

Part F – Ventilation Compliance Statement

System 3 – Decentralised Mechanical Extract Ventilation (dMEV)

Rev.1 - east / west terminology inconsistency

1. Scope & Basis of Design

This document presents the proposed ventilation strategy for the residential conversion at 7–9 Fish Row, Salisbury. The design adopts a System 3 – Decentralised Mechanical Extract Ventilation (dMEV) system with acoustic background ventilators, developed in accordance with Approved Document F (2021 edition, including amendments).

The scheme integrates the findings of Venta Acoustics' Noise Impact Assessment (ref. VA4746.230718.NIA1.2, July 2023) and subsequent Addendum (ref. VA4746.251104.L1.2, November 2025) following the replacement of the restaurant extractor plant on the east façade with a Systemair MUB 042 500EV Multibox. The addendum confirms a reduction of approximately 7 dB(A) at the east-facing façades and no tonal component at the receiver.

2. Design Principles

The design ensures compliance with the whole-dwelling ventilation rate requirements of Approved Document F Table 1.2, and the internal ambient noise criteria of BS 8233:2014 and WHO Guidelines for Community Noise (1999).

Given the building's Grade II listed status, the strategy limits façade penetrations on public elevations and employs low-profile, colour-matched acoustic ventilators. The approach follows AD F allowances for reasonable provision in historic buildings where strict compliance would unacceptably harm historic significance.

2A. Heritage-led Background Ventilation Equivalence (Bedrooms + 1)

To minimise harm to the listed façades while maintaining indoor air quality, the project adopts a 'bedrooms + 1' provision for background ventilators to habitable rooms, instead of the default 'bedrooms + 2' benchmark sometimes used at outline design. Compliance is demonstrated by equivalence of total Equivalent Area (EA) and by meeting or exceeding the open-state acoustic performance ($D_{n,e,w}$) set by Venta Acoustics. This approach is consistent with AD F allowances for reasonable provision in historic buildings where strict compliance would unacceptably harm significance.

Each acoustic ventilator specified provides $\geq 8,500 \text{ mm}^2$ EA (Rytens AAC125 series). Where the total number of vents is reduced by one compared with 'bedrooms + 2', the higher EA per device ensures the total dwelling EA equals or exceeds the benchmark requirement, whilst keeping penetrations to a minimum on sensitive street elevations.

Equivalence examples (illustrative):

Dwelling	Benchmark vents (B+2)	Benchmark total EA ($\geq 4,000 \text{ mm}^2$ each)	Adopted vents (B+1)	Adopted total EA ($\geq 8,500 \text{ mm}^2$ each)
1-bed	3	$\geq 12,000 \text{ mm}^2$	2	$\geq 17,000 \text{ mm}^2$
2-bed	4	$\geq 16,000 \text{ mm}^2$	3	$\geq 25,500 \text{ mm}^2$
3-bed	5	$\geq 20,000 \text{ mm}^2$	4	$\geq 34,000 \text{ mm}^2$

Background ventilators are provided only to habitable rooms under System 3; circulation and lobbies do not receive trickle vents. Door undercuts ($\approx 10 \text{ mm}$) facilitate transfer to wet rooms served by dMEV.

3. Acoustic Design Parameters

The following minimum vent-open $D_{n,e,w}$ performance targets are adopted, as derived from Venta Acoustics' reports. Where multiple vents are installed in a room, the performance target is increased by $+10 \cdot \log_{10}(N)$.

Façade / Room	Required Ventilator $D_{n,e,w}$ (open)	Reference	Notes
Living Rooms – Fish Row	$\geq 29 \text{ dB}$	Venta NIA Table 6.2	Unchanged
Bedrooms – Fish Row	$\geq 39 \text{ dB}$	Venta NIA Table 6.2	Unchanged
Living Rooms – New Canal	$\geq 36 \text{ dB}$	Venta NIA Table 6.2	Unchanged
Bedrooms – New Canal	$\geq 41 \text{ dB}$	Venta NIA Table 6.2	Unchanged
Bedrooms – East façade (1F & 2F overlooking plant)	$\geq 39 \text{ dB}$	Venta Addendum Table 1	Applies to both floors

Note on east-facing bedrooms: Both east-facing bedrooms (1F and 2F) are treated equivalently, as confirmed with the project's acoustic consultant. The adopted requirement is Glazing $R_w \geq 39 \text{ dB}$ and Ventilator $D_{n,e,w}$ (open) $\geq 39 \text{ dB}$ for both rooms. Where more than one ventilator serves a room, increase the $D_{n,e,w}$ requirement by $+10 \cdot \log_{10}(N) \text{ dB}$ (Venta/BS 8233 method).

4. Product Strategy

Acoustic background ventilators are provided only to habitable rooms. Each unit provides at least 8,500 mm² Equivalent Area (EA), ensuring compliance with whole-dwelling airflow requirements under System 3. The following products (or approved equivalents) are specified:

- Public façades (Fish Row & New Canal): Rytons AAC125HP (low-profile external grille, controllable internal cover), providing ≥ 8,500 mm² EA.
- East/Plant-side bedrooms (1F & 2F): Rytons AAC125HPCWL (cowled, weather-rated, controllable internal grille).

5. Multi-Flat Room-by-Room Schedule (System 3)

Background ventilators are provided only to habitable rooms (living rooms and bedrooms) and follow the adopted “bedrooms + 1” criterion, with each vent providing ≥ 8,500 mm² EA. Wet rooms are mechanically extracted via Titon Ultimate dMEV TP640i (or equivalent model) units. Door undercuts (≈ 10 mm) enable air transfer from habitable rooms to wet rooms.

Flat	Façades / Room Types Served	Background Ventilation	Extract (dMEV TP640i)	Notes
Flat 1	Living (New Canal); Bedrooms (Fish Row & East)	4 vents total (2 living + 2 bedrooms)	Kitchen ≥ 13 l/s; Bathroom ≥ 8 l/s; East bedroom dMEV in purge mode	Compact AAC125HP vents to street façades; AAC125HPCWL cowled vent to East façade (fixed window purge via TP640i boost)
Flat 2	Living/Kitchen (New Canal); Bedrooms (New Canal & Fish Row)	4 vents total (2 living + 2 bedrooms)	Kitchen ≥ 13 l/s; Bathroom ≥ 8 l/s	Compact AAC125HP vents to street façades
Flat 3	Living/Kitchen (Fish Row); Bedrooms (Fish Row & East)	4 vents total (2 living + 2 bedrooms)	Kitchen ≥ 13 l/s; 2 Bathrooms ≥ 8 l/s each; East bedroom dMEV in purge mode	Compact AAC125HP vents to street façades; AAC125HPCWL cowled vent to East façade

(fixed window
purge via
TP640i boost)

Each flat therefore meets or exceeds the whole-dwelling ventilation rate required by AD F Table 1.2 and complies with the System 3 (dMEV) design principles.

6. System 3 (dMEV) Mechanical Extract

Each wet room is served by one Titon Ultimate® dMEV TP640i (or equivalent model) unit configured for continuous extract at the following minimum rates:

- Kitchen: ≥ 13 l/s
- Bathroom: ≥ 8 l/s
- WC (sanitary only): ≥ 6 l/s
- Utility (if present): ≥ 8 l/s

Each unit provides local boost control to meet intermittent extract requirements during cooking or bathing. Air transfer between rooms is provided via 10 mm undercuts beneath internal doors. Purge ventilation is by openable windows; where a non-openable window is present (East bedrooms), the TP640i in boost mode provides ≥ 4 air changes per hour as required.

7. Compliance Summary

The combined acoustic and ventilation design achieves the following outcomes:

- Internal noise levels within BS 8233:2014 and WHO (1999) guidance.
- System 3 airflow rates meeting Approved Document F Table 1.2.
- Reduced façade penetrations consistent with heritage significance.
- Compliance with Venta Acoustics' Noise Impact Assessment (July 2023) and subsequent Addendum (November 2025), confirming façade-specific $D_{n,e,w}$ performance and glazing requirements.
- East façade bedrooms (1F & 2F) adopt equivalent treatment with fixed-window purge via TP640i boost mode.