

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

Project		Ventilation Planning	
Object:	Martin Residence	Company:	Sustainable Engineering Ltd
Location Street, No.:		Person in Charge:	Jason Quinn
Location Postcode, Town:		Street, No.:	
Building Owner Name:		Postcode, City:	
Building Owner Phone No.:		Phone No.:	
Year of Construction	2020	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	x	2	= 60.0 m³/h
extract air demand:				
kitchens:	60 m³/h	x	1	= 60.0 m³/h
bathrooms, utility rooms etc.:	40 m³/h	x	2	= 80.0 m³/h
WC, storage, etc.:	20 m³/h	x	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 Room	12.88	2.50	32.2	10			0.31	
2	Master Bedroom	16.42	2.50	41.1	20			0.49	door gap
3	Bedroom 1	16.41	2.50	41.0	20			0.49	door gap
4	Bedroom 2	16.41	2.50	41.0	20			0.49	door gap
5	Living Room	21.51	2.50	53.8	18			0.33	door gap
6	Lobby	3.51	2.50	8.8			10	1.14	
7	Kitchen	12.88	2.50	32.2		30		0.93	
8	Bath 1	6.98	2.50	17.5		25		1.43	door gap
9	Bath 2	4.53	2.50	11.3		20		1.77	door gap
10	Laundry	5.00	2.50	12.5		17		1.36	door gap
11	Entry	5.23	2.50	13.1	4			0.31	door gap
12									
13									
14									
15									
16									
17									
18									
19									
20									
	sum:	121.76	---	304.40	92.0	92.0	---	0.30	

4. Adjusted airflow volumes, control range

base ventilation:	70.8	m³/h	at least 30% below nominal airflow volume
nominal airflow volume:	92.0	m³/h	fresh air demand, at least 0.3-fold air change rate
peak ventilation:	119.6	m³/h	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 extract

