

H.V.A.C. Calculations

- Heating Load
- Cooling Load
- ASHREA 62 - Fresh Air Load

**PROJECT: 77762 Elgin Mills Rd
Markham Hospice**

Design Conditions:

	OUTSIDE	INSIDE	
HEATING:	-9° F	75°F	30%RH
COOLING:	86°F(db) 75°F(wb)	72°F	50%RH

Building Enclosure U-Values ($Btu/(hr \cdot ft^2 \cdot ^\circ F)$):

Wall:	0.084
Roof:	0.02
Window:	0.32



PEO#100134411

2026.04.28

TYPICAL PATIENT BEDROOM

HEAT GAIN

Win (N):	72 x	14 x	0.96 x	0.6 =	577
Win (Tr):	72 x	0.32 x	12	=	275
Wall:	199 x	0.084 x	12	=	200
Roof:	320 x	0.02 x	43	=	275
Electrical:	320 x	2 x	3.4	=	2176
People:	2 x	450		=	900
Fresh air (Fs):	320 x	0.18 =	58		
Fresh air (Fp):	2 x	10 =	20		
Fresh air (Sum):	97 x	40.44 x	0.6	=	2354
Total:					7432 btu/hr

HEAT LOSS

Win:	72 x	0.32 x	84	=	1922
Wall:	199 x	0.084 x	84	=	1401
Roof:	320 x	0.02 x	84	=	538
Fresh air:	97 x	1.08 x	84 x	0.6 =	5280
Total:					7940 btu/hr

LIVING/ DINING/KITCHEN

HEAT GAIN

Win (S):	36 x	102 x	0.79 x	0.6 =	1741
Win (W):	18 x	14 x	0.2 x	0.6 =	30
Win (Tr):	54 x	0.32 x	12	=	207
Wall:	326 x	0.084 x	12	=	329
Electrical:	325 x	3 x	3.4	=	3315
People:	4 x	450		=	1800
Fresh air (Fs):	325 x	0.06 =	20		
Fresh air (Fp):	4 x	7.5 =	30		
Fresh air (Sum):	62 x	40.44 x	0.6	=	1501
Total:					9815 btu/hr

HEAT LOSS

Win:	54 x	0.32 x	84	=	1452
Wall:	326 x	0.084 x	84	=	2300
Fresh air:	62 x	1.08 x	84 x	0.6 =	3368
Total:					7832 btu/hr

MULTI-USE RM

HEAT GAIN

Win (S):	36 x	102 x	0.79 x	0.6 =	1741
Win (E):	18 x	13 x	0.29 x	0.6 =	41
Win (Tr):	54 x	0.32 x	12	=	207
Wall:	326 x	0.084 x	12	=	329
Electrical:	325 x	3 x	3.4	=	3315
People:	10 x	450		=	4500
Fresh air (Fs):	325 x	0.12 =	39		
Fresh air (Fp):	10 x	5 =	50		
Fresh air (Sum):	111 x	40.44 x	0.6	=	2699
Total:					10953 btu/hr

HEAT LOSS

Win:	54 x	0.32 x	84	=	1452
Wall:	326 x	0.084 x	84	=	2300
Fresh air:	111 x	1.08 x	84 x	0.6 =	6056
Total:					10788 btu/hr

GREETING HALL

HEAT GAIN

Electrical:	140 x	3 x	3.4	=	1428
People:	6 x	450		=	2700
Fresh air (Fs):	140 x	0.06 =	8		
Fresh air (Fp):	6 x	5 =	30		
Fresh air (Sum):	48 x	40.44 x	0.6	=	1165
Total:					5822 btu/hr

HEAT LOSS

Fresh air:	48 x	1.08 x	84 x	0.6 =	2613
Total:					2874 btu/hr

TUB ROOM

HEAT GAIN

Electrical:	170 x	1.5 x	3.4	=	867
People:	2 x	450		=	900
Fresh air (Fs):	170 x	0.06 =	10		
Fresh air (Fp):	2 x	5 =	10		
Fresh air (Sum):	25 x	40.44 x	0.6	=	613
Total:					2618 btu/hr

HEAT LOSS

Fresh air:	25 x	1.08 x	84 x	0.6 =	1374
Total:					1512 btu/hr

NURSE STATION

HEAT GAIN

Electrical:	90 x	3 x	3.4	=	918
People:	2 x	450		=	900
Fresh air (Fs):	90 x	0.06 =	5		
Fresh air (Fp):	2 x	5 =	10		
Fresh air (Sum):	19 x	40.44 x	0.6	=	467
Total:					2514 btu/hr

HEAT LOSS

Fresh air:	19 x	1.08 x	84 x	0.6 =	1048
Total:					1153 btu/hr

OFFICES (SOUTH)

HEAT GAIN

Win (S):	90 x	102 x	0.79 x	0.6 =	4351
Win (E):	18 x	13 x	0.29 x	0.6 =	41
Win (W):	18 x	14 x	0.2 x	0.6 =	30
Win (Tr):	126 x	0.32 x	12	=	484
Wall:	666 x	0.084 x	12	=	671
Roof:	835 x	0.02 x	43	=	718
Electrical:	835 x	3 x	3.4	=	8517
People:	4 x	450		=	1800
Fresh air (Fs):	835 x	0.06 =	50		
Fresh air (Fp):	4 x	5 =	20		
Fresh air (Sum):	88 x	40.44 x	1	=	3544
Total:					22172 btu/hr

HEAT LOSS

Win:	126 x	0.32 x	84	=	3387
Wall:	666 x	0.084 x	84	=	4699
Roof:	835 x	0.02 x	84	=	1403
Fresh air:	88 x	1.08 x	84 x	1 =	7949
Total:					19182 btu/hr

OFFICES (NORTH)

HEAT GAIN

Wall:	162 x	0.084 x	12	=	163
Roof:	180 x	0.02 x	43	=	155
Electrical:	180 x	3 x	3.4	=	1836
People:	1 x	450		=	450
Fresh air (Fs):	180 x	0.06 =	11		
Fresh air (Fp):	2 x	5 =	10		
Fresh air (Sum):	26 x	40.44 x	1	=	1051
Total:					4021 btu/hr

HEAT LOSS

Wall:	162 x	0.084 x	84	=	1143
Roof:	180 x	0.02 x	84	=	302
Fresh air:	26 x	1.08 x	84 x	1 =	2359
Total:					4185 btu/hr