
RIVENDALE HOMES

Ventilation strategy

Residential Conversion, Bampton House, Chandler's Ford

January 2021

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Issue Control

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First Issue Date	Revision Issue Date	Issue Revision	Issued By
January 2021	-	-	BS

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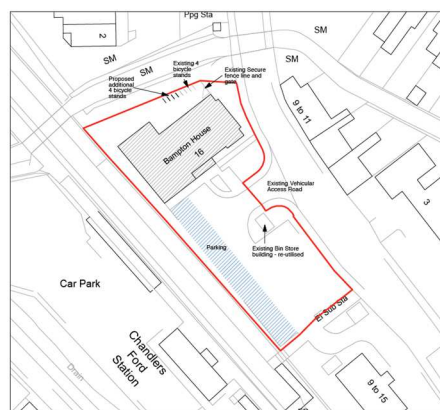
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Appendix A – Images of openable windows and trickle ventilators

Appendix B – typical CMEV ventilation layout

Appendix C – purge ventilation calculation



2 Ventilation strategy

The proposed ventilation system for the new apartments will consist of three parts:

1. A mechanical system to extract odours and vapour from wet rooms and kitchens.
2. Purge ventilation via openable windows to rapidly clear odours and for summer-time cooling.
3. Background ventilation via trickle ventilators, to provide a continuous supply of fresh air for occupants.

2.1 Mechanical ventilation

The proposed mechanical ventilation system in the apartments is a centralised mechanical extract ventilation (CMEV) or system 3 as defined in Building Regulations Approved Document Part F (ADF) 2013. This system consists of a central, two speed fan, extracting air from wet rooms, kitchens, and utility cupboards. The fan will run continuously in trickle mode, with the option to boost the ventilation rate via occupant control and/or a humidity sensor.

The exhaust air will be ducted to outside, terminating with an air brick (or similar) on the façade.

A typical layout of the CMEV system can be viewed in Appendix B.

2.2 Purge ventilation

Purge ventilation for rapid clearance of odours will be achieved through opening windows. The existing opening windows will be retained to provide a free area equivalent to 1/20th of the floor area of the habitable room. A full calculation to demonstrate compliance can be found in Appendix C. The expectation is that occupants will require the purge only to clear the build-up of odours and to mitigate summer overheating.

2.3 Background ventilation.

Background ventilation to provide a continuous supply of fresh air to occupants will be achieved with the existing trickle vents at the heads of the window. Examples of the existing trickle ventilators and openable windows can be viewed in Appendix A.

3 Conclusion

Watt Energy & consulting engineers carried out a desktop study to assess the opportunities for ventilating the proposed apartments at Bampton House, Chandler's Ford. The proposed ventilation strategy is to provide a continuous mechanical extract ventilation (CMEV) system and to retain the existing windows to provide both purge ventilation and background ventilation via the trickle vents at the heads of the windows.

Appendix A

Images of the existing trickle ventilators and openable windows at Bampton House.

	
Example of the existing trickle ventilators, which shall be retained to provide background ventilation to the apartments.	
	
Further examples of the trickle ventilators.	
	
Examples of the existing opening windows which will be retained for the apartment conversions. The openable windows will provide adequate purge ventilation to the apartments.	

Appendix C - purge ventilation calculation.

Apt Type	Open Plan Living/Dining/Kitchen Area (m ²)	Number - TYPE A	Number - TYPE B	Purge Vent Area Available (m ²)	Pass/ Fail	Bedroom 1 area (m ²)	Number - TYPE A	Number - TYPE B	Purge Vent Area Available (m ²)	Pass/ Fail
Flat 1	18	3	1	2.55	PASS	10.6	2		1.35	PASS
Flat 2	19	2		1.35	PASS	9.8	2		1.35	PASS
Flat 3	23	2		1.35	PASS	11	1		0.68	PASS
Flat 4	20	3		2.03	PASS	9.4	2		1.35	PASS
Flat 5	15.5	3		2.03	PASS	8.9	1		0.68	PASS
Flat 6	17	3		2.03	PASS	9.7	2		1.35	PASS
Flat 7	19	1	3	2.25	PASS	9		2	1.05	PASS
Flat 8	18	4		2.70	PASS	10.5	2		1.35	PASS
Flat 9	19	2		1.35	PASS	10.7	2		1.35	PASS
Flat 10	23	2		1.35	PASS	8.6	1		0.68	PASS
Flat 11	19	3		2.03	PASS	10.3	2		1.35	PASS
Flat 12	15.5	3		2.03	PASS	8.6	1		0.68	PASS
Flat 13	14.5	3		2.03	PASS	12		2	1.05	PASS
Flat 14	19	4		2.70	PASS	9		2	1.05	PASS
Flat 15	25	2.3625		1.59	PASS	15	1.575		1.06	PASS

Window reference	Width of opening (m)	Height of opening (m)	Free area (m ²)
A	0.5	1.35	0.68
B	0.5	1.05	0.53

