

MEMORANDUM

noise.co.uk Ltd
The Haybarn
Newnham Grounds
Kings Newnham Lane
Bretford
CV23 0JU

22nd November 2019

Taylor Wimpey Thames

RE: Ventilation and Acoustics @ Residential Development at Chequersfield, Welwyn Garden City AL7 4TX

Our Ref: 20596

Synopsis

This document deals with the acoustic requirements of the planning condition and where appropriate the proposed ventilation strategy.

The Client has been refused permission as follows:

Application Reference: 6/2019/2130/COND

Proposed development at: **Chequersfield Welwyn Garden City AL7 4TX**

Having regard to conditions 1, 4 and 7, insufficient information has been submitted to discharge these conditions. This view is shared with our Environmental Health **Officer and the Lead Local Flood Authority.**

In regards to condition 4 (noise) due to being commercial noise, the internal noise levels will need to be better than those found within BS8233, as this noise will not be anonymous in nature and likely to result in complaints which may impact on the way that the business is able to operate. **As raised previously, in terms of ventilation, additional information is still required.** Opening windows is likely to raise the noise levels above those within BS8233, as per the condition, **a ventilation rate that meets those stipulated within the Noise Insulation Regulations 1975 will be required.**

However, you also have the additional option of carrying out a SAP assessment, with the following parameters – windows closed and with alternative ventilation scheme operating (i.e. mechanical ventilation). The ventilation rate must be that which will be provided by the alternative ventilation system. To comply with the Local Planning Authority's requirements, the SAP assessment must show that the properties will not overheat during the summer months.

Figure 1: relevant sections dealing with noise in letter from Welwyn & Hatfield dated 22/10/19

Query

The Local Authority is seeking clarification of the ventilation system that is proposed at the proposed residential development at Chequersfield, Welwyn Garden City ("Proposed Development"). The original noise impact assessment¹ carried out for the Proposed Development required bedrooms and living rooms to be fitted with a suitable glazing specification to protect the habitable rooms from environmental noise mainly contributed by the rail line and nearby Easymix Concrete depot.

¹ By others (M-EC Acoustic Air Consultants)

The glazing specification is shown on the current site layout plan in the Appendix.

The original planning condition/s relating to noise are detailed below:

<p>4. Prior to any above ground development in any phase of the development must take place until details relating to a scheme to protect the proposed development from noise due to the railway and nearby commercial/industrial units are submitted to and for the approval in writing by the Local Planning Authority. The scheme shall ensure the indoor ambient noise levels in living rooms and bedrooms meet the standards in BS 8233:2014 (a greater level of mitigation and lower internal noise levels will be required if significant noise is still present from the commercial/industrial units). Any associated mechanical ventilation will need to meet the ventilation requirements found within The Noise Insulation Regulations 1975 (or a similar alternative to be agreed with the Local Planning Authority). Outdoor amenity areas will need to meet the 55dB WHO Community Noise Guideline Level with mitigation measures provided where required to meet this level.</p> <p>The approved noise mitigating scheme must be implemented before any part of the accommodation hereby approved is occupied, unless the Local Planning Authority otherwise agrees in writing.</p> <p>Reason – to protect the occupants of the new development from noise disturbance in accordance with policy R19 of the Welwyn Hatfield District Plan 2005.</p>
<p>7. The glazing scheme and associated mechanical ventilation scheme must take into account noise from the nearby industrial units and traffic noise. The scheme must also meet the ventilation standards within the Noise Insulation Regulations 1975 (as amended).</p>

Figure 2: Important – Planning permission and notices of consent ref 6/2018/1519/MAJ - Condition 4 noise / Informative No7.

The proposed ventilation strategy information is detailed below. In this case it would come under a ‘similar alternative to be agreed....’ as detailed in Planning Condition 4.

Proposed ventilation Strategy:

In this case the proposed ventilation strategy for the development is System 3 which covers continuous mechanical extract employing a dMEV (decentralised mechanical extract ventilation), and is compliant with Building Regulation requirements under Approved Document F .

The SMART system from Zehnder is proposed using model CV2GIP fan and an email has been obtained from the manufacturer describing its characteristics and specification.

From: Kazlauciusas, Rupert (ZGB) <Rupert.Kazlauciusas@zehndergroup.com>
Sent: Friday, November 22, 2019 2:24:11 PM
To: Matthew Christensen - TW North Thames <Matthew.Christensen@taylorwimpey.com>
Subject: RE: Chequersfield - Commercial Noise

Hi Matt,

I can confirm our designs meet with the air flow rates required to comply with the System 3 methodology of ventilation within Approved Document F. The CV2GIP has the option of two speeds, the first being to meet the minimum low/trickle rate and the second being a manual high speed which can be operated via a boost switch or light switch. The CV2GIP can also achieve a maximum airflow rate of 23l/s in free air, as per the attached datasheet.

In addition to this the unit was designed to use less plastic, less packaging and less energy. The CV2GIP has been designed to be ultra-efficient, costing less than half a penny a day to run (the equivalent of two cans of branded bakes beans for the whole year!). The CV2GIP is also extremely quiet, with sound pressure levels as low as 10.1dB(A) @ 3m.

I hope this helps, however if you have any further queries then please let me know.

Kind Regards,
Rupert Kazlauciusas
Technical Product Manager - MVHR

m: +44 7557 300984
e: Rupert.Kazlauciusas@zehndergroup.com

Figure 3: Mechanical Ventilation - email from manufacturer describing the system characteristics & specification.

Comment: the fan is a continuous running fan with low operating running costs and designed to have a low environmental impact in its manufacturer and use. It has user definable (programmable) characteristics as well as a manual over-ride which is capable of delivering a maximum airflow of 23l/s (litres/second)². The specification sheet for this fan is attached to this document.

Summary & Conclusions

The proposed ventilation system information, airflows and specification have been provided in this document in response to a request by the Local Authority.

The system chosen is a sustainable decentralised mechanical vent system that has a manual boost function and a maximum airflow high rate of 23l/s.

For further information please refer to the manufacturers data sheet and product literature which is attached to this letter for ease of reference.

Dr Bill Whitfield MSc, PhD, MIOA
Noise and Vibration Consultant

² In this case the maximum ventilation airflow rate of the Zehnder CV2GIP fan is less than the flow rate detailed in the Noise Insulation Regulations 1975 but is significantly higher than the minimum 'High Rate' specification requirements for boost in the Building Regulations Approved Document F (8l/s).

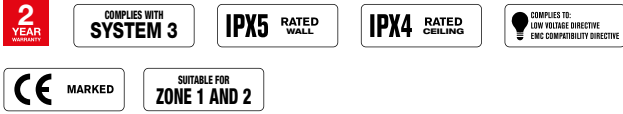
1. APPENDIX

Documentation relevant to Local Authority request for additional information..

noise.co.uk

Unity CV2GIP

Low energy – one fan, any room



Features and benefits

Unity's outstanding energy performance and in-built SMART technology provides the best answers for today's ventilation requirements in both new and refurbishment housing.

- One fan, any room, all applications - CV2GIP can be applied to all wet rooms and removes the need for large ducting networks and high background ventilation requirements
- Using as little as 1.1 watts, Unity's energy performance is ideal for directly reducing carbon emissions in SAP
- CV2GIP's short 68mm spigot design makes it perfect for application in shallow ceiling voids
- The unique 100% variable airflow feature offers peace of mind to Installers that Building Regulation compliance can be easily achieved
- CV2GIP's SMART technology features, including automatic humidity sensing and a logical approach to overrun timing, help to reduce heat loss and energy wastage
- The discreet and stylish design helps CV2GIP to blend in with its environment
- The SMART touchpad located on the front panel removes the need for battling with fiddly switches, often located at the back of the fan
- CV2GIP offers ultra-quiet ventilation as low as 10dB(A) in low speed mode once installed
- **The best of the rest - CV2GIP has a low energy EC motor, 9 registered design patents and a mixed flow backward curved impellor, increased performance, removing clogging as the rubber blade protectors attract duct**



Greenwood SMART Technology



Unity picture frame adaptor

Material: White satin finish, ABS plastic
Designed to provide a perfect aesthetic finish when the Unity fan is used as a replacement in existing Ø 150mm wall installations.

Product code	Width	Height	Depth	Price ex. VAT (£)
PFACV2	246mm	246mm	22mm	£25.36

Models, control options and key data

*Sound pressure level measured @ 3 metres

Product code	Control operation	IP	Voltage	Preset speed, 100% adjustable	Airflow performance (l/s)		Sound Pressure Level dB(A)*	Energy consumption (W)		Price ex. VAT (£)
					Trickle	Boost		Min	Max	
CV2GIP	Continuously running dMEV fan with automatic Greenwood HumidiSMART™ sensing and Greenwood TimerSMART™ overrun options (set up at installation)	X4 Ceiling X5 Wall	220 - 240V	Trickle	5	8	10.1 - 38.5	1.1	5.4	£103.34
				Boost	8	13				
				Min/Max	2	23				
CV2SVGIP	Continuously running SELV fan with automatic Greenwood HumidiSMART™ sensing and Greenwood TimerSMART™ overrun options (set up at installation)	X4 Ceiling X5 Wall	24V DC	Trickle	5	8	10.1 - 38.5	1.1	5.4	£133.58
				Boost	8	13				
				Min/Max	2	23				

Physical specification

All measurements in millimetres unless otherwise indicated

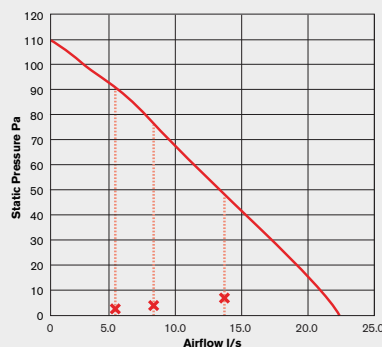
- Weight:** 1kg
- Spigot:** Ø 100mm
- Materials:** White satin finish
ABS plastic manufacture

Ancillaries for Unity
 Flexiduct page 48 • External grilles page 49
 • FF100 Fastfix page 48 • PFA (picture frame adaptor) page 49

Installation

- Wiring:** Must comply with IEE Regulations
- Fuse:** 3 amp normally required (when fan is supplied from a 6A lighting circuit no local fuse is required)
- Electrical specification:** 220-240V~50Hz Class II
SELV Class III
- Cable:** Ø 1mm² max
- Installation:** Wall or ceiling
- Consumption:** Min 1.1W
Max 5.4W

Performance



Key
 Unity —————
 For manual airflow volume setting
 Default settings X

Fuss-free installation

We have kept the installer firmly in the forefront of our mind whilst designing Unity.

A 'Twist-Lock' front fascia simply turns for removal. On the inside, screws can be undone but stay in place when you use the innovative 'stay open' internal hinge for easy wiring access and secure fixing, designed to reduce installed vibration. This means no need to hold or put down screws keeping everything within easy reach of the installer.



The touchpad

The innovative touchpad has been designed to help reduce set up and commissioning on-site. All of the set up features are located in one place which is easy to access once the fan is wired and installed.

This helps ensure that the correct installation is achieved and once completed, the touchpad is locked to avoid unnecessary changes being made to the fan's running mode.




A one product concept - one fan, any room, all installations. Unity is the first continuously running fan to truly assist in the delivery of **Guaranteed Installed Performance.**

NOTES:

1. DO NOT SCALE THIS DRAWING.

KEY

 36 dB Rw



REV:	AMENDMENTS:	DRN	CHK	DATE:
PROJECT: CHEQUERSFIELD WELWYN GARDEN CITY				
DRAWING TITLE: GLAZING: REQUIRED SOUND REDUCTION TO BE PROVIDED BY GLAZING FOR BEDROOMS				
CLIENT: TAYLOR WIMPEY (NORTH LONDON)				
DRAWING NUMBER: 22573_04_120_01				
REVISION:	SHEET SIZE:	SCALE:		
-	A3	-		
DRAWN BY:	CHECKED BY:	DATE:		
DN		04.03.2019		
STATUS:				
-				
M-EC		Leicester	T: 01530 264 753	
ACOUSTIC AIR		Birmingham	T: 0121 726 4888	
E: group@m-ec.co.uk		Milton Keynes	T: 01908 018 200	
www.m-ec.co.uk		Nottingham	T: 0115 679 8578	
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