

PROPOSED NOISE MITIGATION MEASURES

in relation to

**PROPOSED EXTENSION TO JINGLES HOTEL
TO PROVIDE NEW DINING ROOM
& 14 No. EN-SUITE GUEST BEDROOMS**

at

**77 HORNDEAN ROAD, EMSWORTH
HAMPSHIRE PO10 7PU**

September 2015

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NOISE MITIGATION MEASURES IN RELATION TO THE PROPOSED EXTENSION TO PROVIDE A NEW GUEST DINING ROOM AND AN ADDITIONAL 14 NO. BEDROOMS AT JINGLES HOTEL, 77 HORNDEAN ROAD, EMSWORTH, HAMPSHIRE PO10 7PU.

This report is provided to satisfy the requirement under Condition 7 of the outline planning permission reference APP/10/00612 dated 23 August 2012 and subsequent approval of reserved matters dated 6th November 2013.

Introduction

The site lies to the south-west of Horndean Road and is at the edge of the urban area of Emsworth and adjacent to woodland and open farmland towards the north and west. Refer to Appendix 'A' for location plan.

Jingles Hotel was acquired by the applicant in 2003 when it was in a very dilapidated condition and in need of urgent refurbishment and improvement. Since then, major improvements have been made to the premises and the Hotel now has an AA 4 Star Guest Accommodation rating providing at present a total of 18 modern en-suite bedrooms. It also includes a small manager's flat within the ground floor at the south west end of the building.

The owners have also acquired the existing bed and breakfast hotel at No. 73 Horndean Road which provides 12 en-suite bedrooms and residential accommodation for the owners. This property is self-contained but is managed with the hotel at No. 77.

The Hotel now has permission, subject to conditions, to construct an extension to the rear of the present hotel within the existing grounds to provide 14 no. additional en-suite bedrooms on two floors together with a purpose-built ground floor dining room for serving breakfasts to all guests. Minor internal adaptations would be made to the existing ground floor of the hotel to provide access to these additional facilities. The existing rather fragmented and poorly lit areas currently used for dining would be laid out for use as a guest lounge and a reception seating area.

It should be noted that the provision of breakfast only for guests would continue and the new dining room would not be used for lunchtime or evening dining.

Potential Noise Receptor

The main reason for limiting external noise is considered to be the effects on the residential dwelling at No. 75 Horndean Road adjacent to the south-east boundary. The property beyond at No. 73 is part of the Jingles Hotel and does not require consideration. The land to the north-west and south-west is currently open farmland and not affected by the proposals in relation to potential noise.

The residential property is already subject to potential noise nuisance from the Hotel and from traffic noise on the south-east side from the busy Horndean Road.

Noise Mitigation Methods

There are three distinct methods of noise mitigation:

1. Reduce the sound level at the source;
2. Interrupt the path of the noise; or
3. Shield the receptor from the noise.

1. Source Control

Reducing the source sound emissions results in the most desirable effect; lower sound levels for everyone without those who are impacted having to provide mitigation. Source control can sometimes be the cheapest form of noise reduction since lower source emissions may pre-empt alternative mitigation efforts at many other locations. In this case, it would mainly apply to hotel guest management and noise generating equipment design and specification. Sound absorbing materials may also be relevant in reducing noise at source.

2. Path Control

Interrupting the path of sound can reduce sound exposure. The most common type of path control is a noise barrier. In this case, it is mainly applicable to the building fabric, location and specification of glazing and the design layout.

3. Receptor Shielding

Shielding the receptor is typically utilized as a last resort because the high sound levels are ever present and an impact exists when the shielding is removed. Not considered applicable in this instance.

Identification of Noise Sources

Potential noise sources resulting from the proposed extension are considered to be as follows:

- Noise from occupants and staff passing through corridors, dining in the dining hall and occupying bedrooms. Noise mainly in the form of airborne sound from verbal communication, TV and radio equipment and from impact sound from movement.
- Noise from activities such as dining, serving of food, clearing of plates, cutlery, etc.
- Noise from the generation of background music in the dining area.
- Noise from air conditioning and ventilation equipment.
- Noise from guests arriving or leaving via the extended car parking area at the rear of the Hotel

Proposed Mitigation Measures

Building Fabric

The building is proposed to be constructed using a factory prefabricated SIP (structural Insulated Panels) system. The chosen provider would be Kingspan using their TEK 142 system to construct all external walls and pitched roofs. This system, together with external finishes, claddings and internal linings, provides excellent levels of sound attenuation particularly due to its inherent airtightness and fit.

As an added benefit, this construction method provides rapid construction of the building superstructure compared to traditional methods. This would limit external noise during construction.

All glazing would be in 28mm sealed units with 6mm/4mm panels and argon filled providing a good level of sound attenuation. Sensitive locations would have fixed glazing without opening lights to maintain this sound attenuation from the interior to exterior spaces.

Building Layout

Refer to Appendices 'B' & 'C'.

The corridors providing access to guest bedrooms from the existing Hotel are located on the south-east side of the Dining Room nearest the adjoining residential property, therefore providing a sound barrier between the Dining room and the exterior on this sensitive side.

The guest bedrooms all face north-west over the farmland and are again separated on the south-east side by corridors on the ground and first floors thereby shielding the adjoining residential property from potential noise from guest bedrooms.

All new guest parking is located on the north-west side of the new extension, effectively shielding any noise from the residential property to the south-east.

Glazing/Windows

All ground floor corridors are to have fixed glazing on the south-east side to avoid any potential noise nuisance. The upper first floor corridor has high level roof windows only with restricted opening. This would limit potential noise in the south-easterly direction.

The only source of natural light to the Dining Room is the high level roof glazing directing any potential noise break out in a more vertical direction. However, it is proposed to limit any opening lights to the north-west facing slope of the glazing facing back towards the existing hotel.

Sound Absorbing Materials

All floors to corridors are to be carpeted to avoid impact sound and reverberation. The Dining Room is to have soft furnishings in the form of drapes along the south-east wall and a part carpeted floor to reduce reverberation.

Sound & Ventilation Equipment

Ceiling mounted speakers will be fitted in the horizontal ceiling in the Dining Room to provide background music only at low volume levels. This facility is necessary to maintain some privacy for diners.

The Dining Room would have a Duplexvent Multi DV1500 heat recovery and ventilation system installed with heating & cooling. Supply air would be fed through registers in the vertical bulkhead immediately below the roof glazing with extract registers mounted in the horizontal ceiling. The proposed equipment (see manufacturer's data attached in Appendix 'D') produces very low external noise due to slow running fans, passive heat exchanger and sound attenuators on the inlet and exhaust air ducts.

Hotel bedrooms and corridors would be heated by means of low pressure hot water radiators. Local extract fans would be installed to bathrooms connected to vertical ducts with vents located in the roofs immediately above.

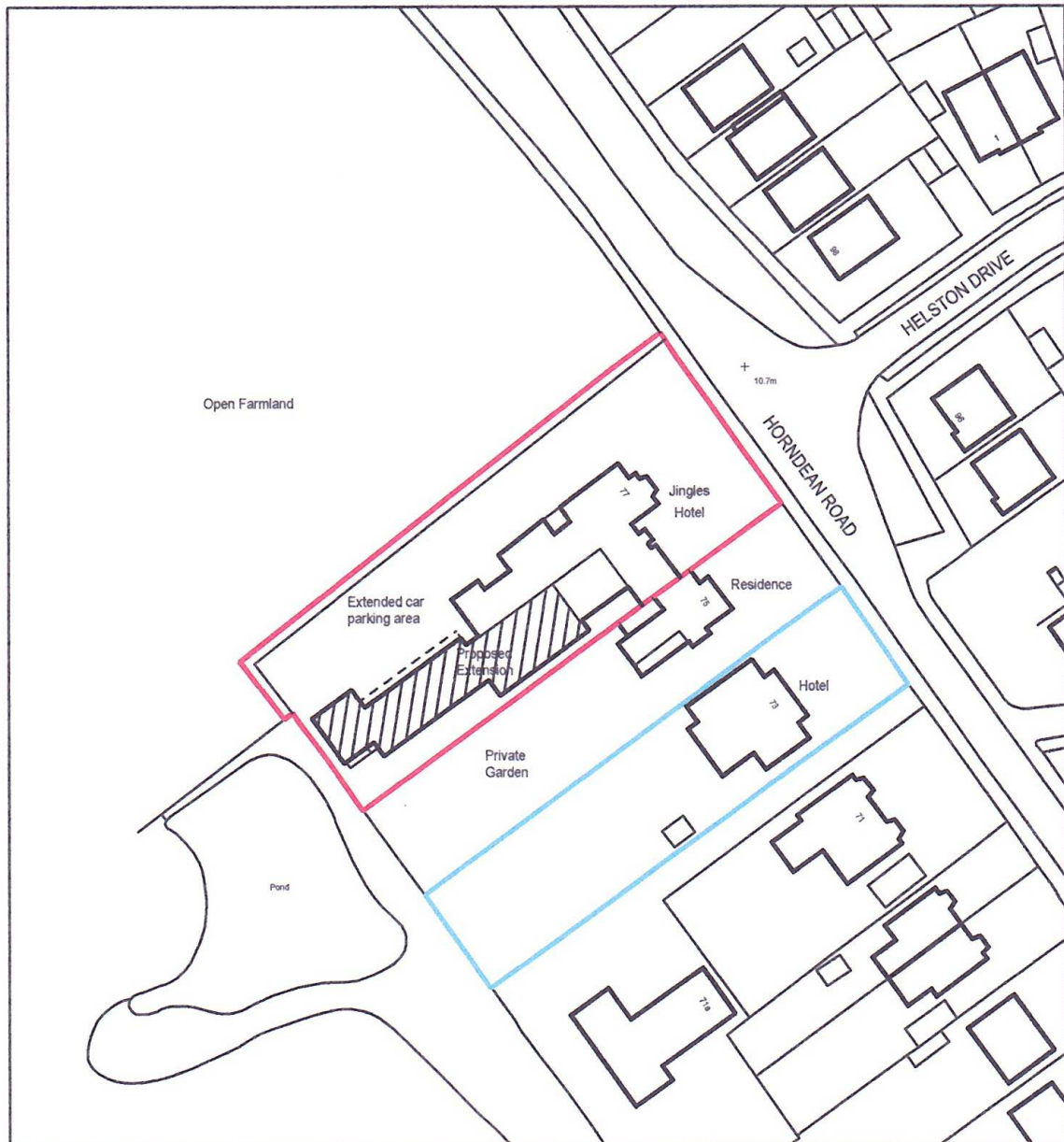
No other noise producing equipment is proposed within the new extension.

Hotel Management Restrictions

Restrictions and protocols are already in place to limit potential noise nuisance which would be extended to include the new facilities.

Guest are respectfully requested to limit noise as far as reasonably possible when leaving the Hotel.

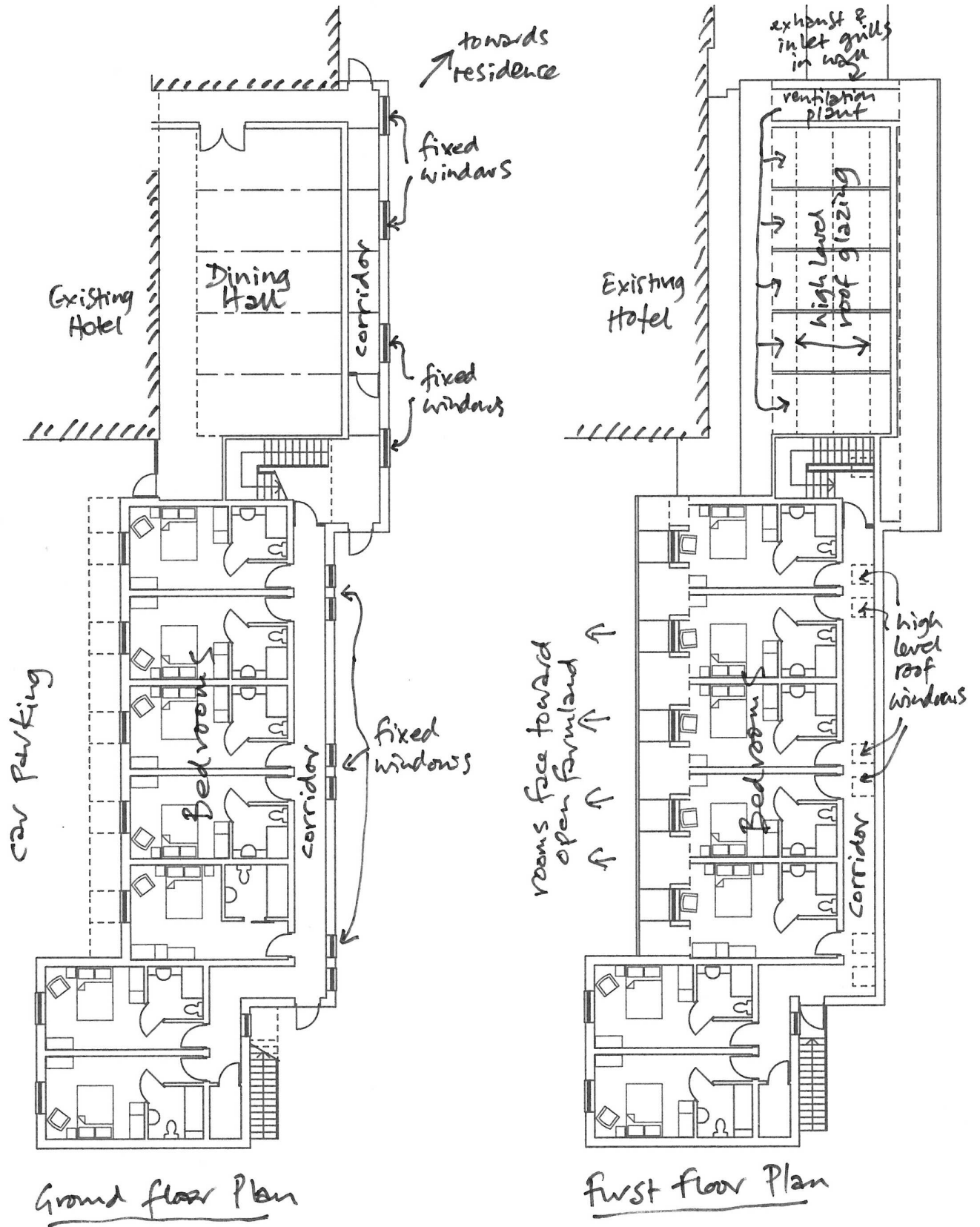
The Dining Room facility is for breakfast dining only between the hours of 7.00am and 10.00am. Evening meals are not provided. Guest bar areas are contained within the existing Hotel for evening use as at present.

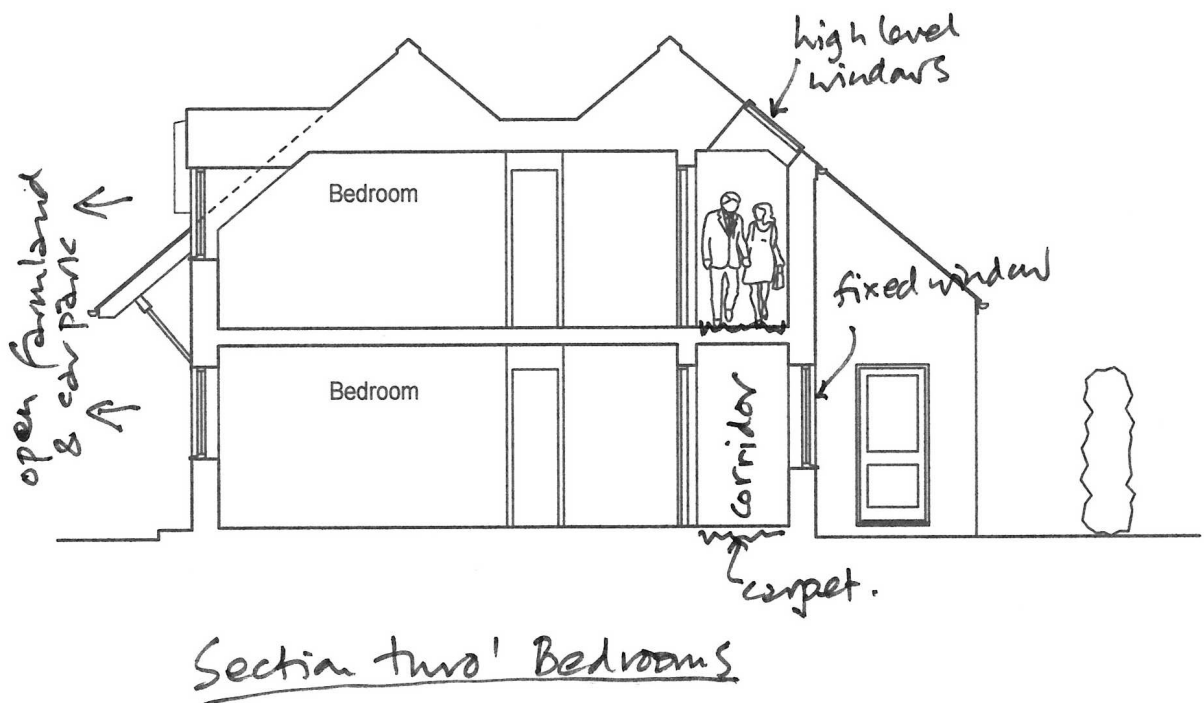
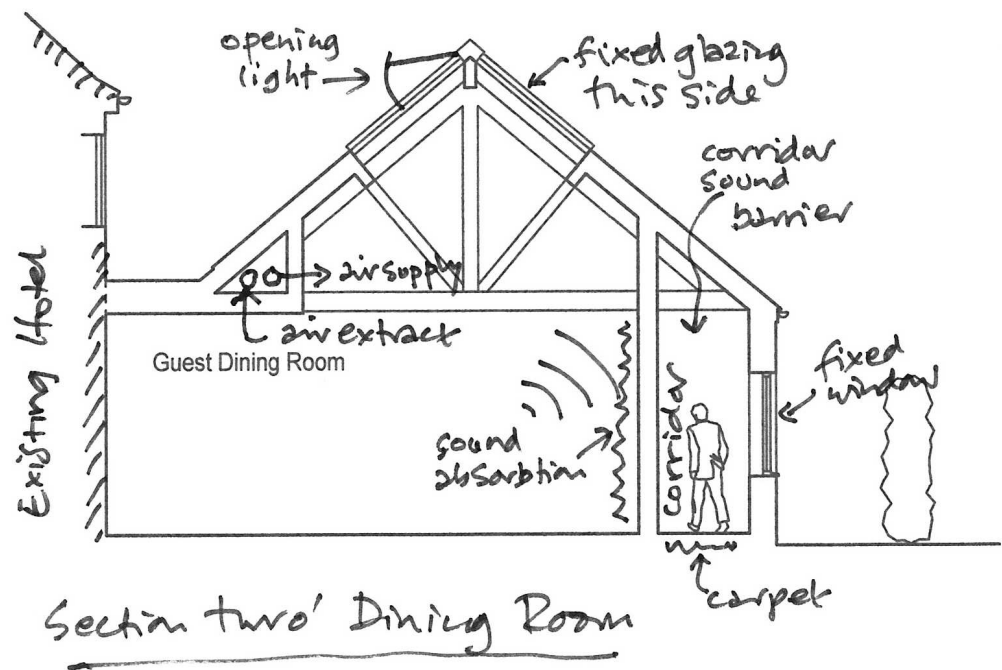


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Proposed Location Plan 1:1250

Appendix 'A'





Duplexvent MULTI

Multi Line Customised Indoor - Up to 9600 m³/hr air volume



Key Features

- Fully customised commercial units in 8 different sizes up to 9000 m³/hr at 200 Pa
- Excellent heat recovery efficiency, up to 95%
- Low SFP with energy saving EC fans
- Low noise, refer to NR35 and BB93 standards
- 10 speed digital control with internet and BMS
- Excellent thermal insulation (class T2, TB1)
- Optional circulation and bypass dampers
- BREEAM, EPDB and ErP 2013 / 2015 compliant
- Meets Building Regulations Part L2A and L2B

Performance

Duplexvent Multi		DV500	DV1000	DV1500	DV2500	DV3500	DV5000	DV6500	DV8000
Supply air - max. ¹	m ³ /hr	660	1200	2200	3400	4600	5750	7100	9600
Extraction air - max. ¹	m ³ /hr	670	1150	1800	3200	4200	5500	7050	9100
Heat recovery efficiency ²	%	up to 95%							
Fan type		EC (backward curved impeller)							
Weight ³	kg	80-110	95-130	200-280	290-370	320-390	370-450	480-560	580-670
Max power input	kW	0.3	0.7	1.2	2.6	4.5	4.6	7.3	9.3
Voltage	V	230	230	230	400	400	400	400	400
Frequency	Hz	50							
RPM - max.	min ⁻¹	4300	3350	2920	3000	2980	2400	2820	2560
Heating output T - max. ⁴	kW	5	14	22	30	42	51	71	88
Cooling output CHW - max. ⁴	kW	4	8	16	22	30	42	56	62
Cooling output CHF - max. ⁴	kW	3	6	10	13	25	32	41	50
Part No.		9041571	9041572	9041573	9041521	9041522	9041523	9041524	9041525

1. Maximum flow rate at zero external pressure

2. According to air volume

3. Depending on equipment

4. Depending on register type, liquid and flow rates

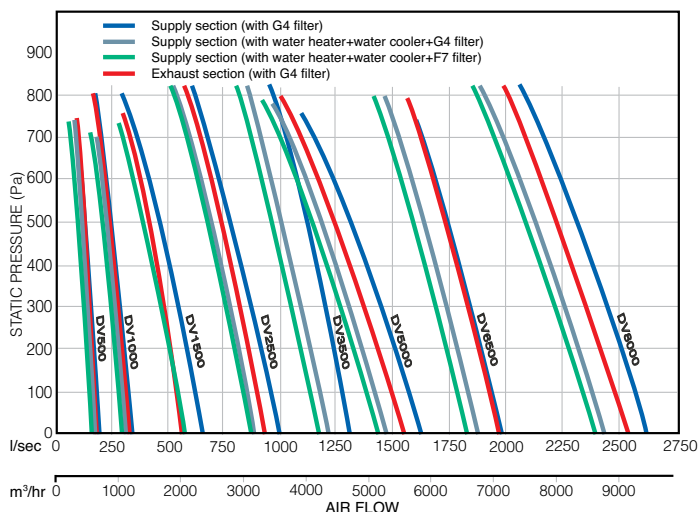
T - Water heating coil

CHW - Water cooling coil

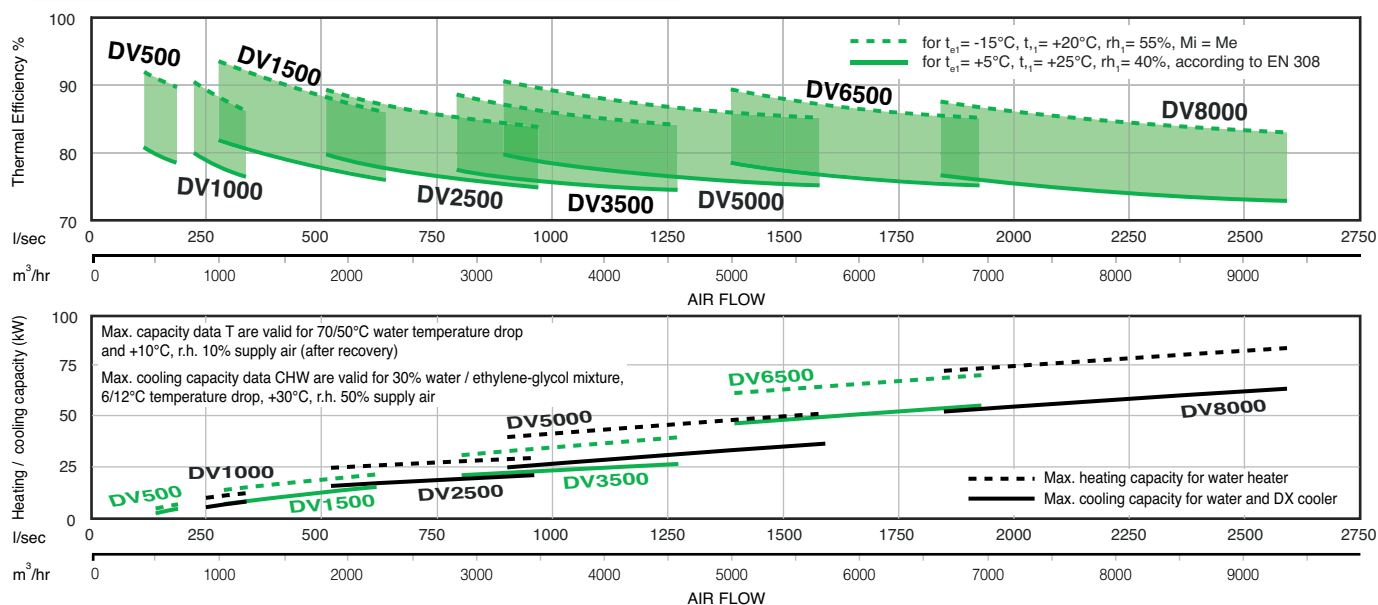
CHF - DX (direct evaporator) coil

Acoustic power L_w and Acoustic pressure L_D

Type	Working point	Acoustic power L_w [dB(A)]					Acoustic pressure L_D [dB(A)] at 1 m
		inlet e ₁	inlet i ₁	inlet e ₂	inlet i ₂	unit	
Duplexvent Multi DV500	500m ³ /hr (200Pa)	53	67	80	82	59	48
Duplexvent Multi DV1000	1000m ³ /hr (200Pa)	66	65	86	86	63	52
Duplexvent Multi DV1500	1500m ³ /hr (200Pa)	58	60	83	83	64	53
Duplexvent Multi DV2500	2500m ³ /hr (200Pa)	59	55	80	79	70	59
Duplexvent Multi DV3500	3500m ³ /hr (200Pa)	61	60	92	89	70	59
Duplexvent Multi DV5000	5000m ³ /hr (200Pa)	64	65	88	88	73	62
Duplexvent Multi DV6500	6500m ³ /hr (200Pa)	70	72	96	95	76	65
Duplexvent Multi DV8000	8000m ³ /hr (200Pa)	76	75	99	96	70	59

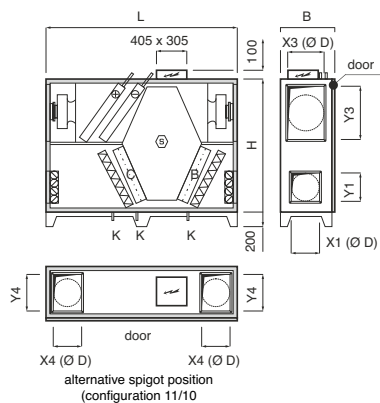


Performance

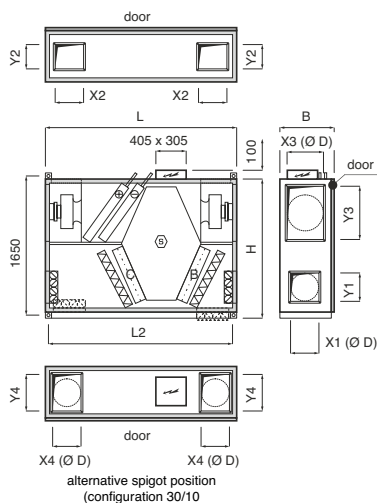


Dimensions

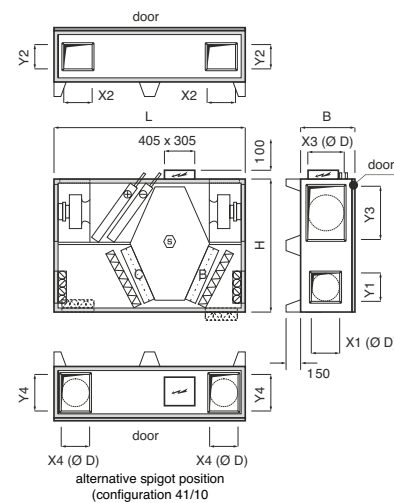
FLOOR STANDING (front view) Multi DV500 to DV8000



UNDERCEILING (top view) Multi DV500 to DV6500
alternative spigot position (configuration 30/5)



FLOOR STANDING FLAT (top view) Multi DV500 to DV6500
alternative spigot position (configuration 41/5)



Duplexvent Multi		DV500	DV1000	DV1500	DV2500	DV3500	DV5000	DV6500	DV8000
Dimension H	mm	765	970	1600	1600	1600	1600	1600	1600
Dimension B	mm	384	384	455	580	665	885	1065	1290
Dimension L	mm	1600	1800	2300	2300	2300	2500	2500	2500
Dimension L2	mm	1652	1852	2270	2270	2270	2470	2470	2470
Condensate drain K	mm	ø22				ø32			
Connecting Ports									
Circular diameter D ¹	mm	200	250	315	-	-	-	-	-
Dimension X1 x Y1 (standard e ₁ , i ₁)	mm	-	-	-	300 x 400	400 x 400	500 x 500	500 x 500	700 x 500
Dimension X2 x Y2 (atypical e ₁ , i ₁)	mm	200 ²	250 ²	400 x 200	300 x 400	400 x 400	500 x 500	500 x 500	-
Dimension X3 x Y3 (standard e ₂ , i ₂)	mm	-	-	-	450 x 710	500 x 710	710 x 710	900 x 710	900 x 710
Dimension X4 x Y4 (atypical e ₂ , i ₂)	mm	-	-	-	250 x 355	250 x 400	355 x 630	355 x 800	355 x 900

1. For Duplexvent Multi DV500, DV1000, DV1500 2. For Duplexvent Multi DV500 and DV1000 only in ceiling - suspended version

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