

Parcel R, Kingsmere, Bicester

Preferred Homes Bicester Ltd &
Countryside (Bicester) Ltd

VENTILATION STRATEGY REPORT

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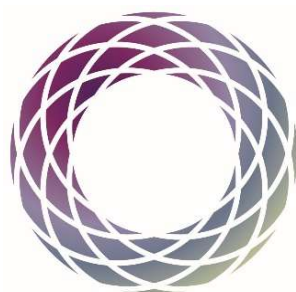
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RECORD OF REVISIONS.

Date.	Revision.	Description of change.
05/09/2023	P01	First Issue
13/09/2023	P02	Comments Incorporated

1. INTRODUCTION

This document has been produced to support a planning application for the following development - a hybrid application comprising (i) in FULL the construction of an 82 no. affordable extra care home (class C2) with associated bistro, open space, landscaping, car/cycle parking, service infrastructure (drainage, highway, lighting) and engineering operations, and (ii) in OUTLINE the erection of a maximum of 14 market residential dwellings (class C3) at Kingsmere Bicester.

The document describes the principal ventilation strategies adopted across the Extra Care scheme to meet the relevant standards and local authority regulations.

2. COMMUNAL AREA VENTILATION STRATEGY

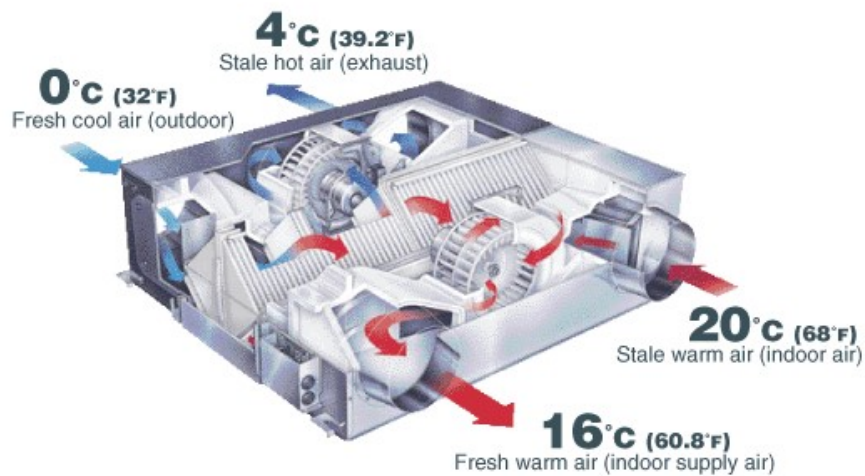
Introduction

The communal areas within the Extra Care home shall have mechanical supply and extract ventilation. The fresh air supply rate shall be based on the design occupancy levels and in accordance with Building Regulations Approved Document F.

Fresh air and Exhaust air shall be ducted to external louvres on the building façade. The louvres shall be separated to ensure no entrainment of vitiated air.

Ventilation units shall incorporate a high efficiency heat exchanger to recover useful heat from the exhaust air.

Units shall be operated by a programmable controller, ensuring operation only when required.



Example of a Mechanical Ventilation Unit with Heat Recovery (Mitsubishi Lossnay)

3. RESIDENTIAL APARTMENT VENTILATION STRATEGY

Introduction

The new residential units proposed will be provided with means of ventilation in accordance with Approved Document F1 suitable for new dwellings.

The design of the ventilation systems shall take into consideration the recommendations within the Noise Assessment Report and the Air Quality Report.

Proposal

The proposal is to adopt Continuous Mechanical Extract Ventilation with Heat Recovery within the apartments.

Continuous extract ventilation shall be provided to each bathroom and the kitchen area. A dedicated extract or filter system shall be provided for the cooker hood.

Fresh air shall be drawn in via a grille terminal or architectural detail located within the building façade.

Fresh air shall be supplied to the habitable rooms.

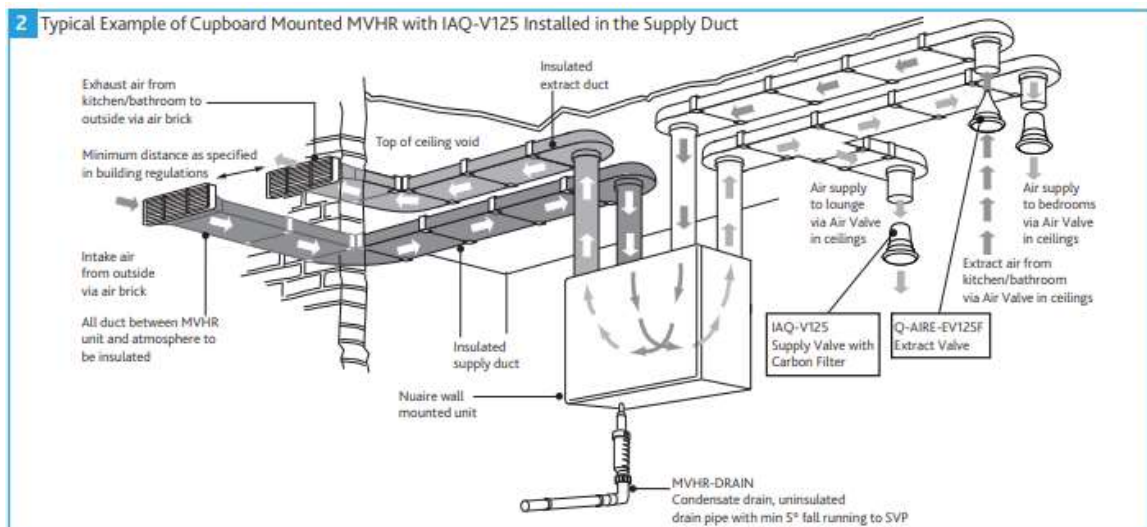
Vitiated air shall be exhausted via a grille terminal or architectural detail located within the building façade.

Where required by the Air Quality Assessment report, lower floors shall have NO₂ filters on the supply air. These shall comprise a supply air valve with integral carbon filter. The filter cartridge filter shall be easily accessible for replacement by the homeowner.

The system shall have a boost facility controlled by the occupants.

All windows shall be openable to provide the minimum purge ventilation requirements.

Each system shall be provided with user friendly controls at a suitable position within the apartment and operating instructions provided.



Example of a Residential (MVHR) System with NO₂ filter supply air valves

4. RESIDENTIAL CORRIDOR VENTILATION STRATEGY

Introduction

The Extra Care Home residential corridors shall be ventilated in order to prevent summertime overheating.

The ventilation shall be provided by utilising the natural or mechanical supply and extract systems in place to meet the smoke ventilation requirements, as described within the fire engineering strategy.

Proposal

The development will have roof level AOVs above a natural ventilation shaft shall operate by opening the on-floor dampers at each floor level and the AOV. The system shall be automatic, responding to internal and external temperature sensors.

If identified within the fire engineering strategy as requiring mechanical ventilation, the development shall be provided with mechanical supply and extract ventilation within the residential building lobbies and corridors in accordance with:

Fire Strategy document

Building Regulations AD B

BS 9991:2011 – Fire safety in the design, management and use of residential buildings

Smoke Control Association Revision 2: October 2015 – Guidance on Smoke Control to Common Escape Routes in Apartment Buildings

The system shall provide both smoke control and environmental temperature control.

The system smoke extraction rate shall be determined by Computational Fluid Dynamics for the fire floor zone.



Typical Roof Mounted Smoke Extract Fan Arrangement for Phase 4 Corridor Ventilation

5. LANDLORD'S AREAS GENERAL VENTILATION

Mechanical supply and extract ventilation shall be provided to the following areas:

Landlord's reception and concierge areas including heat recovery.

Indoor amenity rooms including heat recovery.

Plantrooms for temperature control.

Electrical rooms for temperature control.

Residential corridors for smoke control and summertime temperature control.

W.C. areas including heat recovery.

Mechanical extract ventilation shall be provided to the following areas:

Bin stores

Ventilation shall be designed to meet the requirements Building Regulations AD F, the CIBSE guides and relevant British Standards.