

FINAL PROTOCOL WORKSHEET for Ventilation Systems: DESIGN
Supply- / Extract-Air Ventilation System with Heat Recovery

Project

Object: **Martin Residence**

Location Street, No.:

Location Postcode, Town:

Building Owner Name:

Building Owner Phone No.:

Year of Construction:

Ventilation Planning

Company: **Edge Innovation Ltd**

Person in Charge: **Richard Walklin**

Street, No.:

Postcode, City:

Phone No.:

Date:

Signature:

Standard use or special requirements:

Dimensioning of the ventilation system according to standard use conditions

2. Criteria for dimensioning the airflow volumes

	reference values	number		resulting starting values
fresh air demand:				
per person:	30 m³/h	2	=	60.0 m³/h
extract air demand:				
kitchens:	60 m³/h	1	=	60.0 m³/h
bathrooms, utility rooms etc.:	40 m³/h	2	=	80.0 m³/h
WC, storage, etc.:	20 m³/h	1	=	20.0 m³/h
sum:				160.0 m³/h
starting value nominal airflow (standard operation):				60.0 m³/h

3. Distribution of the airflow volume flow rate

Nr.	Room (each valve individually)	Area	Clear Height	Room Volume	Air Volume Flow Rate			Air Change Rate	Type of Flow-Off Vent (door gap, grid in door leaf door frame, valve ...)
		A	h	A x h	V _{SU}	V _{EX}	V _{THROUGH}	n	
		m²	m	m³	m³/h	m³/h	m³/h	1/h	
1	Dining	12.88	2.50	32.2	10			0.31	Open Plan
2	Master Bed	16.43	2.50	41.1	20			0.49	3mm Gap
3	Bed 1	16.41	2.50	41.0	20			0.49	3mm Gap
4	Bed 2	16.41	2.50	41.0	20			0.49	3mm Gap
5	Living	21.51	2.50	53.8	20			0.37	3mm Gap
6	Entry	5.23	2.50	13.1	5			0.38	3mm Gap
7	Kitchen Valve A	6.44	2.50	16.1		16		0.99	Open Plan
8	Kitchen Valve B	6.44	2.50	16.1		16		0.99	Open Plan
9	Bath 1 Valve A	3.49	2.50	8.7		14		1.60	8mm Gap
10	Bath 1 Valve B	3.49	2.50	8.7		14		1.60	8mm Gap
11	Bath 2	4.53	2.50	11.3		18		1.59	6mm Gap
12	Laundry	5.00	2.50	12.5		17		1.36	3mm Gap
13	Lobby 1	0.51	2.50	1.3			18	14.12	Open Plan
14	Lobby 2	3.00	2.50	7.5			12	1.60	6mm Gap
15									
16									
17									
18									
19									
20									
	sum:	121.77	---	304.43	95.0	95.0	---	0.31	

4. Adjusted airflow volumes, control range

			ZEHNDER Q350 TR - ACTUAL FLOW SETTINGS
vacation ventilation:		m³/h	50 low vacation / moisture management
base ventilation:	73.1	m³/h	65 at least 30% below nominal airflow volume
nominal airflow volume:	95.0	m³/h	95 fresh air demand, at least 0.3-fold air change rate
peak ventilation:	123.5	m³/h	125 at least 30% above nominal airflow volume
ventilated area:	121.8	m²	
ventilated volume:	304.4	m³	
nominal airflow volume, sum:	0.3	1/h	

5. Efficiency requirements

ventilation unit (manufacturer, product): **02ud-Zehnder ComfoAir Q350**

efficiency of heat recovery: **90** % (according to PHI testing method for the PHPP)

max. power consumption in nominal operating mode: **0.24** W (for fans and control)

6. Requirements for noise protection

A-weighted noise pressure level of the unit in the living space: **25** dB(A)

A-weighted noise pressure level of the unit in the installation room: **35** dB(A)

7. Hygienic requirements

fresh air filter: **F7**

extract air filter: **G3**

first link in the chain, if applicable before subsoil heat exchanger at least bathroom and laundry rooms; recommendation: all extra

FINAL PROTOCOL WORKSHEET for Ventilation Systems: Initial Start-up
Supply- / Extract-Air Ventilation System with Heat Recovery

Project	Initial Start-up	Ventilation System
Object: Martin Residence	Company: Edge Innovation Ltd	Manufacturer: Zehnder Group Zwolle BV
Location Street, No.:	Person in Charge: Richard Walklin	Product Name: Zehnder ComfoAir Q350 TR
Location Postcode, Town:	Street, No.:	Unit Serial No.: 000898370702
Building Owner Name:	Postcode, City:	Control No.: Standard On-Unit Controller
Building Owner Phone No.:	Phone No.:	Flow Measure Device.: Testo 417, Hood & Straightener Set
Year of Construction:	Date:	(Calibrated To Traceable Standard)

1. Record of the air flow volumes, supply and extract air

Nr.	Room	Design			Measurement 1		Measurement 2		Measurement 3		Type of Valve	Adjustment	Flow-Through V _{THROUGH} m/s	Noise dB(A)	Filter Grade	Filter Clean?
		V _{SU} m³/h	V _{EX} m³/h	V _{THROUGH} m³/h	V _{SU} m³/h	V _{EX} m³/h	V _{SU} m³/h	V _{EX} m³/h	V _{SU} m³/h	V _{EX} m³/h						
1	Dining	10			20		12		N/A		Std ZH Supply	95% Closed		≤ 25		N/A
2	Master Bed	20			14		18		N/A		Std ZH Supply	0% Closed		≤ 25		N/A
3	Bed 1	20			15		19		N/A		Std ZH Supply	0% Closed		≤ 25		N/A
4	Bed 2	20			18		22		N/A		Std ZH Supply	0% Closed		≤ 25		N/A
5	Living	20			15		19		N/A		Std ZH Supply	0% Closed		≤ 25		N/A
6	Entry	5			16		6		N/A		Std ZH Supply	95% Closed		≤ 25		N/A
7	Kitchen Valve A		16			18		18		N/A	Std ZH Extract	0% Closed		≤ 35	G3	Yes
8	Kitchen Valve B		16			16		16		N/A	Std ZH Extract	0% Closed		≤ 35	G3	Yes
9	Bath 1 Valve A		14			16		16		N/A	Std ZH Extract	0% Closed		≤ 35	G3	Yes
10	Bath 1 Valve B		14			16		16		N/A	Std ZH Extract	0% Closed		≤ 35	G3	Yes
11	Bath 2		18			18		18		N/A	Std ZH Extract	0% Closed		≤ 35	G3	Yes
12	Laundry		17			17		16		N/A	Std ZH Extract	0% Closed		≤ 35	G3	Yes
13	Lobby 1			18									Not Tested			N/A
14	Lobby 2			12									Not Tested			N/A
15																
16																
17																
18																
19																
20																
	sum:	95.00	95.00	---	98.00	101.00	96.00	100.00					---	---	---	---

2. Balance of airflow volume

	Measurement 1		Measurement 2		Measurement 3		Disbalance	Type of Control	Adjustment	Noise Measurement dB(A)	Filter Grade	Filter Clean?
	V _{AUL} m³/h	V _{FOL} m³/h	V _{AUL} m³/h	V _{FOL} m³/h	V _{AUL} m³/h	V _{FOL} m³/h						
1 fresh air inlet	98.00	---	96.00	---			4.17%	Std Setup	N/A	≤ 35	G4	Yes
2 exhaust air outlet	---	101.00	---	100.00				Std Setup	N/A	≤ 35	G4	Yes

3. Initial start-up accomplished according to manufacturer's specifications:

Yes

Signature: