



**Building Reopening
Ventilation Systems Operations
In the light of the coronavirus (Covid 19) outbreak**

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| Section Lead: | Sheila Scott |
| Author: | Dan Najdrowski |
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Revision Table

| Revision | Author | Date | Reason for change |
|-----------------|---------------|------------------|---|
| 01 | DN | 08-July-2020 | Original Issue |
| 02 | DN | 14 August 2020 | Revision number updated to acknowledge review of the newly published document: REHVA Covid-19 Guidance Document, August 3, 2020 Following the review, no changes to the documents were made. |
| 03 | SS | 11 December 2020 | Revision number updated to acknowledge review of the newly published document: Health and Safety Executive (HSE) Ventilation and air conditioning during the coronavirus (COVID-19) pandemic; 3 December 2020 Chartered Institution of Building Services Engineers (CIBSE) COVID-19 Ventilation Guidance version 4, 23 October 2020 The Federation of European Heating, Ventilation and Air Conditioning Associations (REHVA) COVID-19 guidance document, August 3, 2020 Scottish Government Document: Coronavirus (COVID-19): universities, colleges and student accommodation providers to help reduce the spread of COVID-19. 7 th of December 2020 |



Contents

| | |
|--|----|
| 1. Introduction | 6 |
| 2. General Principles | 6 |
| 3. UoE Application of Industry Recommendations | 7 |
| 4. Building Reopening process – Roles & responsibilities | 10 |
| 5. Further Steps | 10 |



1. Introduction

As part of the building reopening process, The University of Edinburgh Estates Operations Group, has reviewed current industry guidance and advice in relation to the potential risks associated with the operation and maintenance of building ventilation systems. We are committed to taking all reasonable steps to minimise the potential for airborne spread of COVID 19.

The actions we have taken are based on the guidance listed below together with a review by our in-house technical specialists for each of our buildings:

- Health and Safety Executive (HSE) Ventilation and air conditioning during the coronavirus (COVID-19) pandemic; 3 December 2020
- Chartered Institution of Building Services Engineers (CIBSE) COVID-19 Ventilation Guidance version 4, 23 October 2020
- The Federation of European Heating, Ventilation and Air Conditioning Associations (REHVA) COVID-19 guidance document, August 3, 2020
- Scottish Government Document: Coronavirus (COVID-19): universities, colleges and student accommodation providers to help reduce the spread of COVID-19. 7th of December 2020

2. General Principles

HSE say that:

1. Good ventilation can help reduce the risk of spreading coronavirus, so focus on improving general ventilation, preferably through fresh air or mechanical systems
2. The risk of air conditioning spreading coronavirus (COVID-19) in the workplace is **extremely low** if there is an adequate supply of fresh air and ventilation.
3. You can continue using most types of air conditioning systems as normal, but if you use a centralised ventilation system that removes and circulates air to different rooms it is recommended that you turn off recirculation and use a fresh air supply.

Please refer to table 3 below for the University's application of industry recommendations.

3. UoE Application of Industry Recommendations

The above principles will be specifically applied as the following measures applied on various HVAC components, during the building opening process.

| HVAC Components | | | Roles / Responsibilities | | |
|-----------------|------------------------------------|---|--|--|--|
| No | System / Component | Description | BMS | Trades | Building Users |
| 1 | Supply Fan / Extract fan | <p>Change the clock times of the system timers to run ventilation at nominal speed at least 2 hours before the building usage time and switch to lower speed 2 hours after the building usage time.</p> <p>In demand-controlled ventilation systems change CO2 set point to lower, 400 ppm value, in order to maintain the operation at nominal speed.</p> <p>Keep the ventilation on 24/7 with lower ventilation rates when people are absent.</p> | Phase 1 -Set to 24/7 where controlled via BMS. (Phase 2 - review if night time set back can be applied) | Apply setting to all non-BMS systems | Confirm building operation time, if different from 7am - 7pm |
| 2 | Mixing boxes (Recirculating Boxes) | Close the recirculation dampers (via the Building Management System or manually). | Phase 1: Change setting to 100% fresh air via BMS system. | Confirm BMS settings applied. Apply setting to all non-BMS systems | NA |
| 3 | Thermal Wheel | <p>The wheel to remain turned off during warmer time of the year.</p> <p>The system should be checked and re-instated if necessary, prior to winter months.</p> | Thermal Wheels switched off or bypass mode. Phase 2 -prior to winter check if the unit can withstand full 100% fresh air | Confirm BMS settings applied. Apply setting to all non-BMS systems | NA |

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| 4 | Localised toilets - mechanical ventilation | In toilet blocks with mechanical extract ventilation the extract ventilation should remain constantly on where possible and windows in the toilet block remain closed | Set to 24/7 where controlled by BMS | Apply setting to all communal systems, where practicable and not operated by BMS setting | Building occupants should keep these fans on where possible. Building users inform the helpdesk in the event of local fan failure |
| 5 | Fan Coil Units | Current HSE advice suggests that we do not need to adjust air conditioning systems that mix some of the extracted air with fresh air and return it to the room as this increases the fresh air ventilation rate. Also, we do not need to adjust systems in individual rooms or portable units as these operate on 100% recirculation. Where practicable these units have been set to 24/7 operation. | Set to 24/7 where controlled by BMS | Apply setting to all non-BMS systems | Identify local recirculation units (DX) not required for the room function and switch off. |
| 6 | Door Curtain Heaters | These would be locally isolated to take advantage of the warmer summer weather. The system will be reinstated prior to winter. | NA | Apply setting to all non-BMS systems | NA |
| 7 | Plate heat exchangers | On this basis the heat recovery device can remain online, but the unit should be inspected to ensure there are no leaks | NA | Visual inspection only | NA |
| 8 | Run around coils | No action. | NA | Normal PPM | NA |



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| 9 | Duct Cleaning | Duct cleaning is not effective against room-to-room infection | NA | Normal PPM | NA |
| 10 | Outdoor Air Filters / Air Intakes | It is not necessary to change existing outdoor air filters and replace them with other filter types. Filters should be changed in line with the standard maintenance regime requirement. Dirty filters or air intakes louvre can reduce air flow into the building | NA | Normal PPM, ensure external louvre is clean | NA |
| 11 | Filters | From the filter replacement perspective, normal maintenance procedures can be used. | NA | Normal PPM (Ensure adequate safety measures are in place) | NA |
| 12 | Fume Cupboard / Safety Cabinet Extract and Make Up Air | Leave systems as normal operation to maintain pressure regimes etc. | NA | Normal PPM | Normal PPM |
| 13 | Natural Ventilation | Opening Windows | NA | NA | Local Users should open windows and vents regularly to increase the natural air flow as much as possible. Review / manage windows in the building according to recommendation and weather conditions |

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| 14 | Natural ventilation - toilets | If windows are the only means of ventilating the toilet block then they should be left open if reasonably possible, and windows in adjoining rooms should also be open | NA | NA | Review / manage windows in the building according to recommendation and weather conditions |
|----|-------------------------------|--|----|----|--|

4. Building Reopening process – Roles & responsibilities

- 4.1 Buildings which have been through the reopening process and have their ECCG Building Reopening Checklist:
- 4.1.1 HoS/Majority Occupier must ensure ventilation requirements are regularly reviewed to ensure that any change in occupancy is considered against the current ventilation strategy for the building. This can be via the Building Reopening Group or College Co-ordination Group as applicable.
 - 4.1.1.1 If modifications are required, they must liaise with Estates Department via the Campus Comms Team (CCT) Estates Rep/submit this request via the Helpdesk.
 - 4.1.1.2 Assistance can be provided by Estates Department if required.
 - 4.1.2 HoS/Majority Occupier must ensure that users of the buildings are informed of any building specific ventilation requirements. This could include, but is not limited to:
 - 4.1.2.1 Identifying areas which are natural ventilation only and require users to open windows to ensure sufficient ventilation in those areas including in between uses to ensure a change of air.
 - 4.1.2.2 Ensuring local controls are not changed without the appropriate input from Estates Department.

Key contact details:

First point of contact: Estates Helpdesk
 Maintenance Services Manager: Lindsey Hastie
 Building Services Engineer: Dan Najdrowski
 Controls Systems Manager: Martin Crawford

5. Further Steps

The industry guidance is subject to continuous review and change in the light of evolving knowledge about the potential spread of Covid 19. This document will be updated in line with any significant changes of HSE advice and industry guidelines. It will be formally reviewed on the first of every month by the Head of Building Services, Head of Estates Health and Safety and the University's Occupational Hygiene & Projects Manager. This review will include considering any potential risk to Estates staff when carrying out routine maintenance.