

MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL

Housetype 37-7 Newcastle Walko

File # 6033A

Builder	Esquire
Address	
City	
Phone	

Principal Ventilation Capacity			
Master Bed	1	31.8 cfm	31.8
Other Bed	3	15.9 cfm	47.7
Total cfm			79.5

Combustion Appliances
☒ a) Direct Vent (sealed combust) including fireplaces ☐ b) Positive venting induced draft (exclude fireplace) ☐ c) Natural Draft, B vent or induced draft fireplaces ☐ d) Solid Fuel ☐ e) No Combustion Appliances

Total Ventilation Capacity			
Bsmt & Master	2	21.2 cfm	42.4
Other Bed	3	10.6 cfm	31.8
Bath & Kitchen	5	10.6 cfm	53
Other Rooms	4	10.6 cfm	42.4
Room Count cfm			169.6
Air Change TVC= HouseVol.X0.3/60			155.5

Heating System
☒ Forced Air ☐ Non Forced Air ☐ Electric Space Heat

Principal Exhaust Fan Capacity		
Make	Model	Location
Broan or Equivalent	684N	Bath
90cfm/2.5 Sones/ HVI listed		

Housetype
☒ I - Type a or b appliances only, no solid fuel ☐ II - Type I with solid fuel (including fireplace) ☐ III - Type C appliance ☐ IV - Type I or II with electric space heat ☐ Other - Type I,II,or IV no forced air

Supplemental Ventilation Capacity	
TVC room or air change (which larger)	170
Less Principal Exhaust Capacity	90
Required Supp.Vent Capacity	80

System Design Option
☒ Exhaust Only/Forced air system ☒ HRV Simplified Connection to Forced Air System ☐ HRV with ducting to forced air system ☐ HRV fully ducted/ not coupled with forced air sys. ☐ Part 6 design CSA F326-M91 ☒ Part 9 9.32.3.1

Supplemental Fans			
Location	cfm	Model	Sones
Ens	50	Broan 650	2.5
Pwd	50	Broan 650	2.5
Ens2	50	Broan 650	2.5
all fans HVI listed			

Heat Recovery Ventilator		
Model		
Venmar Vanee 60H		
Cfm High	150 Cfm Low	36
Sensible effective @ 0 C	72 %	
HRV is HVI listed		

Designer Certification
I have reviewed and take responsibility for this design and am qualified as an "other designer" as required by the OBC 3.2.5 as it relates to residential HVAC design Alexis Dearie-Vonk <u>Alexis Dearie-Vonk</u> BCIN# 27098 HRAI# 3986

NEWRES HVAC DESIGN

9 Hurontario St
Orangeville Ont
L9W 1Y8
416-320-5870

Heat Loss Calculation

Heat loss ^T 76 f Heat Gain ^T 11 f Bsmt ^T 22 f

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qualified as an "other designer" as required by the OBC 3.2.5
as it relates to residential HVAC design.

Alexis Dearie-Vonk BCIN# 27098 HRAI# 3986

Alexis Dearie-Vonk

Customer Esquire
Housetype 37-7 Newcastle Walk
File # 6033A
Date Nov-14
Township Clarington

	Eff	Ens		Mas		Ens2		Br2		Br3		Bath		Br4		Laun		Kit		Fam		Din		Pwd		Foy		Mud												Bsmt	
	Fac	Act	Loss	Act	Loss	Act	Loss	Act	Loss	Act	Loss	Act	Loss	Act	Loss	Act	Loss	Act	Loss	Act	Loss	Act	Loss	Act	Loss	Act	Loss	Act	Loss	Act	Loss	Act	Loss	Act	Loss	Act	Loss	Act	Loss		
Width	22.0	10		15		12		12		12		8		12		11		13		14		12		12		12		14												32	
Length		18		14		5		11		18		16		13		9		20		15		15		13		6		5											33		
Area		180		210		60		132		216		128		156		99		260		210		180		156		72		70												1056	
Height		8		8		8		8		9		8		8		8		9		9		9		9		9		9											8		
LinFtWall		28		36		5		11		32		10		25		9		33		29		15		26		24		19												162	
Gr.Wall		224		288		40		88		288		80		200		72		297		261		135		234		216		171													
Net Wall		196	677	248	857	32	111	72	249	256	884	70	242	180	622	64	221	245	846	209	722	115	397	228	788	188	649	171	591												
Windows																																									
E,W		20	486	32	777					32	777	10	243	20	486			52	1263	28	680					28	680													84	2040
S		8	194	8	194											8	194			8	194																		9	219	
N						8	194	16	388										16	388	20	486	6	146															4	97	
Skylight		3.13																																							
Door		4			21	399																				42	798	42	798										21	399	
Ceiling		50.0	180	274	210	319	60	91	132	201	216	328	128	195	156	237	99	150																							
Cold Flr		31.0											128	314	156	382																									
Header		22.0																33	114	29	100	15	52	26	90	24	83	19	66												
Bsmt Floor		1.0																																						1056	1069
A.Grd wall		5.3																																						648	3466
B.Grd wall		37.4																																						162	6059
Duct Loss		10%												145		251																									
Peop/App					1				1		1				1		1		1		1																				
Total Cond.				1631		2546		396		838		1990		1138		1978		566		2223		2085		935		1023		2210		1454											13347
Air Leak				699		1092		170		359		853		488		848		243		954		894		401		439		948		624											5725
Tot.Rm.Loss BTU			2330		3638		566		1197		2843		1626		2826		809		3177		2979		1336		1462		3158		2078										19073		

ALHLM	14738	\	34360		0.43
Air Leakage	3659	x	0.053	x	76
Vent Loss	169.6	x	1.08	x	76

Total Structure Heat Loss	49098
Ventilation Loss	13921
TOTAL HEAT LOSS BTU	63019

NEWRES HVAC DESIGN

9 Hurontario street
Orangeville Ont
L9W 1Y8
416-320-5870

Heat Gain Calculation

Heat loss ^T 76 Heat Gain ^T 11 Bsmt ^T 22

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as it relates to residential HVAC design.
Alexis Dearie-Vonk BCIN# 27098 HRAI# 3986
A. Dearie-Vonk

Customer Esquire
Housetype 37-7 Newcastle Walkou
File # 6033A
Date Nov-14
Township Clarington

	Fac	Ens		Mas		Ens2		Br2		Br3		Bath		Br4		Laun		Kit		Fam		Din		Pwd		Foy		Mud										Bsmt			
		Act	Gain	Act	Gain	Act	Gain	Act	Gain	Act	Gain	Act	Gain	Act	Gain	Act	Gain	Act	Gain	Act	Gain	Act	Gain	Act	Gain	Act	Gain	Act	Gain	Act	Gain	Act	Gain	Act	Gain	Act	Gain	Act	Gain		
Width	22	10		15		12		12		12		8		12		11		13		14		12		12		12		14											32		
Length		18		14		5		11		18		16		13		9		20		15		15		13		6		5										33			
Area		180		210		60		132		216		128		156		99		260		210		180		156		72		70											1056		
Height		8		8		8		8		9		8		8		8		9		9		9		9		9		9											8		
LinFtWall		28		36		5		11		32		10		25		9		33		29		15		26		24		19												162	
Gr.Wall		224		288		40		88		288		80		200		72		297		261		135		234		216		171													
Net Wall		196	125	248	158	32	20	72	46	256	163	70	45	180	115	64	41	245	156	209	133	115	73	228	145	188	120	171	109												
Windows																																									
E,W	36.01	20	720	32	1152					32	1152	10	360	20	720			52	1873	28	1008					28	1008												84	3025	
S	21.77	8	174	8	174										8	174			8	174																		9	196		
N	13.97					8	112	16	224										16	224	20	279	6	84														4	56		
Skylight	62.23																																								
Door	4			21	74																				42	147	42	147											21	74	
Ceiling	50	180	151	210	176	60	50	132	111	216	181	128	108	156	131	99	83																								
Cold Flr	31											128	37	156	45																										
Header	22																	33	21	29	18	15	10	26	17	24	15	19	12										162	103	
Bsmt Floor																																									
A.Grd wall	0.5																																						648	293	
B.Grd wall																																									
Total Cond			1170		1734		183		380		1497		549		1011		298		2049		1557		362		245		1290		268											3746	
Air Leak.			147		218		23		48		188		69		127		37		257		196		45		31		162		34											471	
Peop/App				1	240			1	240	1	240			1	240	1	1195	1	1604	1	240																				
Late.Gain			395		658		62		200		577		185		413		459		1173		598		122		83		436		90											1265	
Total Rm.Gain BTU		1712		2850		267		868		2502		804		1792		1990		5084		2591		530		359		1888		392										5481			

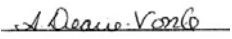
People @240	1200	& kitchen	1604	& Laundry	1195	3999				
Latent Multiplier (.3)	9933		Air Leakage	3659	X	0.051	X	11	2053	
Ventilation Gain	TVC * 1.08 * 1.3 * HG^T				2619	ALHGM	2053	\	16341	0.13

Total Structure Heat Gain	29110
Ventilation	2619
Total Heat Gain BTU	31729

NEWRES HVAC DESIGN

9 Hurontario street
Orangeville Ont
L9W 1Y8
416-320-5870

Duct Calculation

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residential HVAC design. 
Alexis Dearie-Vonk BCIN# 27098 HRAI# 3986

Customer Esquire
Housetype -7 Newcastle Walk
File # 6033A
Date Nov-14
Township Clarington

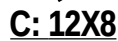
Trunk	C							B						A																			
Outlet #	6	15	20	14	7	8	16	2	3	11	17	10	1	18	12	4	13	5	19	9													
Outlet Loc	Br3	Foy	Bsmt	Pwd	Bath	Br4	Mud	Mas	Mas	Fam	Bsmt	Kit	Ens	Bsmt	Fam	Ens2	Din	Br2	Bsmt	Laun													
BTU/RM	2843	3158	19073	1462	1626	2826	2078	3638	3638	2979	19073	3177	2330	19073	2979	566	1336	1197	19073	809													
# Out/Rm	1	1	4	1	1	1	1	2	2	2	4	1	1	4	2	1	1	1	4	1													
CFM/Outlet	58	65	98	30	33	58	43	37	37	31	98	65	48	98	31	12	27	25	98	17													
Act&Eff Len	175	150	160	170	200	220	190	175	185	170	170	185	200	150	160	185	180	195	180	205													
Adj.Press	0.07	0.09	0.08	0.08	0.07	0.06	0.07	0.07	0.07	0.08	0.08	0.07	0.07	0.09	0.08	0.07	0.07	0.07	0.07	0.06													
Pipe Size	5	6	6	5	5	5	5	5	5	5	6	6	5	6	5	5	5	5	6	5													
Tr.Fl.Rate							386						317							624													
TrunkWidth							12						10							18													
Tr.Height							8						8							8													
Velocity							579						570							624													

Trunk	Y			Z						
Inlet #	4R	1R	6R	5R	2R	3R				
CFM	350	160	95	155	160	90				
Inlet Size	30X8	14X8	6"	14X8	14X8	6"				
Act&Eff Len	200	200	170	155	170	160				
Adj.Press.	0.06	0.06	0.06	0.07	0.06	0.06				
Tr.Fl.Rate			605			1010				
Tr.Width			18			28				
Tr.Height			8			8				
Velocity			605			649				

Equipment	
Manufacturer	Carrier
Furnace	59SC080
Output	78000
AirFlow	1010
AC Size	2.5

Supply Air Pres	0.15
S.Air Plenum Pres	0.14
Diffuser Loss	0.01
System Static	0.5

Return Air Pres	0.15
R.Air Plenum Pres	0.11
Diffuser Loss	0.04

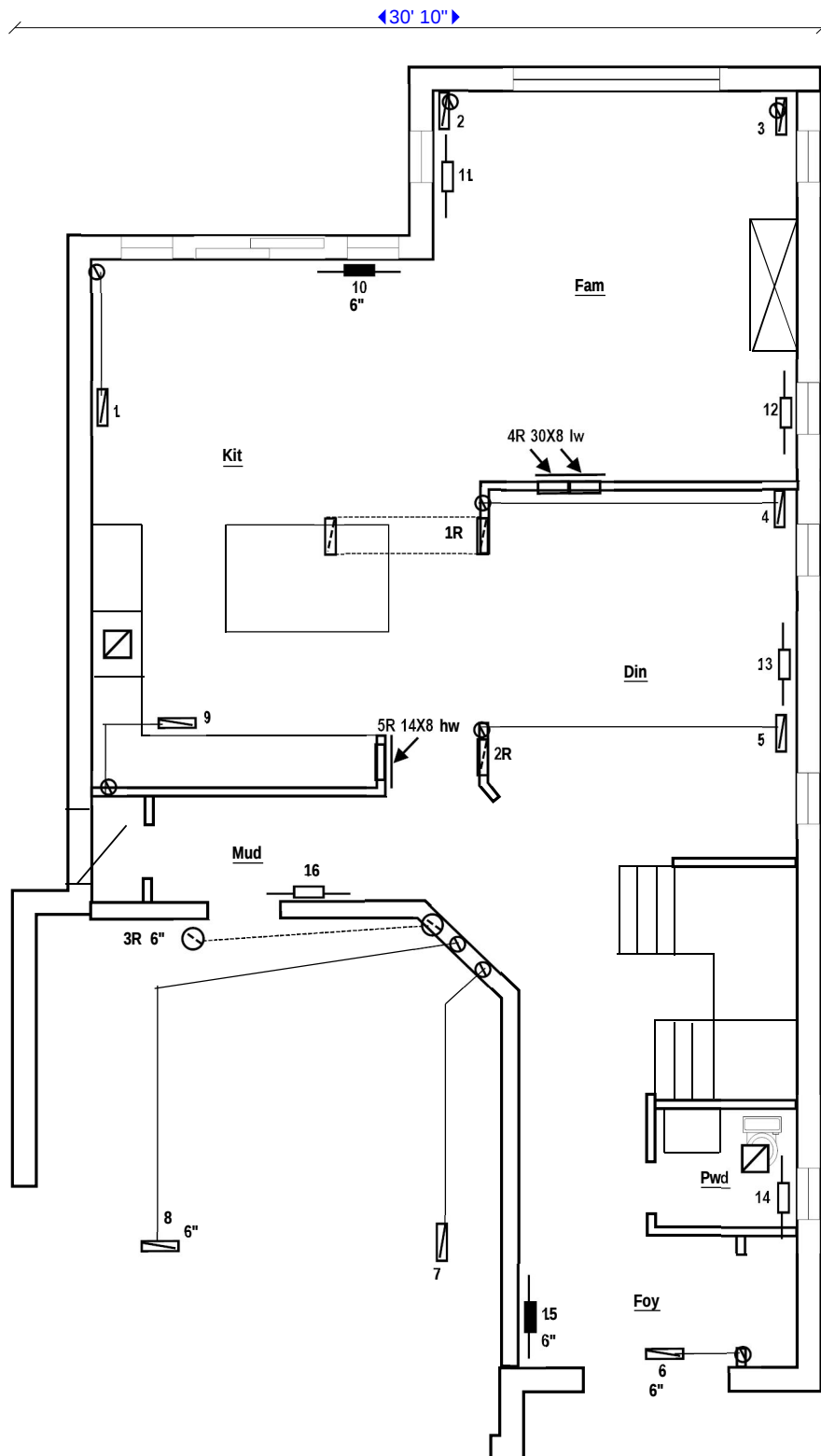


2385 SF

J Package

Northglen-Clarington

	NewRes HVAC Design 9 Hurontario st Orangeville On L9W 1Y8 Phone (416) 320-5870
Client	Esquire Homes
LO#	6033A

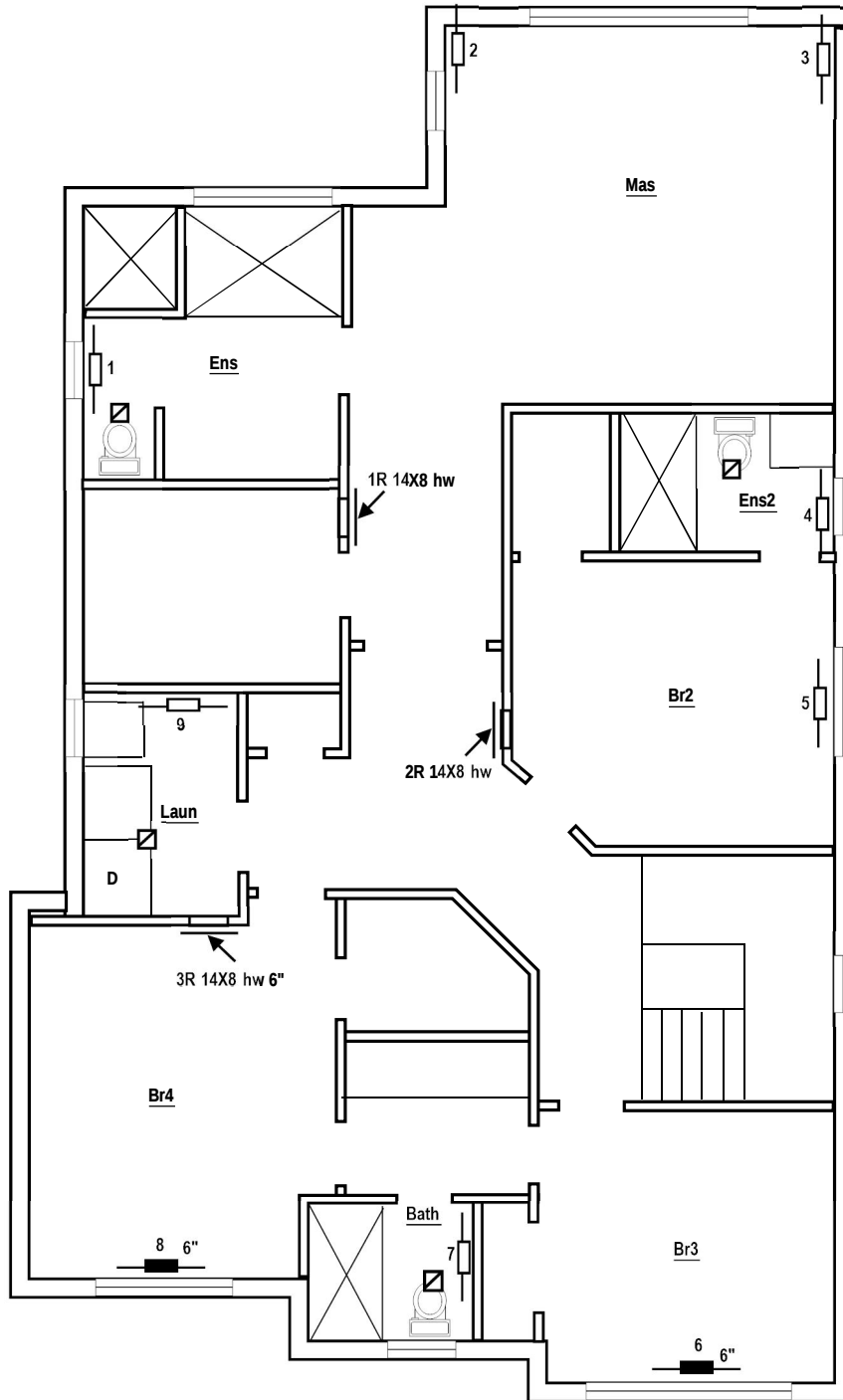


All runs 5" unless otherwise specified

Northglen-Clarington

Make		UNIT DATA		I have reviewed and take responsibility for this design and am qualified as an "other designer" as described by the OBC Div.C, Part 3, ss 3.2.5 in relation to HVAC design. <i>Alexis Dearie-Vonk</i> Alexis Dearie-Vonk 27098 3986 BCIN HRAI	Type	37-7 Newcastle WOB	NewRes HVAC Design 9 Hurontario st Orangeville On L9W 1Y8 Phone (416) 320-5870 Client Esquire Homes LO# 6033A
Input		BTU	Output		Floor	First	
Cooling		Tons	Fan		Scale	3/16"=1'0"	
No. of Runs	S/A		R/A		Date	Nov-14	
2nd Floor					Revised		
1st Floor							
Basement							

30' 6"



All runs 5" unless otherwise specified

Northglen-Clarington

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Input	BTU	Output	BTU		Floor	Second	
Cooling	Tons	Fan	Cfm		Scale	3/16"=1'0"	
No. of Runs	S/A	R/A			Date	Nov-14	Client
2nd Floor					Revised		Esquire Homes
1st Floor							LO#
Basement							6033A