

# Case Study

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## Case Study: Thermal Management Systems Manufacturer (Destratification)

### The Challenge

Catalyst is working with a globally leading producer of vehicle acoustics and thermal management systems. The customer has three large manufacturing sites across the UK, each utilising high heat and energy processes. The processes at each site are very temperature critical.

As part of an exercise to profile energy use and identify savings across the sites, it was noted that the heating, ventilation and cooling (HVAC) systems have to constantly cycle on in order to maintain building interiors at a set and even temperature throughout.

The main reason for this being in all buildings, the natural process of thermal stratification occurs, which can result in dramatic differences in temperature from floor to ceiling and wall to wall. Thermal stratification is caused by hot air rising up into the ceiling or roof space because it is lighter than the surrounding cooler air. The same applies to cool air falling to the floor as it is heavier than the surrounding warmer air.

As such it was identified that the HVAC systems were likely to be over delivering to compensate for this stratification phenomenon in an attempt to achieve a required temperature at working/operating level, which is normally only around 1.5 metres to 2 metres from the floor.

### The Solution

Catalyst recommended thermal destratification as a cost effective carbon saving solution. A thermal destratification system is straight forward to retrofit or install, resulting in affordable purchase. As simple as installing a new light fitting, destratification fans need only be wired in and hung from the roof or installed into suspended ceilings. These features account for some of the remarkable returns on investment noted by existing users; which have included payback in three months as well as a 50% reduction in heating and cooling costs.

### The Outcome

The findings from this exercise have also been presented as part of the UK government's Energy Saving Opportunities Scheme compliance; which Catalyst undertook on behalf of the customer. As such Catalyst have made a recommendation that a full survey for destratification is undertaken.



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