and equally important carbon reduction targets.

As a result of this increasing awareness there are specialist organisations emerging with the objective of providing bespoke heat recovery packages on a retrofit basis to counter the duplication of existing heating and cooling systems.

Garry Broadbent of Green Cooling represents such a company and comments, **“We are seeing that once a specifier or end user understands that they are wasting costly heat energy they immediately become interested in heat recovery”, continuing, “our approach is to monitor and determine how much waste refrigeration energy a user is rejecting and to also monitor the heat energy they require, we then design a bespoke heat recovery system to suit their application as there is no point proposing heat recovery to an end user if there is an insufficient demand for the recovered heat”.**

The renewable industry and the energy reduction sector have been scarred by misapplication and it would appear that heat recovery could potentially go down the same path.

Why, because it is extremely straightforward for a refrigeration heat recovery system to be considered because the results are very clear, mainly due to the fact that any heat being recovered is free.

This heat is a by-product of providing cooling and therefore has zero energy costs, how can the user of such a system lose?

But, the system must be correct for the application and this is where a complete understanding of the clients system must be gained including historical and actual hot water or heating usage information.

The reason for this level of diligence is to ensure that the amount of heat recovered is completely in line with the amount of heat required by the site in order to provide the maximum level of payback.

Hence it can be pointless installing a heat recovery system that either produces too much or too little thermal energy as the investment in the capital plant is at risk of not providing an attractive return on investment.

This diligent purchasing procedure would be applied when selecting any item of plant or equipment.

However when new energy saving equipment is considered this basic specification diligence can be somewhat difficult to put in place and therefore the fact that a percentage of energy can be saved is enough to secure an order for this “new energy efficient” equipment and there lies the risk.

Hence it would be sensible to insist that before any investment is put in place the actual demands of the application be determined, Garry Broadbent of Green Cooling further comments, **“For example we fit metering equipment within a facility to record the actual amount of required heat energy and also simultaneously record the rejected amount of cool energy, by applying this basic level of diligence the right level of investment can be applied to match the projects objectives”.**

Therefore the message coming through appears to be very clear in that recovering waste heat from refrigeration and cooling equipment is a huge opportunity.

However to gain the maximum benefit from any investment it is vital that the right level of planning and diligence is applied in order to ensure that the heat recovery system does not simply turn into a carbon reducing gesture that does not provide any real benefits.