



# Load Short Form

## Entire House

### Shadow River Mechanical

Job:  
Date: Mar 11, 2024  
By:

Cert.#:  
46 Cemetery Rd, Rosseau, ON P0C 1J0 Phone: 705 771 0640 Email: ben@shadowrivermechanical.ca Web: www.shadowrivermechanical.ca

## Project Information

For: Example Home

## Design Information

	Htg	Clg		Infiltration	
Outside db (°F)	-11	82	Method		F280
Inside db (°F)	72	75	Expos. categ		Partially sheltered
Design TD (°F)	83	7	Const. categ		Energy Tight (ACH=1.5)
Daily range	-	M	Number of stories		1.0
Inside humidity (%)	50	50			
Moisture difference (gr/lb)	56	33			

### HEATING EQUIPMENT

Make	Goodman Mfg.	
Trade	GOODMAN	
Model	GMVC960603BN	
AHRI ref	7368833	
Efficiency	96.1 AFUE	
Heating input	60000	Btuh
Heating output	58000	Btuh
Temperature rise	50	°F
Actual air flow	1074	cfm
Air flow factor	0.029	cfm/Btuh
Static pressure	0.80	in H2O
Space thermostat		

### COOLING EQUIPMENT

Make	Goodman Mfg.	
Trade	GOODMAN	
Cond	GSXC702410A*	
Coil	C(A,C,D,E)30B4G+G*VC960403BNB*+TDR	
AHRI ref	209868674	
Efficiency	12.2 EER2, 16.7 SEER2	
Sensible cooling	15260	Btuh
Latent cooling	6540	Btuh
Total cooling	21800	Btuh
Actual air flow	727	cfm
Air flow factor	0.054	cfm/Btuh
Static pressure	0.80	in H2O
Load sensible heat ratio	0.79	

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Kitchen	225	4683	3874	137	210
Master	195	4717	2517	138	137
WIC	54	0	0	0	0
Bath	81	1702	911	50	49
Entry	120	3576	1699	105	92
Living	675	11942	4324	349	235
Crawl Space	1350	10117	78	296	4

Entire House	d	2700	36736	13402	1074	727
Other equip loads			6626	1766		
Equip. @ 1.00 RSM				15169		
Latent cooling				4039		
<b>TOTALS</b>		<b>2700</b>	<b>43362</b>	<b>19207</b>	<b>1074</b>	<b>727</b>



# Building Analysis

## Entire House

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## Design Conditions

### Location:

Parry Sound, ON, CA  
Elevation: 577 ft  
Latitude: 45°N

### Outdoor:

Dry bulb (°F)  
Daily range (°F)  
Wet bulb (°F)  
Wind speed (mph)

### Heating

-11  
-  
-  
6.2

### Cooling

82  
16 ( M )  
71  
6.2

### Indoor:

Indoor temperature (°F)  
Design TD (°F)  
Relative humidity (%)  
Moisture difference (gr/lb)

### Heating

72  
83  
50  
56.1

### Cooling

75  
7  
50  
32.9

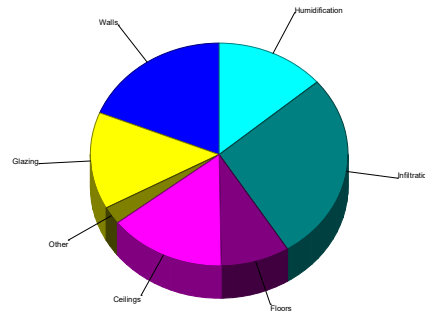
### Infiltration:

Method  
Expos. categ  
Const. categ  
Number of stories

F280  
Partially sheltered  
Energy Tight (ACH=1.5)  
1.0

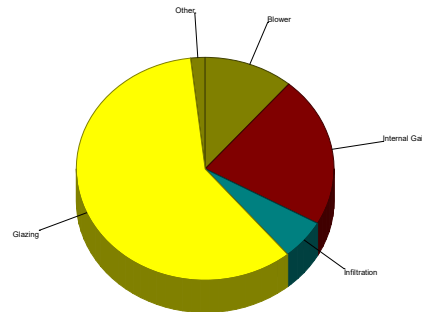
## Heating

Component	Btuh/ft²	Btuh	% of load
Walls	4.0	8186	18.9
Glazing	29.9	6105	14.1
Doors	20.6	434	1.0
Ceilings	4.2	6390	14.7
Floors	2.8	3752	8.7
Infiltration	52.8	11869	27.4
Ducts		0	0
Hydronic		0	0
Humidification		5952	13.7
Ventilation		674	1.6
Adjustments		0	
<b>Total</b>		<b>43362</b>	<b>100.0</b>



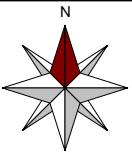
## Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	0.1	217	1.4
Glazing	44.0	8986	59.2
Doors	0	0	0
Ceilings	0	0	0
Floors	0	0	0
Infiltration	3.9	880	5.8
Ducts		0	0
Ventilation		60	0.4
Internal gains		3320	21.9
Blower		1707	11.3
Adjustments		0	
<b>Total</b>		<b>15169</b>	<b>100.0</b>

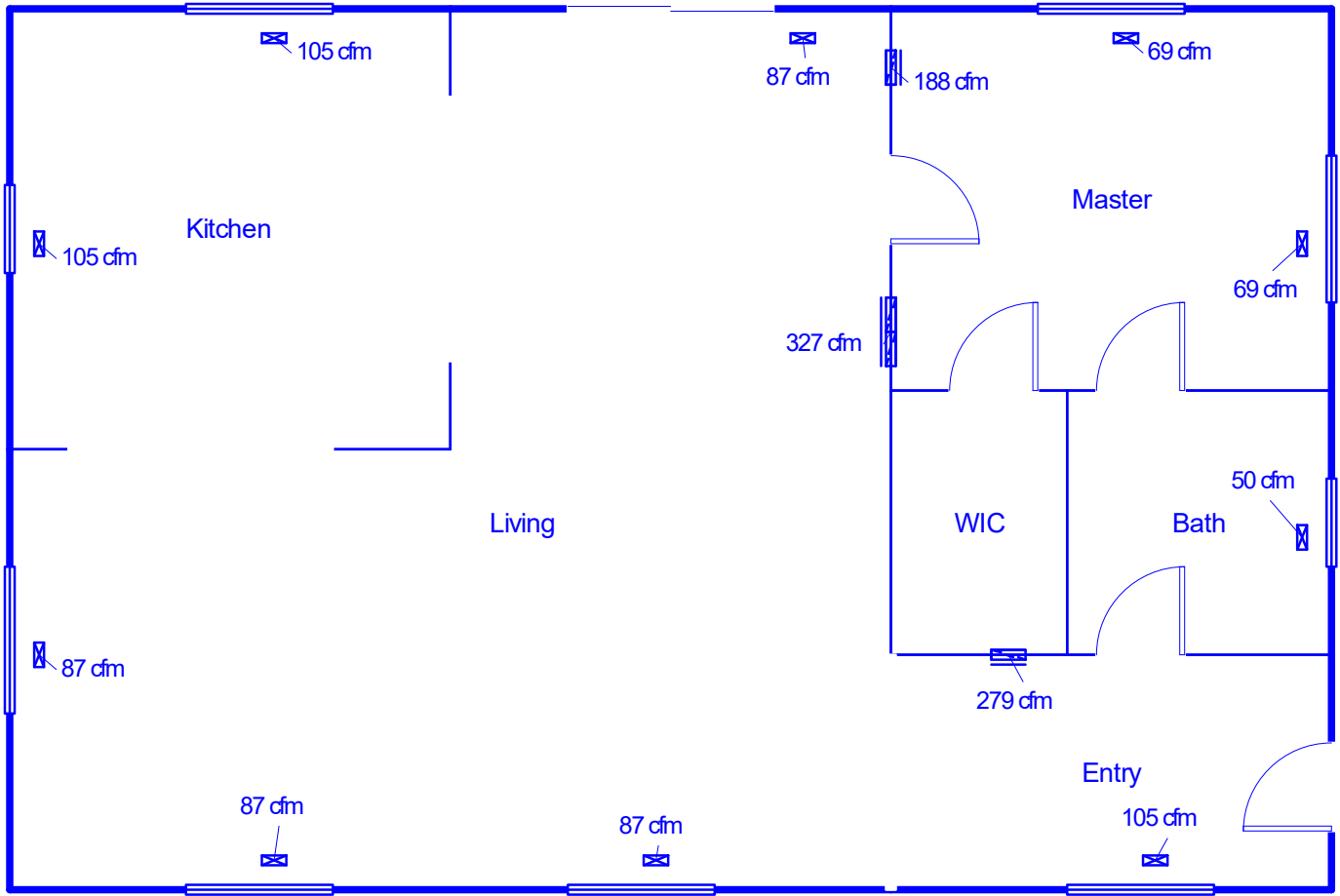


Latent Cooling Load = 4039 Btuh  
Overall U-value = 0.050 Btuh/ft²-°F, Window / Floor Area = 7.6 %

Data entries checked.



### Main Floor



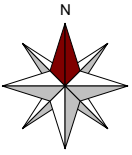
**Job #:**  
**Performed for:**  
Example Home

### Shadow River Mechanical

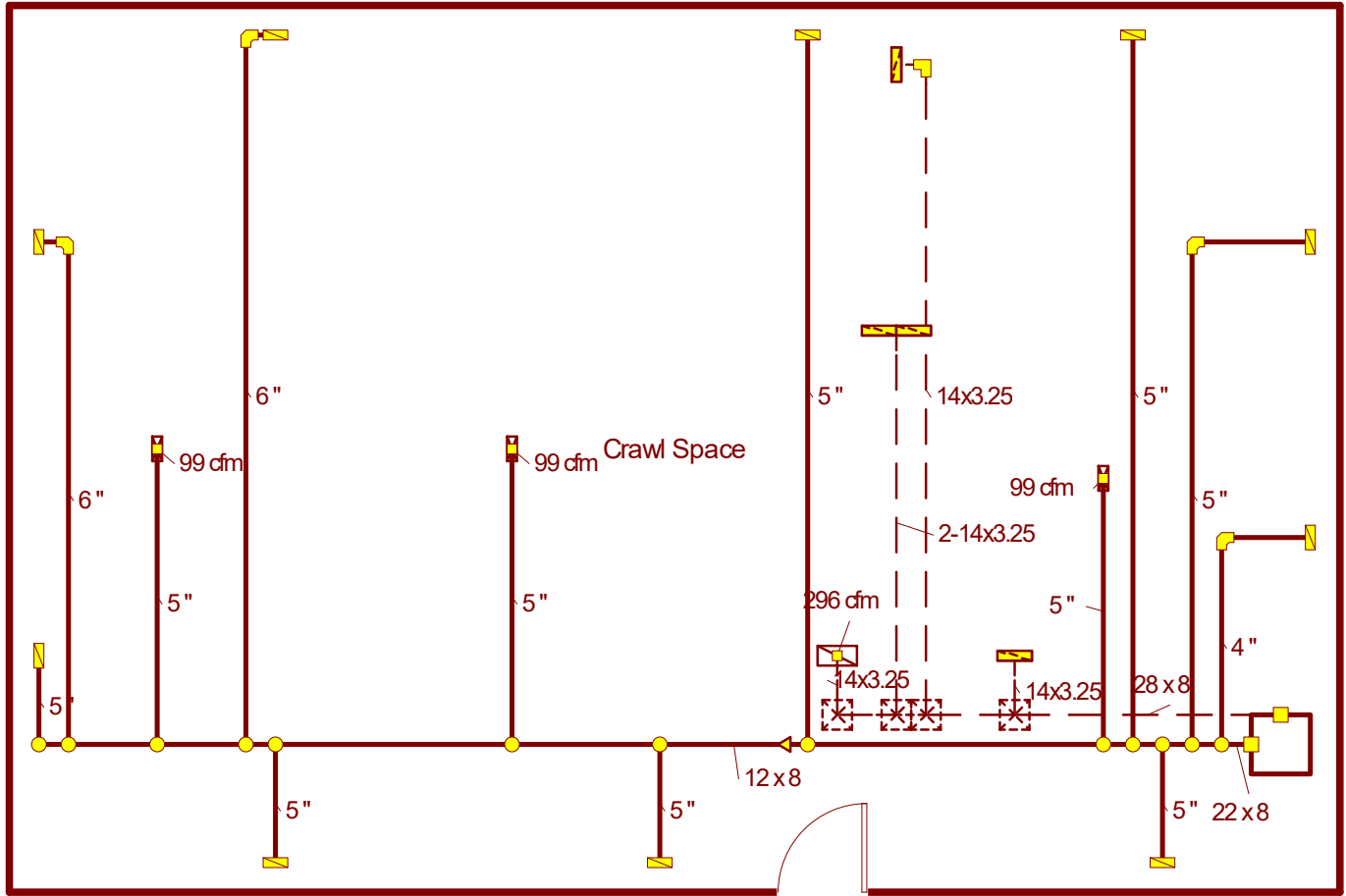
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## Crawl Space



**Job #:**  
**Performed for:**  
Example Home

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# Duct System Summary

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## Project Information

For: Example Home

	Heating	Cooling
External static pressure	0.80 in H2O	0.80 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.80 in H2O	0.80 in H2O
Supply / return available pressure	0.422 / 0.378 in H2O	0.422 / 0.378 in H2O
Lowest friction rate	0.193 in/100ft	0.193 in/100ft
Actual air flow	1074 cfm	727 cfm
Total effective length (TEL)	415 ft	

## Supply Branch Detail Table

Name	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
Bath	h 1702	50	49	0.227	4.0	0x0	ShMt	11.0	175.0	st1
Crawl Space	h 3372	99	1	0.226	5.0	0x0	ShMt	47.0	140.0	st1A
Crawl Space-A	h 3372	99	1	0.304	5.0	0x0	ShMt	14.0	125.0	st1
Crawl Space-B	h 3372	99	1	0.206	5.0	0x0	ShMt	35.0	170.0	st1A
Entry	h 3576	105	92	0.278	5.0	0x0	ShMt	7.0	145.0	st1
Kitchen	c 1937	68	105	0.193	6.0	0x0	ShMt	59.0	160.0	st1A
Kitchen-A	c 1937	68	105	0.225	6.0	0x0	ShMt	58.0	130.0	st1A
Living	h 2986	87	59	0.207	5.0	0x0	ShMt	24.0	180.0	st1A
Living-A	h 2986	87	59	0.214	5.0	0x0	ShMt	37.0	160.0	st1A
Living-B	h 2986	87	59	0.274	5.0	0x0	ShMt	44.0	110.0	st1A
Living-C	h 2986	87	59	0.274	5.0	0x0	ShMt	39.0	115.0	st1
Master	h 2359	69	68	0.225	5.0	0x0	ShMt	23.0	165.0	st1
Master-A	h 2359	69	68	0.259	5.0	0x0	ShMt	28.0	135.0	st1

## Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st1A	Peak AVF	596	389	0.193	894	9.9	8 x 12	ShtMetl	st1
st1	Peak AVF	1074	727	0.193	879	12.4	8 x 22	ShtMetl	

## Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb4	0x0	279	209	101.0	0.374	883	6.6	3.25x14	10x9	SJSp	rt1
rb3	0x0	188	186	190.0	0.199	594	6.4	3.25x14	10x9	SJSp	rt1
rb1	0x0	311	327	196.0	0.193	518	7.9	2-3.25x14	2-10x18	SJSp	rt1
rb2	0x0	296	4	107.0	0.353	936	6.8	3.25x14	10x9	SJSp	rt1

## Return Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
rt1	Peak AVF	1074	727	0.193	690	12.4	8 x 28	ShtMetl	