MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL

Housetype	40-3 Queensbridge

File #	3076

Builder	Esquire
Address	
City	
Phone	

Principal Ventilation Capacity

Master Bed	1	31.8 cfm	31.8
Other Bed	2	15.9 cfm	31.8
		Total cfm	63.6

Combustion Appliances

- [x] 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	2	10.6 cfm	21.2
Bath & Kitchen	4	10.6 cfm	42.4
Other Rooms	5	10.6 cfm	53
		Room Count cfm	159
Air Change TVC= HouseVol.X0.3/60			112.4

Heating System

- [x] 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

- [x] 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)		159
Less Principal Exhaust Capacity		90
Required Supp.Vent Capacity	CFM	69

System Design Option

- [x] Exhaust Only/Forced air system
- [x] 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
- [x] Part 9 9.32.3.1

Supplemental Fans

Location	cfm	Model	Sones
Ens	50	Broan 650	2.5
Pwd	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 reponsibility 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 A Dearie-Vonk

BCIN# 27098 HRAI# 3986

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

Heat Loss Calculation

Heat loss ^T 74 f Heat Gain ^T 11 f Bsmt ^T 22 f

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Alexis Dearie-Vonk BCIN# 27098 HRAI# 3986
A Dearie-Vonk

Customer	Esquire
Housetype	40-3 Queensbridge
File #	3076
Date	Aug-13
Township	Clarington

	Eff	Fam		Kit		Liv/Din		Pwd		Foy		Mas		Ens												Br3		Bsmt		Bath		Br2		Den		Great	
	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
Width		18		11		13		14		14		17		17												15		15		10		10		10		19	
Length		11		20		20		6		5		14		5												12		21		8		12		8		18	
Area		198		220		260		84		70		238		85												180		315		80		120		80		342	
Height		9		9		9		9		9		9		9												8		8		8		8		8		8	
LinFtWall		29		31		28		12		24		31		5												27		55		8		12		18		37	
Gr.Wall		261		279		252		108		216		279		45																							
Net Wall	22.0	221	743	244	821	222	747	108	363	188	632	249	838	31	104																						
Windows																																					
E,W		40	946	35	827					28	662																									20	473
S												30	709	14	331											10	236										
N						30	709																							6	142	10	236	6	142		
Skylight	3.13																																				
Door	4									42	777																										
Ceiling	50.0	198	293	220	326	260	385	84	124	70	104	238	352	85	126																						
Cold Flr	31.0																																				
Header	22.0	29	98	31	104	28	94	12	40	24	81	31	104	5	17											180	182	315	319	80	81	120	121	80	81	342	346
Bsmt Floor	1.0																									95	495	137	713	28	146	42	219	63	328	129	672
A.Grd wall	5.2																									27	1010	55	2057	8	299	12	449	18	673	37	1384
B.Grd wall	37.4																																				
Duct Loss	10%																																				
Peop/App		1		1								1																									
Total Cond.			2080		2078		1935		528		2256		2003		578												1923		3089		668		1025		1224		2875
Air Leak			969		968		901		246		1051		933		269												896		1439		311		478		570		1339
Tot.Rm.Loss BTU		3048		3046		2836		774		3306		2936		847												2819		4528		979		1503		1794		4214	

ALHLM	10370	\	22262			0.47
Air Leakage	2644	x	0.053	x	74	10370
Vent Loss	159	x	1.08	x	74	12707

Total Structure Heat Loss	32631
Ventilation Loss	12707
TOTAL HEAT LOSS BTU	45339

NEWRES HVAC DESIGN
9 Hurontario street
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L9W 1Y8
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Heat Gain Calculation

Heat loss ^T 74 Heat Gain ^T 11 Bsmt ^T 22

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Housetype	40-3 Queensbridge
File #	3076
Date	Aug-13
Township	Clarington

		Fam		Kit		Liv/Din		Pwd		Foy		Mas		Ens																Br3		Bsmt		Bath		Br2		Den		Great	
	Fac	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	Act	Gain
Width		18		11		13		14		14		17		17																15		15		10		10		10		19	
Length		11		20		20		6		5		14		5																12		21		8		12		8		18	
Area		198		220		260		84		70		238		85																180		315		80		120		80		342	
Height		9		9		9		9		9		9		9																8		8		8		8		8		8	
LinFtWall		29		31		28		12		24		31		5																27		55		8		12		18		37	
Gr.Wall		261		279		252		108		216		279		45																216		440		64		96		144			
Net Wall	22	221	141	244	155	222	141	108	69	188	120	249	158	31	20																										
Windows																																									
E,W	36.01	40	1440	35	1260					28	1008																													20	720
S	21.77											30	653	14	305															10	218										
N	13.97					30	419																											6	84	10	140	6	84		
Skylight	62.23																																								
Door	4									42	147																														
Ceiling	50	198	166	220	185	260	218	84	71	70	59	238	200	85	71																										
Cold Flr	31																																								
Header	22	29	18	31	20	28	18	12	8	24	15	31	20	5	3																									37	24
Bsmt Floor																																									
A.Grd wall	0.5																													95	43	137	62	28	13	42	19	63	28	129	58
B.Grd wall																																									
Total Cond			1766		1620		797		147		1349		1031		399																261		62		96		159		112		802
Air Leak.			305		279		137		25		233		178		69																45		11		17		27		19		138
Peop/App		1	240	1	1604							1	240																		240						240				
Late.Gain			693		1051		280		52		474		435		140																164		22		34		128		39		282
Total Rm.Gain BTU		3003		4555		1214		224		2056		1884		608																709		94		147		554		171		1222	

People @240	1200	& kitchen	1604	& Laundry	1195	3999		
Latent Multiplier (.3)	6132	Air Leakage	2644	X 0.051	X 11	1483		
Ventilation Gain	TVC * 1.08 * 1.3 * HG^T	2456	ALHGM	1483	\ 8601	0.17		

Total Structure Heat Gain	16442
Ventilation	2456
Total Heat Gain BTU	18898

Duct Calculation

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Alexis Dearie-Vonk BCIN# 27098 HRAI# 3986

Customer	Esquire
Housetype	40-3 Queensbridge
File #	3076
Date	Aug-13
Township	Clarington

416-320-5870

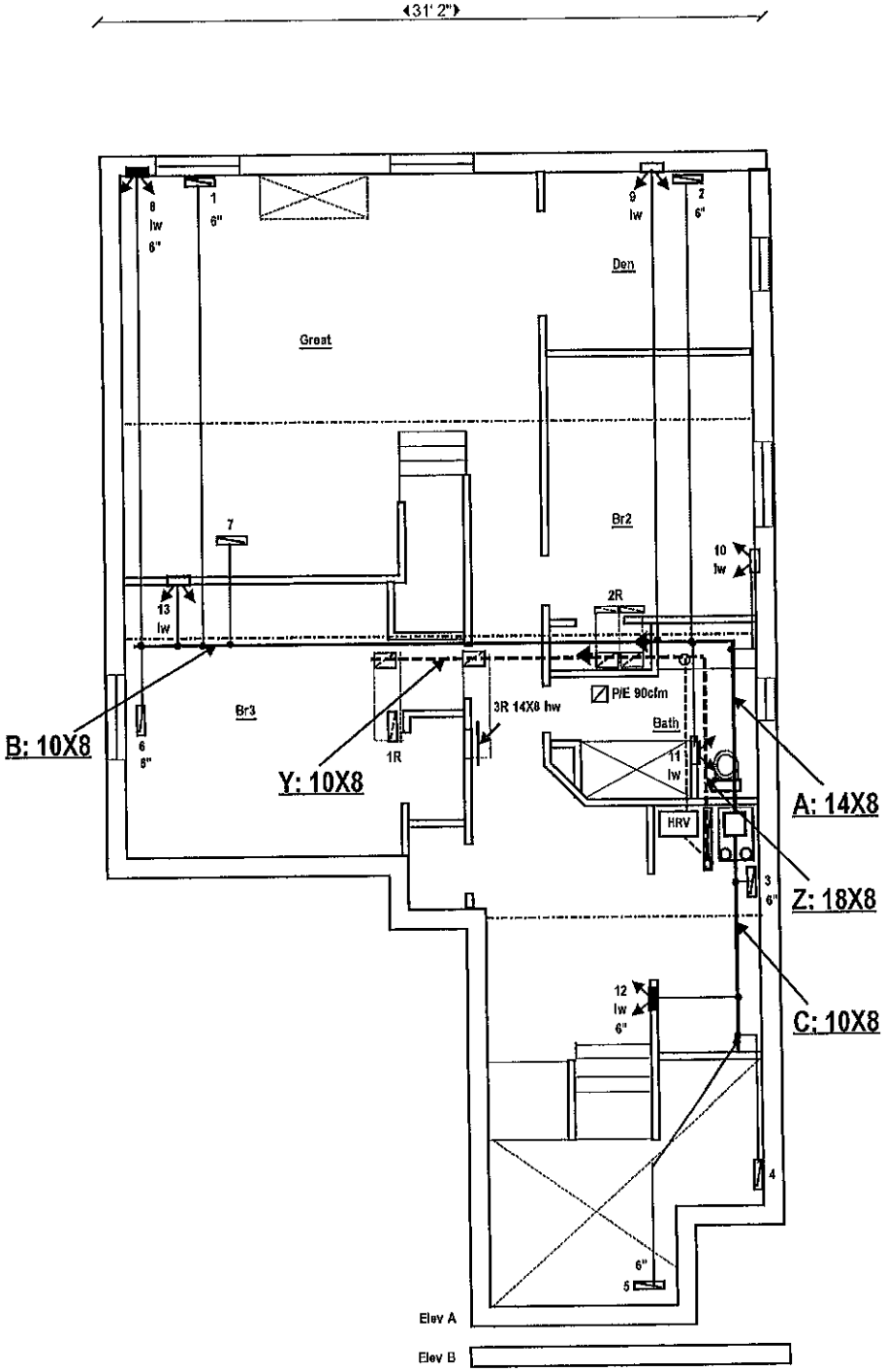
Trunk	C				B					A																						
Outlet #	5	4	12	3	6	8	13	1	7	9	2	11	10																			
Outlet Loc	Foy	Pwd	Bsmt	Liv/Din	Mas	Great	Br3	Fam	Ens	Den	Kit	Bath	Br2																			
BTU/RM	3306	774	4528	2836	2936	4214	2819	3048	847	1794	3046	979	1503																			
# Out/Rm	1	1	1	1	1	1	1	1	1	1	1	1	1																			
CFM/Outlet	68	16	94	59	61	87	58	63	18	37	63	20	31																			
Act&Eff Len	140	150	155	175	160	175	185	195	205	150	155	170	180																			
Adj.Press	0.09	0.09	0.08	0.07	0.08	0.07	0.07	0.07	0.06	0.09	0.08	0.08	0.07																			
Pipe Size	6	5	6	5	6	6	5	6	5	5	6	5	5																			
Tr.Fl.Rate				287					287				438																			
TrunkWidth				10					10				14																			
Tr.Height				8					8				8																			
Velocity				426					516				563																			

Trunk	Y		Z							
Inlet #	1R	3R	2R							
CFM	150	150	375							
Inlet Size	14X8	14X8	30X8							
Act&Eff Len	200	175	140							
Adj.Press.	0.06	0.06	0.08							
Tr.Fl.Rate		300	675							
Tr.Width		10	18							
Tr.Height		8	8							
Velocity		540	675							

Equipment	
Manufacturer	Carrier
Furnace	59SC060
Output	58000
AirFlow	675
AC Size	1.5

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



J Package

Ceil.w Attic	R50	Heated Slab	R10
Ceil.w/o Attic	R31	Windows	R3.13
Exp.Floor	R31	Skylights	U2.8
Walls	R22	Furn Eff	94%
B.G.Slab	R10	HRV Eff	72%

1322 SF

(Or Equivalent Furnace)

All runs 5" unless otherwise specified

Northglen-Clarington

HRV: Venmar Vanee 60H

UNIT DATA			
Make	Carrier	Model	59SC060
Input	60000 BTU	Output	58000 BTU
Cooling	1.5 Tons	Fan	675 Cfm

	S/A	R/A
No. of Runs		
2nd Floor		
1st Floor	7	2
Basement	6	1

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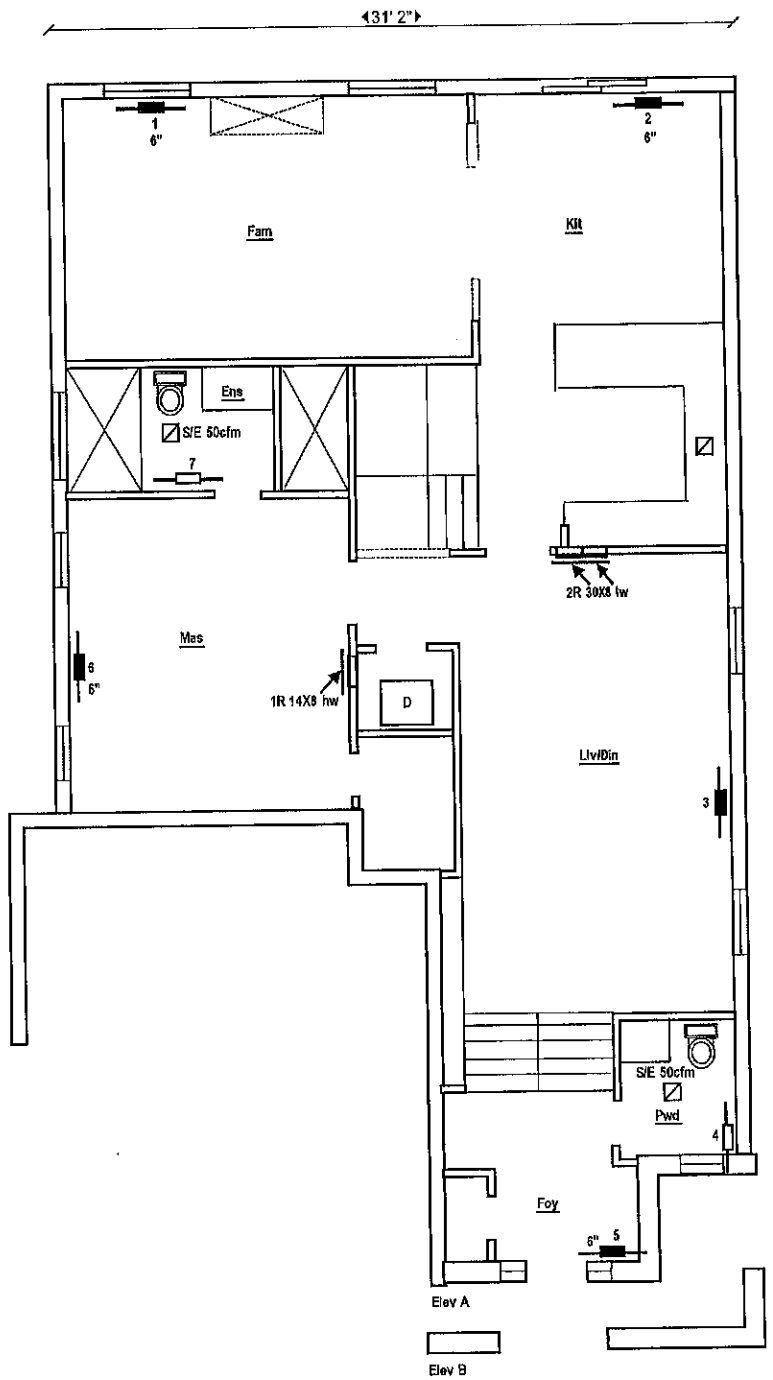
Alexis Dearle-Vonk 27098 3956
BCIN HRAI

Type	40-3 Queensbridge
Floor	Basement
Scale	3/16"=1'0"
Date	Aug-13
Revised	

NewRes
HVAC Design
9 Hurontario st Orangeville On L9W 1Y8
Phone (416) 320-5870

Client	Esquire
LO#	3076



All runs 5" unless otherwise specified

Northglen-Clarington

UNIT DATA			
Make		Model	
Input	BTU	Output	BTU
Cooling	Tons	Fan	Cfm

No. of Runs	S/A	R/A
2nd Floor		
1st Floor		
Basement		

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Alexis Dearle-Vonk 27098 3986
BCIN HRAI

Type	40-3 Queensbridge
Floor	First
Scale	3/16"=1'0"
Date	Aug-13
Revised	

NewRes
HVAC Design
9 Hurontario st Orangeville On L9W 1Y8
Phone (416) 320-5870

Client	Esquire
LC#	3076