

From the Director of Health Estates
Philip McClay



BY EMAIL

To: Chief Executives HSC Trusts

For info:
Heads of Estates

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Reference: PEL (26) 02
Related Document
Date: 17 September 2026

Dear Colleagues,

NHS Estates Technical Bulletin (NETB) No 2026/01

Summary

The purpose of this letter is to notify HSC Trust organisations of the publication of [NHS Estates Technical Bulletin \(NETB\) No 2026/1](#), *Generating Energy Efficiency Savings through Controlling Theatre Ventilation*. This bulletin supplements *HTM 03-01 Specialised Ventilation for Healthcare Premises* providing practical guidance to support healthcare organisations in reducing energy consumption associated with operating theatre ventilation systems particularly when these theatres are unoccupied. This NETB 2026/1 document has been added to the Estates publications registry as relevant guidance (<https://www.health-ni.gov.uk/publications/estates-and-facilities-publications>).

Action

Chief Executives of HSC Trusts are asked to:

- Disseminate this circular to all relevant staff including, but not limited to: Estates, Infection Prevention and Control, Ventilation, Capital Projects, Theatre Management, and Sustainability teams.
- Review current theatre ventilation arrangements across your estate in line with NETB 2026/1 to identify opportunities to implement ventilation setback or switch-off strategies where appropriate.

Background

HTM 03-01 *Specialised Ventilation for Healthcare Premises* recognises that operating theatre ventilation systems should only operate at full output when required. NETB 2026/1 supports this approach and highlights that ventilation switch-off or setback

strategies can deliver substantial energy, cost and carbon savings when theatres are unoccupied.

The benefits of this approach have been demonstrated locally through the Southern Trust's implementation of occupancy-based controls integrated with Building Management System (BMS) controls across 30 ventilation systems. This has resulted in a ***reduction in operating hours of approximately 56%***, an increase in the ***lifespan of associated plant and equipment, annual savings of £388,000*** and a reduction in carbon emissions of around ***396 tonnes CO₂e per year***. This case study demonstrates the financial, environmental and operational benefits that can be achieved through effective ventilation control strategies. Further information is provided in ***Annex A***.

Adoption of the recommendations within NETB 2026/1 as part of wider energy efficiency, sustainability and decarbonisation programmes can contribute to reduced operating costs, extended plant and equipment life, lower carbon emissions, and the delivery of wider sustainability objectives across the Health Estate.

Should you have any queries regarding the content of this letter please contact:

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Yours sincerely



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cc
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ENERGY SAVINGS INITIATIVE FOR THEATRE VENTILATION SYSTEMS



**TO REDUCE ENERGY COSTS AND INCREASE
LIFESPAN OF VENTILATION PLANT WHILE
MAINTAINING PATIENT SAFETY**



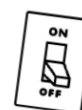
BACKGROUND

The Trust faces mounting pressure from rising energy costs, where inaction will inevitably lead to higher expenses. Effective energy management will not only provide financial relief but also lower carbon emissions and support our Sustainability Strategy.

Historically, the Trust has operated most ventilation plant 24/7 regardless of a department's operational hours with the associated electricity, heating and chilling systems running costs. This has resulted in high energy wastage, as some units ran continuously to support a 9-5, Monday-Friday service.

The latest Health Technical Memorandum 03-01 (Ventilation) supports UK legislation to bring all greenhouse gas emissions to net zero by 2050, and recommends switching a system "off" when not required to be the most energy efficient policy.

Not all areas would be suitable due to 24/7 occupancy but Estates identified 30No. ventilation units as benefiting from this strategy.



BASELINE

As the 30No. ventilation units ran 24/7 they would run for a total of 8,760 hours per year. We know the size of each motor powering the supply and extract fans along with adding a factor for associated heating and cooling costs (30%) we were able to estimate how much energy is used per year to run each unit

As this strategy would require capital investment an 'Invest to Save' business case was prepared and subsequently approved.

From capturing departments typical operating hours it was estimated that most units could reduce run times down to 10 hrs/day, 5 days/week.

Based on this information, the estimated annual saving on running costs was **£377k**.



DESIGN

We had to identify how ventilation systems can be switched off without it being onerous for occupants and Estates staff with 2 options considered.

Time schedules set to match normal occupancy times.

- Pro's - a simple way of switching on and off ventilation plant without any user intervention.
- Cons - they will follow time schedule regardless of actual occupancy therefore if a Theatre finishes early it will continue to run and alternatively if a Theatre runs on later then the ventilation system would stop at the normal time unaware that it is still required to operate.



Occupancy sensors to detect movement within area.

- Pro's - doesn't require user intervention and can also more accurately match the actual occupancy by detecting user movement and turning on/off as necessary.
- Cons - more capital investment required, more complicated controls, need to ensure that occupancy is adequately detected.



INSTALLATION & CHALLENGES

The works involved the installation of occupancy sensors, associated cabling, building management system (BMS) alterations and testing & commissioning which required a high level of co-ordination between local Estates staff and clinical managers.

Installation

- Occupancy sensors within the clinical areas.
- Cabling between sensors and BMS controllers in plantrooms.
- BMS software strategy alterations.
- BMS graphics updates.
- Testing & Commissioning to ensure correct operation.



Challenges

- Finding cable routes in ceiling voids within occupied areas.
- Co-ordination with clinical teams for access to install sensors and downtimes to test BMS controls.
- Installation of alternative occupancy sensors in some areas as false activations noted during commissioning due to high airflow pressures.



OUTCOMES & NEXT STEPS

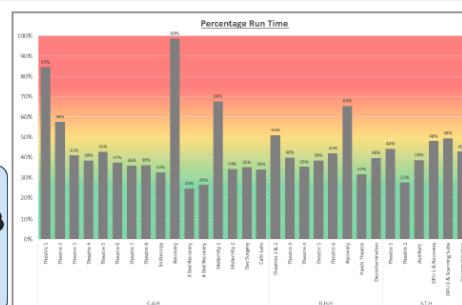
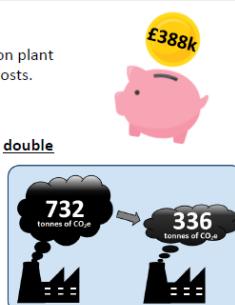
The occupancy sensors provide actual run times for ventilation plant which can then be used to generate more accurate running costs.

Outcomes

- A reduction in running hours of approx. **56%** overall
- An estimated increase in lifespan of plant/components by **double**
- A saving in running costs of **£388k** per year
- A reduction in CO₂ emissions of **396 tonnes CO₂e** per year

Next Steps

- Continuous monitoring of usage
- Update savings based on ever-changing energy rates
- Share occupancy information with other Directorates to inform how best to utilise areas (eg. Theatres).



PROJECT TEAM

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