Trust Policy	Worcestershire Acute Hospitals NHS Trust

Management of Ventilation Systems

Department / Service:	Estates
Originator:	Simon Noon Principal Engineer & Statutory Standards Manager
Accountable Director:	Stephen Welch – Director Estates and Facilities
Approved by:	Ray Cochrane - Head of Estates Infection Prevention & Control Steering Group meeting Trust Management Executive
Approval date:	19th January 2022
Review date: **This is the most current document and should be used until a revised version is in place:**	19th January 2025
Target Organisation(s)	Worcestershire Acute Hospitals NHS Trust
Target Departments	Directorate Managers, Estates, Nursing, Infection Control
Target staff categories	Managers, Technicians, Contractors, Nurses, Doctors, Surgeons

Policy Overview:
This Policy will outline how the Trust manage critical and non-critical ventilation systems affecting patients, visitors and staff in accordance with the requirements of HTM03-01 Part A & B

Latest Amendments to this policy:
Version 01 23rd January 2020 – Document extended for 6 months whilst review takes place with new Director of Facilities and Estates
August 2020- Document extended for 6 months during COVID period – Approved by QGC/Gold Meeting
February 2021- Document extended for 6 months, as per Trust agreement 11.02.2021
August 2021- Document approved for 3 years – Approved by Infection Prevention & Control Steering Group meeting. Jan 22- Ratified by TME
19.07.2023 – Permit Application for Temporary Air Conditioning form updated-Approved by Julie Booth and Simon Noon

Contents page:

Quick Reference Guide

1. Introduction

Ventilation is used extensively in healthcare premises to condition air and modulate air movement in the space and control the environment of the space that it serves. This is for the comfort of occupants and to remove contaminants and harmful micro-organisms at source and dilute contaminants at point of use, reducing the risk of harmful airborne contaminants to patients, staff and visitors.

This Policy sets out the detailed requirements for the maintenance and safe operation of all air conditioning and ventilation plant. These will be maintained so that they do not present a risk to persons either in the vicinity of the plant, in areas served by the plant, or a statutory compliance risk to the Worcestershire Acute Hospitals Trust (referred to as the "Trust").

2. Scope of this document

This Policy applies to the Ventilation systems at Worcestershire Royal Hospital (WRH) Kidderminster Hospital and The Alexandra Hospital

3. Definitions

Duty Holder	Chief Executive. Worcestershire Acute Hospitals NHS Trust
Designated Person	Person who is appointed by the Duty Holder with suitable and sufficient knowledge of Hospital Ventilation Systems, who will make Trust senior management aware of any major risks presented by the hospital ventilation system
Authorising Engineer (Vent) (AE(V))	Person who has completed an accepted Ventilation course, is familiar with the site installation and the requirements of HTM 03-01 and is appointed by the Designated Person to define the requirements of the site, appoint sufficient APs to manage the system and audit the site as required.
Responsible Person / Co-ordinating Authorised Person	Person who has completed an accepted Ventilation course, is familiar with the site installation and the requirements of HTM 03-01 and has been appointed by the authorising engineer as Senior AP Ventilation, coordinates all ventilation activities across WAHT systems.
Authorised Person (AP)	Person who has completed an approved ventilation course, is familiar with the site installation and has been appointed by the AE(Vent) as an AP(Vent)
Competent Person (CP)	Person who is deemed competent by the AP, has relevant training and experience, is familiar with the site installation and has been appointed by the AP vent.

Critical Ventilation System	As defined by HTM03-01, ventilation which supports critical clinical functions
DIPC	Trust Director of Infection Prevention and Control
Enforcing Authority	Health and Safety Executive
UKAS	United Kingdom Accreditation Service (which is currently the sole recognised accreditation body).
HTM	Health Technical Memorandum – published technical guidance regarded as best practice in healthcare
HTM 03-01	The current specific HTM concerned with the safe management of ventilation systems
HTM2025	The previous specific HTM concerned with the safe management of ventilation systems.
Method Statement	Details of how the work is to be done safely.
MSDS	Material Safety Data Sheet supplied by manufacturers of Hazardous Substances – required by COSHH regulations – identifies precautions to be taken when dealing with hazardous substances.
Permit to Work	Safe System of Work, designed to control potentially dangerous activities and reduce risk, by requiring these activities to be under the control of an authorised person
Validation Report	Report by competent contractor detailing the performance of the ventilation system and compliance to the relevant HTM
Verification Report	Annual report as described in HTM03-01-part B

4. Responsibility and Duties

Chief Executive

The Chief Executive has overall responsibility for all matters relating to the management of Hospital Ventilation Systems. The Chief Executive will appoint a Designated Person to ensure the Trust ventilation systems are adequately managed

The Chief Executive will ensure that financial resources are made available to support this Policy based upon an assessment of priorities.

Designated Person (DP)

The DP will ensure that the management of ventilation matters are seen as an important priority for the Trust and are addressed through adoption of this policy and associated procedures that are effectively developed, implemented and appropriately resourced within the overall financial position of the Trust.

The Responsible Person (RP)

Authorising Engineer (AE)

The AE will be suitably qualified and experienced in line with the requirements HTM03-01 and will be appointed in writing, by the Trust DP.

AE Duties

To recommend to the Trust DP and the Project Manager of the PFI FM provider those persons who, through individual assessment, are suitable to be Authorised Persons Ventilation AP(Vent);

To ensure that all APs (Vent) have satisfactorily completed an appropriate training course;

To ensure that all APs (Vent) are initially assessed as to their fitness to be appointed and are re-assessed every three years following attendance at a suitable refresher or other training course prior to their re-assessment.
To conduct an annual audit and review of the management systems of the ventilation, including the Permit to Work System.

To monitor the implementation of the Operational Policy and Procedures.

The Trust will appoint an AE for AHR and KTC sites WRH PFI will have a separate AE appointed by Equans Facilities Management

Authorised Persons (APs)

APs (Vent) are suitably qualified experienced persons who will be appointed in writing by the AE, in accordance with the procedure outlined above.

A minimum of two APs (Vent) are required for the Trust's sites and a further 2 are required for the WRH PFI site. To clearly define responsibilities, The AEs will recommend one AP as the Co-ordinating Authorised Person (CAP) (Vent) with overall responsibility for the systems at the AHR and KTC, WRH will have a CAP appointed by their AE

The formal responsibility for the Ventilation rests with the Chief Executive and Equans Facilities Manager although Authorised Persons (Vent) will assume effective responsibility for the day-to-day management and maintenance of the systems on all sites.

The Responsible Person / Co-ordinating Authorised Person

Responsible for ensuring that this policy is implemented across the Trust and by partner organisations.

For the purposes of the policy the Principal Engineer / Statutory Standards Manager will be the "Responsible Person (RP)" and will oversee the implementation of this policy on behalf of the DP and Duty Holder (Chief Executive) for the Trust.

To co-ordinate Specialist Ventilation activity across WAHT systems, review and act upon validation / verification reports, issue ventilation compliance certificates, chair specialist ventilation groups & attend other meetings as required, nominate APs for training, review new installations and agree specifications, be involved in witnessing testing and commissioning of new systems.

The duties and responsibilities of the Authorised Person (Vent) are:

To ensure that the system operates safely and efficiently in accordance with the statutory requirements and guidelines listed in HTM 03-01

To ensure that critical ventilation systems are verified annually, that verification reports are produced and discussed in Ventilation Validation Committee meetings and that any issues which compromise the safety of the ventilation system are identified and rectified

To be responsible for the Permit to Work System, including the issue of Permits to Competent Persons (Vent) for all servicing, repair, alteration and extension work carried out on the existing Ventilation System;

To be responsible for the supervision of the work carried out by Competent Persons (Vent) and for the standard of that work (A Register of Competent Persons (Vent) must be kept);

To ensure that the Maintenance Service Agreement and schedule of equipment are kept up to date;

To liaise closely with Designated Medical / Nursing Personnel, and others, who need to be informed of any interruption or testing of the Ventilation systems.

In accordance with the Trust's policy on provision of services, provide advice on the provision and / or replacement of ventilation plant and associated systems;

To organise such training of contractors' staff (and other staff if requested) as is needed for the efficient and safe operation of the ventilation system.

Competent Person (Vent)

Note: Competent Persons (CP Vent) are suitably qualified and experienced craft persons, either directly employed by The Trust, employed by the PFI hard FM Provider or by specialist sub-contractors, CPs will be appointed in writing by the site AP. (Vent) contracting companies will be **EN ISO 9001 registered**

The duties and responsibilities of the Competent Person (Vent) are:

To carry out work on the ventilation system in accordance with The Trust's Estates Service Agreement;

To carry out repairs, alterations or extension work, as directed by an AP (Vent) in accordance with the Permit to Work System and HTM 03-01 (June 2021)

To perform any engineering tests required and inform an Authorised Person (Vent) of all test results;

Designated Nursing Officer (DNO) / Designated Medical Officer (DMO)

The clinician in control of the area with Critical Ventilation, who has sufficient knowledge of the risk presented by ventilation systems and the authority to take that area out of use.

The duties and responsibilities of the DNO / DMO (Vent) are:

To work with the AP to plan ventilation works and to make areas available for the time required. To ensure that ventilation systems are left safe from hazards, caused by operational issues. To sign permits to work on Critical Ventilation systems. To accept an area back into use after work has been done or to put an area out of use if the ventilation system presents a significant risk..

Critical Ventilation Safety Group (CVSG)

Any issues to do with the ventilation system will be raised at the CVSG, which will meet quarterly to discuss the verification programme, verification reports, new builds / refurbishments and any other relevant matters. CVSG,shall consist of as a minimum, the Senior APs, including PFI Hard FM provider, relevant Designated Medical Representatives, Infection Prevention and Control Representative, Trust Microbiologist(s), Health and Safety Manager and a Representative from Project Co.

Trust Microbiologist

To work with the Trust APs and Trust infection prevention and control team to provide advice on the risk to patients, staff and visitors from ventilation systems and make recommendations to the DIPC to remove an area from use if, in their expert opinion, the ventilation system is putting patients, visitors or staff at risk.

Trust Director of Infection Prevention and Control (DIPC)

To make decisions on the safety of ventilation based on their own knowledge and experience, advice of specialist contractors, representation form the directorate involved, Trust APs and Trust microbiologists.

5. Policy detail

This Policy requires that all ventilation and air conditioning equipment is installed, inspected, serviced and maintained in accordance with all Statutory Instruments, NHS Guidelines, Health Technical Memorandums (HTM) and manufacturer's instructions so that such equipment does not pose a health or operational risk to staff, patients or visitors.

Aim

The aim of this Policy is to;

Ensure the ventilation systems are Inspected and maintained to ensure the safety of staff, patients and visitors, and ensure maximum reliability and efficiency of plant and equipment

Ventilation Drawings and records

Site APs will maintain;

- A schedule of ventilation equipment, each system identified by a unique number
- Ventilation compliance certificates for each verified room
- Accurate as fitted drawings
- Statutory records and documents
- Permit to Work books, including completed books.
- O&M manuals / performance data sheets for ventilation plant and equipment
- Validation and Verification Reports
- Contractor files, containing service contracts, PPM schedules, PPM specification, service sheets for reactive and PPM maintenance, minutes of meetings, training records.
- List of all site AEs (V) / APs (Vent) / CPs (Vent) with training dates and appointment dates and re-training / re-appointment dates

- Up to date contact numbers for all personnel contracted and in house involved in the Ventilation system in and out of hours.
- Up to date calibration records for all test equipment including contractors' test equipment.

Permit to Work System:

The aim of the **Permit to Work (Appendix D)** System is to safeguard the integrity of critical ventilation systems, and therefore the safety of patients.

A Permit must be issued by an Authorised Person (Vent) before any work is undertaken on a critical ventilation system, an exception to this will be an emergency isolation by a member Estates staff or Fire Brigade.

The Permit to Work will be issued and the work will be carried out following the directions of HTM 03-01 unless otherwise defined in this Policy.

Responsibility for allowing the work to be carried out lies with the DMO / DNO and they will sign the Permit to Work.

Planned interruption:

A planned interruption is required to repair, or modify a ventilation system. An Authorised Person (Vent) shall supervise any planned interruption in strict accordance with the Trust Permit to Work System. All planned interruptions to critical ventilation systems shall be notified to and discussed at Ventilation Safety Group meetings.

Certification of Ventilation Systems

On completion of any works which will affect a critical ventilation system or Annually, the Trust will engage a specialist ventilation company or in-house ventilation CP to carry out verification of the affected space. Using calibrated equipment, the CP will measure air flow and differential pressures and will confirm to the AP (Vent) that the space complies to HTM03-01 or not. If the tests are satisfactory, the AP(Vent) will issue a **Hand Back Certificate (appendix E)** to the departmental representative, stating that the works have been completed to the AP's satisfaction and the area is safe to be taken back into use.
If the area has not passed the validation / verification criteria, the AP will meet with the department representative, an infection prevention and control representative and the Trust microbiologist and they will assess the risk together. Following identification of any risk, the group will discuss if any control methods can be introduced to mitigate the risk, the works required to bring the area back into use or make a recommendation to the DIPC that the area should remain closed.
If the area is deemed acceptable or safe to be used with controls, the AP will complete a Hand Back certificate identifying the procedures that can be done and the controls required to keep the space operational. When the verification report is received the AP will complete a **Ventilation Compliance Notice (appendix G)** The process is illustrated in **The Ventilation flow chart (appendix F)**

Portable Air Conditioning Units

Portable air conditioning units will be hired as and when required, to mitigate excessive building temperatures.

Before any portable air conditioning is issued, the department requesting the temporary air conditioning will complete a permit for temporary air conditioning **(appendix J).** Temporary air conditioning can only be issued by the Estates Department following completion of a permit. Temporary air conditioning must not be bought into any Trust building or department without

consulting Estates. Failure to comply with this could result in a serious healthcare acquired infection.

Description of Ventilation Systems and Classification

Ventilation systems within the Trust are divided into two categories; critical and non-critical. The criterion below defines those ventilation systems which are considered critical:

- Operating theatres of any type, including rooms used for interventional investigations (for example catheter laboratories)
- Patient isolation facility of any type
- Critical care, intensive treatment or high-dependency unit
- Neonatal unit
- Category 3 or 4 laboratory or room or cabinet
- Pharmacy aseptic suite
- Inspection and packing room in a sterile services department, sterile endoscope re-processing rooms
- MRI, CAT and other types of emerging imaging technologies that require particularly stable environmental conditions to remain within calibration
- Any system classified as an LEV system under the COSHH Regulations
- Any other system that clearly meets the definition
- The loss of service from such a system would seriously degrade the ability of the premises to deliver optimal healthcare.

The Head of Estates is responsible for ensuring that an inventory of critical and non-critical ventilation systems is kept up to date. This inventory will be discussed and signed off by the Infection Prevention and Control Team. The importance of this definition is to determine the maintenance regime. Sample sheet **Appendix A**.

Inspection, Condition Assessment and Operational Parameters

The Trust has a range of ventilation plants of varying age and to meet all the criteria of HTM03 may not necessarily be appropriate. To ensure any required replacement is identified and correctly prioritised, an initial assessment of condition and compliance will be made. The systems will be graded into the categories indicated within HTM03; this grading system gives guidance on the best course of action for each grade. The funding requirement for each system will then be added to the Estates Backlog Maintenance Risk Weighted Capital Bid Register. This process will be repeated on a five yearly basis or when changes are to be made. The sheet for initial assessment is attached at **Appendix C**.

Maintenance Tasks

Ventilation System Plant Inspections (Quarterly, 6 Monthly and Annual)

All ventilation systems, as a minimum, will be subject to the required maintenance and inspection requirements of HTM 03-01, Manufacturers recommendations and good industry practice in cases of conflict between standards maintainer should adopt whichever is the more onerous. (**Appendix A / C)**

Annual Verification for Critical Ventilation Systems

All critical ventilation systems will be subject to an annual verification to ensure:

The ventilation system should achieve not less than 75% of the design air-change rate given in Appendix 2 HTM03-01 part A, or its original design parameters. Old design parameters based on plant age can be obtained from HTM 2025

The pressure regime should achieve not less than 75% of the design value given in Appendix 2 of Part A, or its original design parameters, and the pressure gradient relationships with regards to surrounding areas must be maintained. Old design parameters based on plant age can be obtained from HTM 2025.

Please Note, however if a system which has just been maintained and verified 75% performance should not be accepted, as this will allow no deterioration factor, from filters, drive belts etc. 75% on verification should be investigated and improved if at all possible and the AP vent should make users aware of any resulting risk.

The sound levels quoted in HTM 03 Part B Table 2 are maximum permissible levels and should not be exceeded. Measurements should be made using at least a Type 2 sound meter fitted with a muff. Its accuracy should be checked using a calibration sound source before use.

Further guidance from HTM03-01 Part B paragraphs 4.19 to 4.28 are followed as appropriate for:

Vertical ultra-clean operating theatres
Horizontal ultra-clean operating theatres
Category 3 and 4 laboratories
Pharmacy aseptic suites
Sterile Service packing and inspection rooms
LEV"s

Filter Changing

The routine changing of filters should be carried out either when the manometer across the filters reaches the designed change limit or on a time basis, provided the designed manometer maximum pressure differential is not exceeded. Suitable records of filter changes will be kept. Filters on LEV's from Hazardous areas should be subject to a permit to work and careful consideration should be given to protect maintenance staff from any harm while changing these filters. All required precautions should be noted on the Permit to Work

Cleaning of Chilled Water Circuits

Chilled water refrigeration units must be inspected, cleaned with hot water at least once a year. Details of this process are contained within the Trust Water Safety Plan; this work may be contracted out, any works that are contracted out will be covered by a detailed specification under the Trust's contracting arrangement.

Frost Protection

Trust ventilation systems will have frost protection in the event of very low outside air temperatures or plant faults.

Fire Dampers

Fire dampers are fitted in the ventilation system where ducts pass through fire walls and barriers. There are two general types of dampers:

Fusible link spring loaded dampers fitted to older buildings, which require heat from a fire to activate and will not stop smoke penetration prior to the fusible link activating the damper.

Motor driven spring-loaded fire dampers, activated by the fire alarm system fitted to newer buildings, designed to stop smoke on fire alarm activation. These dampers will be subject to periodic servicing and testing at a frequency specified in Appendix A and appropriate records kept.

Ventilation Supply and Extract Grill Cleaning

The ventilation supply and extract grills are to be cleaned to ensure that dust does not build up and cause an infection control risk all grills will be cleaned six monthly. Theatre grills will be subject to a higher level of inspection to ensure they are clean. In addition, the High Level Cleaning Team will clean any supply or extract grill that is reported as being dirty by clinical staff or if noticed during a routine audit.

Cleaning Following Verification or Maintenance

Prior to arranging any work on a ventilation system the AP(Vent) shall contact the Facilities housekeeping / ISS cleaning manager and arrange for cleaning the room before the system is handed over. The cleaning manager after having ascertained the level of contamination shall consult with infection control and determine the appropriate cleaning agents and methodology. Following the clean, the Facilities Manager will issue a cleaning certificate to the Ventilation AP

Mothballing Plant

It may be necessary to stop the use of plant but maintain it in an operational condition for an extended or undetermined period. For this scenario refer to the equipment O&M manual for details.

To re-instate the plant, a commissioning procedure will need to be written for the specific plant; guidance on this procedure should be sought from HTM03-01, the Authorised Person (Ventilation) and the Infection Prevention and Control Team.

Mothballing Split Air Conditioning

It may be necessary to mothball split air conditioning plant, in this configuration the written scheme in the procedures manual will be adhered to.

To re-instate the split air conditioning plant, a commissioning procedure will need to be written for the specific air conditioning unit; guidance on this procedure will be sought from HTM03-01, the AP (V) and the Infection Prevention Control Team.

Monitoring and compliance

Page/ Section of Key Document	Key control:	Checks to be carried out to confirm compliance with the Policy:	How often the check will be carried out:	Responsible for carrying out the check:	Results of check reported to: *(Responsible for also ensuring actions are developed to address any areas of non-compliance)*	Frequency of reporting:
	WHAT?	**HOW?**	**WHEN?**	**WHO?**	**WHERE?**	**WHEN?**
	Ventilation Policy	Review	Yearly or if an incident occurs or law changes	Vent RP Ventilation / Validation Committee and TIPCC / DP,	New document uploaded onto intranet.	yearly
	Ventilation Procedures	Review	Yearly or if an incident occurs or law changes	Vent RP / DP	New document uploaded onto intranet.	yearly
	Training	Review Training Matrix	Yearly or if an incident occurs or law changes	Vent RP / DP Estates Officers	Training Matrix held on Estates drive, training refreshers done 3 yearly	yearly
	Safe system of work	Audit	Yearly or if an incident occurs	Vent RP/ APs, DP, Risk Manager	Report issued to Director of Estates / DP	yearly
	Incident Reports	Review	Quarterly	Vent RP	Report issued to Director of / DP	quarterly
	Verification	Reviewed by Ventilation Validation Committee	Annual	AP	Report issued to DP, RP, Head of Department, infection Control, Ventilation Validation Committee, TIPCC	Annual
	Quarterly Vent Report to Ventilation Validation Committee, TIPCC	Reviewed by Ventilation Validation Committee and TIPCC	Quarterly	Vent RP	Ventilation Validation Committee, TIPCC	quarterly

Policy Review

This Policy will be reviewed annually by the Principal Engineer / Statutory Standards Manager, the Head of Estates and the Health and Safety Manager

6. References: **Code:**

The Medicines Act 1968	
Health and Safety at Work, etc Act 1974	
The Management of Health and Safety Regulations 2003	
Workplace (Health, Safety and Welfare) Regulations 1992. SI 1992 No 3004. HMSO, 1992.	
Control of Substances Hazardous to Health (COSHH) regulations 2004	
Manual Handling Operations Regulations 1992	
Personal Protective Equipment at Work Regulations 2002	
Provision and Use of Work Equipment Regulations 1998. SI 1998 No 2306. HMSO, 1998.	
Building Regulations 2000: Approved Document B: Fire Safety – Volume 2. Department for Communities and Local Government, 2005.	
Building Regulations 2000: Approved Document F: Ventilation. Department for Communities and Local Government, 2006	
L2A: Conservation of fuel and power in new buildings other than dwellings. Department for Communities and Local Government, 2006.	
L2B: Conservation of fuel and power in existing buildings other than dwellings. Department for Communities and Local Government, 2006.	
HTM 03-01-part A Design, Installation, Validation and Verification	
HTM 03-01-part B Operational Management	
HTM 04-01 – The control of Legionella, hygiene, “safe” hot water, cold water and drinking water systems.	
HSG274 Part 2: The control of legionella bacteria in hot and cold-water systems	
Trust Water Safety Plan	

7. Background

7.1 Equality requirements

The contents of this policy has no adverse effect on equality and diversity

7.2 Financial risk assessment

Some additional training will be required to have the necessary Responsible and competent people in place, but this is a statutory requirement.

7.3 Consultation

Consultation will take place with Estates and Facilities, IPCT, Project Co and the Hard and Soft FM service providers, Trust risk management department and clinical staff.

Contribution List

This key document has been circulated to the following individuals for consultation;

Designation
Director of Estates and Facilities
Chief Operating Officer
Head of Estates
Head of Facilities
Trust Health and Safety Manager
Technical Services Manager
Estates Officer Kidderminster
Estates Officer AHR
Project Co General Manager
Equans Facilities Manager
Equans Ventilation APs
ISS General Manager
Trust Microbiologist
Trust DIPC
Trust Deputy DIPC

This key document has been circulated to the chair(s) of the following committee's / groups for comments;

Committee
AE vent for initial approval
Ventilation Safety Group
TIPCC

7.4 Approval Process

This document will be circulated round all interested parties before being approved as fit for purpose by the ventilation committee. Once approved the document will be approved by TIPCC before being approved by the Trust Board

7.5 Version Control

This section should contain a list of key amendments made to this document each time it is reviewed.

Date	Amendment	By:
23/08/17	Issue 1	S. Noon
19/08/21	Issue 2	S. Noon

Supporting Document 1 - Equality Impact Assessment Tool

To be completed by the key document author and included as an appendix to key document when submitted to the appropriate committee for consideration and approval.

Please complete assessment form on next page;

NHS Worcestershire Acute Hospitals NHS Trust

Herefordshire & Worcestershire STP - Equality Impact Assessment (EIA) Form
Please read EIA guidelines when completing this form

Section 1 - Name of Organisation (please tick)

Herefordshire & Worcestershire STP		Herefordshire Council		Herefordshire CCG	
Worcestershire Acute Hospitals NHS Trust	✓	Worcestershire County Council		Worcestershire CCGs	
Worcestershire Health and Care NHS Trust		Wye Valley NHS Trust		Other (please state)	

Name of Lead for Activity	**Simon Noon**

Details of individuals completing this assessment	**Name**	**Job title**	**e-mail contact**
	Simon Noon	**Principal Engineer**	**simon.noon@nhs.net**
Date assessment completed	**02/12/2021**		

Section 2

Activity being assessed (e.g. policy/procedure, document, service redesign, policy, strategy etc.)	**Title: Ventilation Policy**			
What is the aim, purpose and/or intended outcomes of this Activity?	To ensure the Trust is managing Ventilation systems in accordance with all principles of law and relevant guidance and is managing any risk through a safe system of work and appropriate Permit to Work system			
Who will be affected by the development & implementation of this activity?	✓ ✓ ✓ ✓	Service User Patient Carers Visitors	✓ ✓ ❑ ❑	Staff Communities Other _____
Is this:	✓ Review of an existing activity ❑ New activity			

	❑ Planning to withdraw or reduce a service, activity or presence?
What information and evidence have you reviewed to help inform this assessment? (Please name sources, eg demographic information for patients / services / staff groups affected, complaints etc.	This is a Technical policy which we have written in consultation with the various technical standards, ACOPs, HTMs.
Summary of engagement or consultation undertaken (e.g. who and how have you engaged with, or why do you believe this is not required)	We have consulted our Authorising Engineer Ventilationl) We have bought this for peer review at the Ventilation safety group and presented it to the IPCSG
Summary of relevant findings	The policy has been deemed fit for purpose

Section 3

Please consider the potential impact of this activity (during development & implementation) on each of the equality groups outlined below. **Please tick one or more impact box below for each Equality Group and explain your rationale**. Please note it is possible for the potential impact to be both positive and negative within the same equality group and this should be recorded. Remember to consider the impact on e.g. staff, public, patients, carers etc. in these equality groups.

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Age			✓	Having a policy to ensure the Ventilation systems are safe and compliant cannot be anything than a benefit to all
Disability			✓	Having a policy to ensure the Ventilation systems are safe and compliant cannot be anything than a benefit to all
Gender Reassignment			✓	Having a policy to ensure the Ventilation systems are safe and compliant cannot be anything than a benefit to all
Marriage & Civil Partnerships			✓	Having a policy to ensure the Ventilation systems are safe and compliant cannot be anything than a benefit to all
Pregnancy & Maternity			✓	Having a policy to ensure the Ventilation systems are safe and compliant cannot be anything than a benefit to all
Race including Traveling Communities			✓	Having a policy to ensure the Ventilation systems are safe and compliant cannot be anything than a benefit to all
Religion & Belief			✓	Having a policy to ensure the Ventilation systems are safe and compliant cannot be anything than a benefit to all
Sex			✓	Having a policy to ensure the Ventilation systems are safe and compliant cannot be anything than a benefit to all

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Sexual Orientation			✓	Having a policy to ensure the Ventilation systems are safe and compliant cannot be anything than a benefit to all
Other Vulnerable and Disadvantaged Groups (e.g. carers; care leavers; homeless; Social/Economic deprivation, travelling communities etc.)			✓	Having a policy to ensure the Ventilation systems are safe and compliant cannot be anything than a benefit to all
Health Inequalities (any preventable, unfair & unjust differences in health status between groups, populations or individuals that arise from the unequal distribution of social, environmental & economic conditions within societies)			✓	Having a policy to ensure the Ventilation systems are safe and compliant cannot be anything than a benefit to all

Section 4

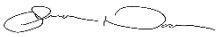
What actions will you take to mitigate any potential negative impacts?	Risk identified	Actions required to reduce / eliminate negative impact	Who will lead on the action?	Timeframe
	None	.		
	None			
	None			
How will you monitor these actions?	**N/A**			
When will you review this EIA? (e.g in a service redesign, this EIA should be revisited regularly throughout the design & implementation)	**When policy is reviewed**			

Section 5 - Please read and agree to the following Equality Statement

1. Equality Statement

1.1. All public bodies have a statutory duty under the Equality Act 2010 to set out arrangements to assess and consult on how their policies and functions impact on the 9 protected characteristics: Age; Disability; Gender Reassignment; Marriage & Civil Partnership; Pregnancy & Maternity; Race; Religion & Belief; Sex; Sexual Orientation

1.2. Our Organisations will challenge discrimination, promote equality, respect human rights, and aims to design and implement services, policies and measures that meet the diverse needs of our service, and population, ensuring that none are placed at a disadvantage over others.
1.3. All staff are expected to deliver services and provide services and care in a manner which respects the individuality of service users, patients, carer's etc, and as such treat them and members of the workforce respectfully, paying due regard to the 9 protected characteristics.

Signature of person completing EIA	
Date signed	02/12/2021
Comments:	
Signature of person the Leader Person for this activity	
Date signed	02/12/2021
Comments:	

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	Yes – subcontracted AE
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	Yes APs and CPs
	Other comments:	Implementation is a statutory requirement and could be considered a cost avoidance measure

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval

Appendix A

Frequency of Maintenance								
Type of System	Critical with cooling or humidification	Critical without cooling or humidification	Non-critical with cooling or humidification	Non-critical without cooling or humidification	Split A C	Portable AC unit	Fire Damper fusible link Annual Test	Fire Damper Motor driven Annual check
Annual inspection	X	X	X	X				
Annual validation	X	X						
Quarterly inspection	X	X						
Quarterly coil clean	X							
Six-monthly coil clean			X					
Six-monthly clean								
Filter change periodicity	6month or sooner if required							
5-year compliance inspection	X	X	X	X	X			
Pre use inspection and clean						X		
Fire damper inspection and function test							X	X

Appendix B

WAHT assessment of condition of Ventilation Plant against HTM03-01 criteria

Hospital	
Plant Room	
AHU	
Area served by AHU	
Age of Unit	
Manufacturer	

General Condition	End useful life		Poor		Average		Good	
Compliance with minimum Standards			Poor		Average		Good	
Maintenance Quality			Poor		Average		Good	

Description of faults or work required

Appendix C Annual Inspection of Critical Ventilation Systems – AHU and Plantroom equipment

No	Survey Question	Yes	No	Comments
1	Plant running			
2	Is the unit and associated plant secure from unauthorised access			
3	Is the unit safely accessible for routine maintenance?			
4	Is the air intake positioned to avoid short circuiting with extract or foul air from other sources e.g. AGSS outlets?			
5	Are all inspection lights operating			
6	Are motorised dampers fitted to the intake and discharge			
7	Are fan motors outside of the air stream?			
8	Is the fan drive train visible without removing covers?			
9	Is the cooling coil located on the discharge side of the fan?			
10	Is an energy-recovery system fitted (state type)?			
11	Are condensate drainage systems fitted to all energy recovery systems, cooling coils and humidifiers? (in accordance with chapter 3 HTM03-01 part B)			
12	Are drainage traps clean and filled with water? (see Table 3 in Health Technical Memorandum 03-01, Part B)			
13	Is the drain trap air break at least 15 mm?			
14	If a humidifier is fitted, state the type –			
15	Is the humidifier capable of operation?			
16	Is there space to safely change the filters?			
17	Are there test holes in the principal ducts?			
18	Are the test holes capped?			
19	What is the general condition of the exterior of the AHU?			
20	Are the principal ducts lagged?			
21	What is the general condition of the associated control valves and pipework?			
22	Is the pipework adequately lagged?			
23	Is the system clearly labelled?			
24	Record main filter differential pressure			
25	Record pre-filter differential pressure			

26	Does the plant have frost protection?			
				Switch plant off. Fit padlock to isolator
27	Did the motorised dampers close on plant shut-down?			
28	Is the intake section including insect screen and fog coil clean?			
29	Are the pre-filters correctly fitted with no air bypass?			
30	Where applicable, are all drive belts correctly tensioned and aligned?			
31	Is the cooling matrix clean?			
32	Are all drip-trays fully accessible or capable of being removed for cleaning and have a fall to drain?			
33	Are the drainage trays stainless?			
34	Are the drainage trays clean?			
35	Are there any signs of water ponding in the AHU?			
36	Is the heater matrix clean for each heater battery?			
37	Have the main filters been correctly fitted with no air bypass?			
38	Are the AHU and its associated main ductwork clean internally?			
39	Did all BMS alarms activate on BMS front end and plantroom control panel?			
				Energise Plant
40	Did unit restart satisfactorily			
				Test Automatic fan changeover
41	Did auto changeover operate?			

Appendix D Permit to work

VENTILATION PERMIT TO WORK			
Permit to work date:		Ref:	
Location of the work:			
Work Description:			
Work Activity covered in this permit:			
Isolations Required: eg: Elec/Gas/Alarms			
Known Hazards:			
Risks:			
Section B- Control Measures: - Steps taken & steps to be taken to reduce risks			
Work is to be performed by a competent person, If a method statement and risk assessment has been carried out, these must be attached to this permit.			
Measures:			
Issued by Site Authorised Person			
As DMO / DNO I confirm and understand the content of this permit and that no works than the work activity specified will be carried out.			
Name:	Signature:		
Received by Competent Person (Who will be carrying out the work)			
As Competent Person I confirm and understand the content of this permit and that no works than the work activity specified will be carried out.			

Appendix E Hand Back Certificate

Name:	Signature:

VENTILATION HAND BACK CERTIFICATE

Date handed back:		Ref:	
I have submitted this Hand Back Certificate and declare that the work as stated on the Permit to work has been fully completed.			**YES / NO**
I have submitted this Hand Back Certificate and declare that Verification Test results are acceptable			**YES / NO**

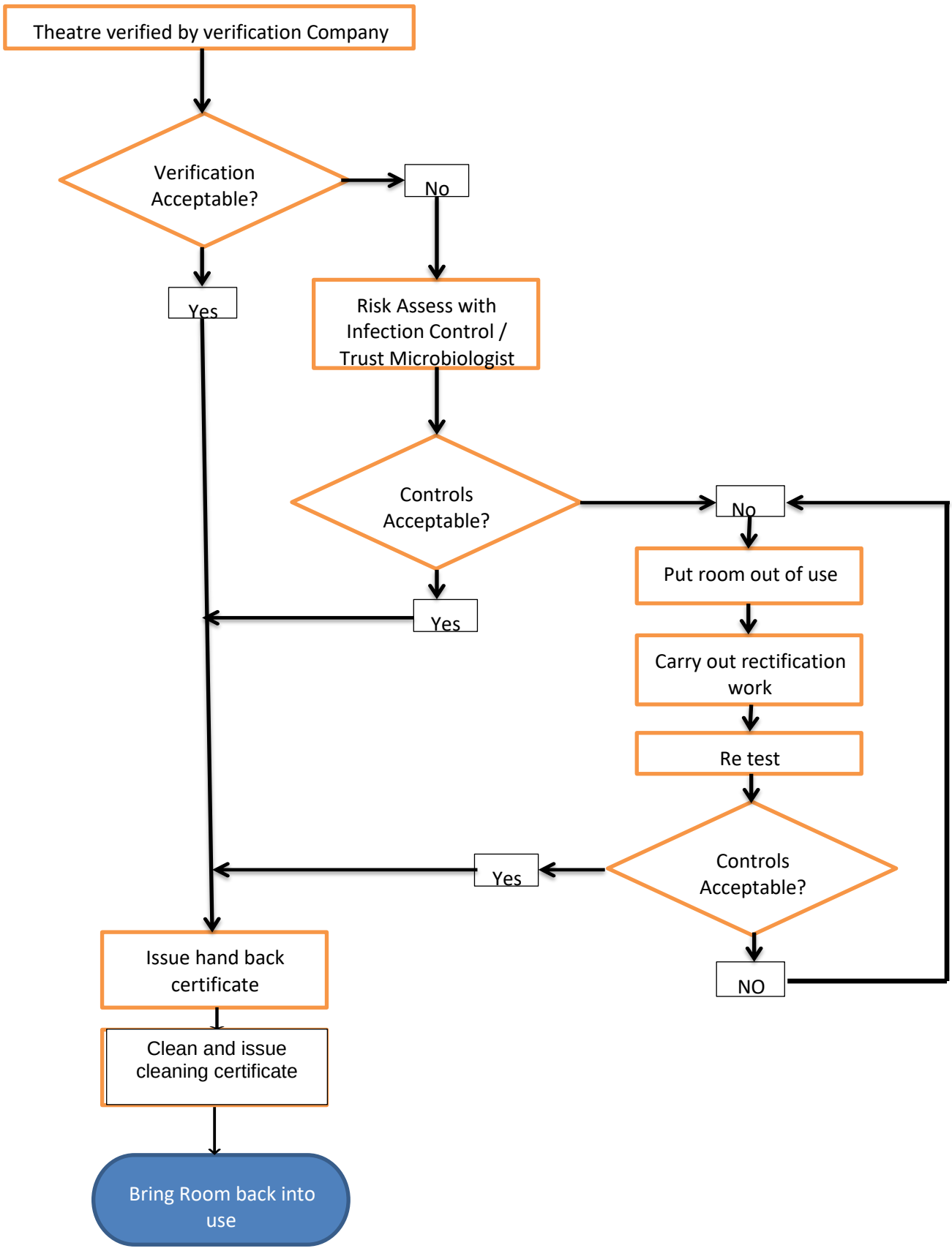
Provide details of work not completed / Tests failed:
Are there hazards or risks due to the non-completed work / tests failed? Describe these and measures you have taken:
Controls required to allow continued use of this room / facility:

Room Cleaned	Type of Clean	Name	Signature
YES / NO	HPV / Tristel / Bleach		

System Safe to Use ☐	Safe to Use With Controls ☐	Not Safe to Use ☐

Returned by Competent Person	
I have advised the AP (Vent) of all the work and tests carried out and provided details of the installation.Test results **are / are not** satisfactory. The system has been left in a safe condition	
Name:	Signature:
Received by Authorised Person	
As Authorised Person I confirm and understand that all Test Results A**re / Are Not** satisfactory and the system **May / May Not** be taken back into use	
Name:	Signature:
Received by DNO / DMO	
I declare that all aspects of the work have been explained to me. I hereby accept that the system **Is Ready / Not Ready** for service and will undertake to advise all appropriate staff of this service status	
Name:	Signature:

Appendix F Verification Flow Chart



NB This document to Be displayed outside verified room until Ventilation Compliance Notice Issue
Appendix G – Ventilation Compliance Notice

Ventilation Compliance Notice

This Theatre has been tested in accordance with the ventilation criteria as set out in HTM03-01;
(Name) Theatre **(Hospital)**

Compliance Level with Relevant Standard – **(Applicable Standard / Colour)**

Key to Condition:
Poor – Measured air flow rates, air change rates and pressure differentials do not conform to required standards. System not performing as a "critical system"

Average - Measured air volumes, air change rates and pressure differentials approximate to the original design values but with some departures. System is performing as a "critical system" but with a margin of difference to the specific criteria

Good - All measured air volumes, air change rates and pressure differentials are within stipulated tolerances of the relevant standards. System is performing as a "critical system"

Remedial Works Required: **(complete as required or N/A)**

System Safe to Use ☐	Safe to Use With Controls ☐	Not Safe to Use ☐
Authorised Person (Ventilation): **Name** (Print)	Signature: **(Signature of AP - vent)**	
Date of Last Verification: **(Relevant Date)**	Due Date for Next Verification: **(Relevant Date)**	

Diagram of theatre showing air changes and pressure cascade

The Trust has agreed these rooms as being suitable for the following procedure

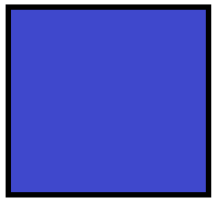
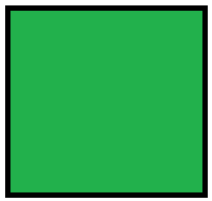
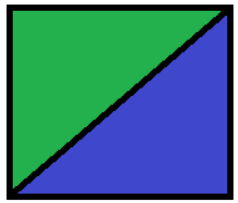
☐ ☐ ☐ ☐ ☐ **(Delete coloured square/s as appropriate)**

Department Head: **Name** (Print)	Signature: **(Signature of AP)**

Appendix H Ventilation parameters

WAHT Ventilation Risk Parameters				
Band 1 Insignificant 6AC/hr	**Band 2 Minor Risk 10 AC/H**	**Band 3 Significant Risk 15 AC/H**	**Band 4 High Risk 25 AC/ H**	**Band 5 Major Risk UCV laminar flow**
Routine care/ minor interventions Chest drain insertion, incision of the dermis or epidermis <2cm area, superficial wound debridement, uncomplicated wound dressings Sterile pack store and clean utility.	Insertion invasive long term devices Superficial incisions adipose level, insertion of mid or central lines in critical care areas. Dressing changes not involving beyond adipose tissue.	Insertion of implanted/tunnelled devices/ day surgery/ wounds >2cm but not involving organ space, birthing rooms/ recovery rooms/ cardiac catheterisation lab/ anaesthetic rooms/ endoscopy treatment rooms	Surgical procedures (open and laparoscopic) Deep vac - negative pressure wound therapy	Insertion of prosthetic implants or other high risk surgery

Appendix I Isolation Room Ventilation Parameters

WHAT Isolation Room Ventilation Risk Parameters		
		
Blue Square denotes a negative pressure room, these rooms should be used for patients who are Infectious – where other people can be harmed by exposure to their condition	Green Square denotes a positive pressure room, these rooms should be used for patients who are Neutropenic – can be harmed by exposure to pathogens	A Blue / Green square denotes a switchable room, these room can be made either positive or negative. The room will have a gauge outside showing the pressure status of the room as positive or negative. Clinical staff must always check the pressure status of a room before putting a patient into a room and ensure the pressure setting is correct. If staff are unsure of the pressure status or do not know how to change the pressure status they should contact Estates for guidance

Appendix J Permit for temporary air conditioning

Permit application for Temporary Air Conditioning

Please note sections will also need to be completed by both Estates and Infection Control before a permit can be issued.

Part 1 - To be completed by Requester or Ward area			
Ward or Area		**Room Number**	
Name of Matron/Ward Manager making request			
Reason for request			
Budget Code		**Signature**	
Date			

Part 2 – To be completed by Estates Officer		
Name		
Is room temperature excessive	Yes ☐	No ☐
Is heating on	Yes ☐	No ☐
Is ventilation working	Yes ☐	No ☐
Excessive solar load	Yes ☐	No ☐
Excessive electrical load	Yes ☐	No ☐
Other fault causing overheating	Yes ☐	No ☐
Date		**Room temperature**

There are no faults causing overheating and that the unit can be positioned safely, powered safely, does not block access / egress, there is a safe way to vent rejected heat. **Are the above requirements stated above met**: Yes ☐ No ☐	
Training has been provided to nursing staff on care of the unit and the daily checks / cleaning required.	Yes ☐ No ☐
Signature for temporary air conditioning approval	
Serial No / Asset No of air conditioning unit supplied	

Part 3 To be completed by Infection Control		
Neutropenic patient risk acceptable (documented risk assessment required for use with this patient group)	Yes ☐	No ☐
Is there an outbreak on the ward?	Yes ☐	No ☐
Is the area known to have poor air quality?	Yes ☐	No ☐
Are aerosol generating procedures completed in department?	Yes ☐	No ☐
Have clinical staff received the maintenance guidance and record sheets?	Yes ☐	No ☐
Any additional controls required:		
Permission granted for area to have temporary air conditioning	Yes ☐	No ☐

Name	
Signature	
Date	

Part 4 – Acceptance - To be filled in by Department Manager / Matron

I understand that I am responsible for ensuring these temporary air conditioning units are supplied for the specific patient group identified and will not be moved elsewhere (even within the same department).

I will ensure for the sake of patient safety that the units are checked, kept clean, filters are cleaned and drip trays are emptied daily in line with instructions given.
If at the end of the hire period the unit assigned to me cannot be found the department will pay the replacement cost.

I will ensure that should any fault occur with a unit, it will be switched off immediately and the fault reported to Estates via the helpdesk.

Name	
Signature	
Date	