FORM 405-10

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name	140346	Builder Name	Milton Builders
Street	Lake Jeffrey Rd	Permit Office	
City, State, Zip	, FL ,	Permit Number	
Owner	Saulsby Addition	Jurisdiction	
Design Location	FL, Gainesville		

1. New construction or existing	Addition
2. Single family or multiple family	Single-family
3. Number of units, If multiple family	1
4. Number of Bedrooms(Bedrms In Addition)	3(3)
5. Is this a worst case?	No
6. Conditioned floor area above grade (ft²)	790
Conditioned floor area below grade (ft²)	0

7. Windows(84 0 sqft.)	Description	Area
a. U-Factor: SHGC	Dbl, U=0 30 SHGC=0 30	84 00 ft²
b U-Factor: SHGC	N/A	ft²
c. U-Factor SHGC	N/A	ft²
d U-Factor: SHGC	N/A	ft²
Area Weighted Average Overhang Depth		0.804 ft
Area Weighted Average SHGC		0 300

8 Floor Types (790 0 sqft)	Insulation	Area
a Slab-On-Grade Edge Insulation	R=0 0	790.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

9 Wall Types (656 0 sqft.)	Insulation	Area
a. Frame - Wood, Exterior	R=13.0	656 00 ft²
b N/A	R=	ft²
c. N/A	R=	ft²
d N/A	R=	ft²

10 Ceiling Types (790 0 sqft.)	Insulation	Area
a Under Attic (Vented)	R=30.0	790 00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

11 Ducts	R	ft²
a. Sup Attic, Ret Attic, AH Main	6	158

12 Cooling systems	kBtu/hr	Efficiency
a. Central Unit	19 0	SEER 15 00

13 Heating systems	kBtu/hr	Efficiency
a Electric Heat Pump	19 0	HSPF 8 20

14 Hot water systems - Supplemental for addition
a Electric — Cap 40 gallons, EF 0 900
b Conservation features
None

15 Credits — Pstat

Glass/Floor Area 0.106

Total Proposed Modified Loads 16.76
Total Standard Reference Loads. 21.31

PASS

I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code

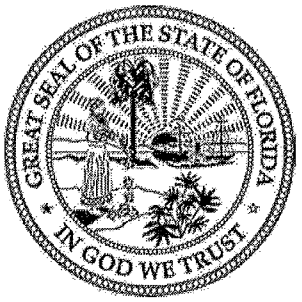
PREPARED BY EVAN BEAMSLEY
DATE 2014-05-05

I hereby certify that this building, as designed, is in compliance with the Florida Energy Code

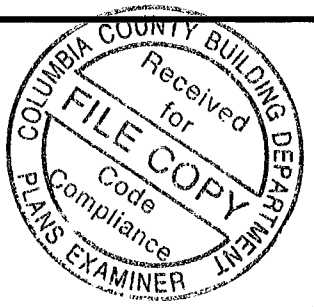
OWNER/AGENT _____
DATE _____

Review of the plans and specifications covered by this calculation indicates compliance with the Florida Energy Code Before construction is completed this building will be inspected for compliance with Section 553.908 Florida Statutes.

BUILDING OFFICIAL _____
DATE _____



- Compliance requires completion of a Florida Air Barrier and Insulation Inspection Checklist



PROJECT

Title	140346	Bedrooms	3	Address Type	Street Address
Building Type	User	Conditioned Area	790	Lot #	
Owner	Saulsby Addition	Total Stories	1	Block/SubDivision	
# of Units	1	Worst Case	No	PlatBook	
Builder Name	Milton Builders	Rotate Angle	0	Street	Lake Jeffrey Rd.
Permit Office		Cross Ventilation		County	Columbia
Jurisdiction		Whole House Fan		City, State, Zip	, FL ,
Family Type	Single-family				
New/Existing	Addition				
Comment					

CLIMATE

√	Design Location	TMY Site	IECC Zone	Design Temp 97.5 %	Design Temp 2 5 %	Int Design Temp Winter	Int Design Temp Summer	Heating Degree Days	Design Moisture	Daily Temp Range
_____	FL, Gainesville	FL_GAINESVILLE_REGI	2	32	92	70	75	1305.5	51	Medium

BLOCKS

Number	Name	Area	Volume
1	Block1	790	6320

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	Main	790	6320	No	6	3	1	Yes	Yes	Yes

FLOORS

√	#	Floor Type	Space	Perimeter	R-Value	Area		Tile	Wood	Carpet
_____	1	Slab-On-Grade Edge Insulatio	Main	82 ft	0	790 ft²	----	0 3	0	0 7

ROOF

√	#	Type	Materials	Roof Area	Gable Area	Roof Color	Solar Absor	SA Tested	Emitt	Emitt Tested	Deck Insul	Pitch (deg)
_____	1	Gable or shed	Composition shingles	884 ft²	198 ft²	Dark	0 96	No	0 9	No	0	26 6

ATTIC

√	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
_____	1	Full attic	Vented	300	790 ft²	N	N

CEILING

√	#	Ceiling Type	Space	R-Value	Area	Framing Frac	Truss Type
_____	1	Under Attic (Vented)	Main	30	790 ft²	0 11	Wood

WALLS

√	#	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	Width In	Height Ft	Height In	Area	Sheathing R-Value	Framing Fraction	Solar Absor	Below Grade%
____	1	S	Exterior	Frame - Wood	Main	13	25	6	8		204 0 ft²		0 23	0 75	0
____	2	W	Exterior	Frame - Wood	Main	13	31		8		248 0 ft²		0 23	0 75	0
____	3	N	Exterior	Frame - Wood	Main	13	25	6	8		204.0 ft²		0 23	0.75	0

WINDOWS

Orientation shown is the entered, Proposed orientation

√	#	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Area	Overhang Depth	Overhang Separation	Int Shade	Screening
_____	1	S	1	Metal	Low-E Double	Yes	0 3	0 3	15.0 ft²	1 ft 6 in	1 ft 0 in	None	None
_____	2	W	2	Metal	Low-E Double	Yes	0 3	0 3	30.0 ft²	0 ft 0 in	0 ft 0 in	None	None
_____	3	W	2	Metal	Low-E Double	Yes	0 3	0.3	9 0 ft²	0 ft 0 in	0 ft 0 in	None	None
_____	4	N	3	Metal	Low-E Double	Yes	0 3	0 3	30.0 ft²	1 ft 6 in	1 ft 0 in	None	None

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Best Guess	.0007	1450 5	79 63	149 76	539	13 770

HEATING SYSTEM

√	#	System Type	Subtype	Efficiency	Capacity	Block	Ducts
_____	1	Electric Heat Pump	None	HSPF 8 2	19 kBtu/hr	1	sys#1

COOLING SYSTEM

√	#	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
_____	1	Central Unit	None	SEER 15	19 kBtu/hr	570 cfm	0 75	1	sys#1

HOT WATER SYSTEM

√	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
_____	1	Electric	None	Main	0 9	40 gal	60 gal	120 deg	None

SOLAR HOT WATER SYSTEM

√	FSEC Cert #	Company Name	System Model #	Collector Model #	Collector Area	Storage Volume	FEF
_____	None	None			ft²		

DUCTS

√	#	Supply Location	Supply R-Value	Supply Area	Return Location	Return Area	Leakage Type	Air Handler	CFM 25 TOT	CFM25 OUT	QN	RLF	HVAC # Heat	HVAC # Cool
_____	1	Attic	6	158 ft²	Attic	39 5 ft²	Default Leakage	Main	(Default)	(Default)			1	1

TEMPERATURES

Programable Thermostat. Y Ceiling Fans

Cooling	[ ] Jan	[ ] Feb	[ ] Mar	[ ] Apr	[ ] May	[X] Jun	[X] Jul	[X] Aug	[X] Sep	[ ] Oct	[ ] Nov	[ ] Dec
Heating	[X] Jan	[X] Feb	[X] Mar	[ ] Apr	[ ] May	[ ] Jun	[ ] Jul	[ ] Aug	[ ] Sep	[ ] Oct	[X] Nov	[X] Dec
Venting	[ ] Jan	[ ] Feb	[X] Mar	[X] Apr	[ ] May	[ ] Jun	[ ] Jul	[ ] Aug	[ ] Sep	[X] Oct	[X] Nov	[ ] Dec

Thermostat Schedule	HERS 2006 Reference	Hours											
Schedule Type		1	2	3	4	5	6	7	8	9	10	11	12
Cooling (WD)	AM	78	78	78	78	78	78	78	78	80	80	80	80
	PM	80	80	78	78	78	78	78	78	78	78	78	78
Cooling (WEH)	AM	78	78	78	78	78	78	78	78	78	78	78	78
	PM	78	78	78	78	78	78	78	78	78	78	78	78
Heating (WD)	AM	66	66	66	66	66	68	68	68	68	68	68	68
	PM	68	68	68	68	68	68	68	68	68	68	66	66
Heating (WEH)	AM	66	66	66	66	66	68	68	68	68	68	68	68
	PM	68	68	68	68	68	68	68	68	68	68	66	66

FORM 405-10

Florida Code Compliance Checklist

Florida Department of Business and Professional Regulations
Residential Whole Building Performance Method

ADDRESS: Lake Jeffrey Rd. , FL,	PERMIT #.

MANDATORY REQUIREMENTS SUMMARY - See individual code sections for full details.

COMPONENT	SECTION	SUMMARY OF REQUIREMENT(S)	CHECK
Air leakage	402 4	To be caulked, gasketed, weatherstripped or otherwise sealed. Recessed lighting IC-rated as meeting ASTM E 283. Windows and doors = 0.30 cfm/sq.ft. Testing or visual inspection required. Fireplaces: gasketed doors & outdoor combustion air. Must complete envelope leakage report or visually verify Table 402.4.2.	
Thermostat & controls	403 1	At least one thermostat shall be provided for each separate heating and cooling system. Where forced-air furnace is primary system, programmable thermostat is required. Heat pumps with supplemental electric heat must prevent supplemental heat when compressor can meet the load.	
Ducts	403 2 2 403 3 3	All ducts, air handlers, filter boxes and building cavities which form the primary air containment passageways for air distribution systems shall be considered ducts or plenum chambers, shall be constructed and sealed in accordance with Section 503.2.7.2 of this code. Building framing cavities shall not be used as supply ducts.	
Water heaters	403 4	Heat trap required for vertical pipe risers. Comply with efficiencies in Table 403.4.3.2. Provide switch or clearly marked circuit breaker (electric) or shutoff (gas). Circulating system pipes insulated to = R-2 + accessible manual OFF switch.	
Mechanical ventilation	403 5	Homes designed to operate at positive pressure or with mechanical ventilation systems shall not exceed the minimum ASHRAE 62 level. No make-up air from attics, crawlspaces, garages or outdoors adjacent to pools or spas.	
Swimming Pools & Spas	403 9	Pool pumps and pool pump motors with a total horsepower (HP) of = 1 HP shall have the capability of operating at two or more speeds. Spas and heated pools must have vapor-retardant covers or a liquid cover or other means proven to reduce heat loss except if 70% of heat from site-recovered energy. Off/timer switch required. Gas heaters minimum thermal efficiency=78% (82% after 4/16/13). Heat pump pool heaters minimum COP= 4.0.	
Cooling/heating equipment	403 6	Sizing calculation performed & attached. Minimum efficiencies per Tables 503.2.3. Equipment efficiency verification required. Special occasion cooling or heating capacity requires separate system or variable capacity system. Electric heat >10kW must be divided into two or more stages.	
Ceilings/knee walls	405 2 1	R-19 space permitting.	

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 79

The lower the EnergyPerformance Index, the more efficient the home.

Lake Jeffrey Rd., , FL,

1. New construction or existing		Addition	
2. Single family or multiple family		Single-family	
3. Number of units, if multiple family		1	
4. Number of Bedrooms		3(3)	
5. Is this a worst case?		No	
6 Conditioned floor area (ft²)		790	
7 Windows**	Description		Area
a U-Factor·	Dbl, U=0 30		84.00 ft²
SHGC	SHGC=0 30		
b U-Factor·	N/A		ft²
SHGC			
c. U-Factor	N/A		ft²
SHGC			
d U-Factor·	N/A		ft²
SHGC			
Area Weighted Average Overhang Depth			0 804 ft
Area Weighted Average SHGC			0 300
8. Floor Types		Insulation	Area
a. Slab-On-Grade Edge Insulation		R=0 0	790 00 ft²
b. N/A		R=	ft²
c N/A		R=	ft²

9. Wall Types	Insulation	Area
a Frame - Wood, Exterior	R=13 0	656 00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²
d. N/A	R=	ft²
10. Ceiling Types	Insulation	Area
a Under Attic (Vented)	R=30 0	790 00 ft²
b N/A	R=	ft²
c N/A	R=	ft²
11 Ducts		R ft²
a Sup Attic, Ret Attic, AH Main		6 158
12. Cooling systems	kBtu/hr	Efficiency
a Central Unit	19 0	SEER 15 00
13 Heating systems	kBtu/hr	Efficiency
a Electric Heat Pump	19.0	HSPF 8 20
14. Hot water systems - Supplemental for addition		Cap 40 gallons
a. Electric		EF 0.9
b Conservation features		
None		
15 Credits		Pstat

I certify that this home has complied with the Florida Energy Efficiency Code for Building Construction through the above energy saving features which will be installed (or exceeded) in this home before final inspection. Otherwise, a new EPL Display Card will be completed based on installed Code compliant features.

Builder Signature· _____ Date. _____

Address of New Home. _____ City/FL Zip· _____

*Note· This is not a Building Energy Rating. If your Index is below 70, your home may qualify for energy efficient mortgage (EEM) incentives if you obtain a Florida EnergyGauge Rating. Contact the EnergyGauge Hotline at (321) 638-1492 or see the EnergyGauge web site at energygauge.com for information and a list of certified Raters. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

**Label required by Section 303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

Residential System Sizing Calculation

Summary

Saulsby Addition
Lake Jeffrey Rd.
, FL

Project Title
140346

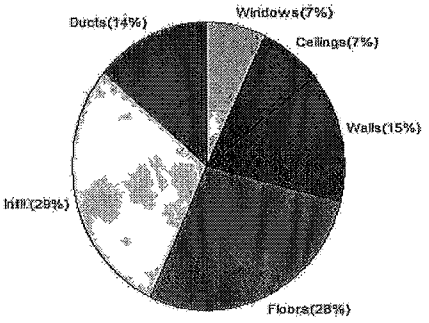
5/5/2014

Location for weather data Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 ft.) Temp Range(M) Humidity data: Interior RH (50%) Outdoor wet bulb (77F) Humidity difference(54gr.)					
Winter design temperature(MJ8 99%)	33	F	Summer design temperature(MJ8 99%)	92	F
Winter setpoint	70	F	Summer setpoint	75	F
Winter temperature difference	37	F	Summer temperature difference	17	F
Total heating load calculation	**12769**	**Btuh**	**Total cooling load calculation**	**16104**	**Btuh**
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	148.8	19000	Sensible (SHR = 0.75)	119.3	14250
Heat Pump + Auxiliary(0.0kW)	148.8	19000	Latent	114.1	4750
			Total (Electric Heat Pump)	118.0	19000

WINTER CALCULATIONS

Winter Heating Load (for 790 sqft)

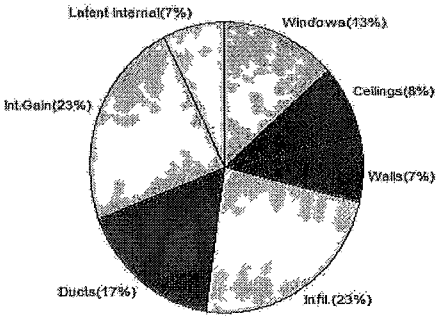
Load component			Load	
Window total	84	sqft	932	Btuh
Wall total	572	sqft	1878	Btuh
Door total	0	sqft	0	Btuh
Ceiling total	790	sqft	931	Btuh
Floor total	790	sqft	3580	Btuh
Infiltration	91	cfm	3680	Btuh
Duct loss			1768	Btuh
Subtotal			**12769**	**Btuh**
Ventilation	0	cfm	0	Btuh
TOTAL HEAT LOSS			**12769**	**Btuh**



SUMMER CALCULATIONS

Summer Cooling Load (for 790 sqft)

Load component			Load	
Window total	84	sqft	2168	Btuh
Wall total	572	sqft	1193	Btuh
Door total	0	sqft	0	Btuh
Ceiling total	790	sqft	1308	Btuh
Floor total			0	Btuh
Infiltration	68	cfm	1268	Btuh
Internal gain			3780	Btuh
Duct gain			2222	Btuh
Sens Ventilation	0	cfm	0	Btuh
Blower Load			0	Btuh
Total sensible gain			**11940**	**Btuh**
Latent gain(ducts)			474	Btuh
Latent gain(infiltration)			2490	Btuh
Latent gain(ventilation)			0	Btuh
Latent gain(internal/occupants/other)			1200	Btuh
Total latent gain			**4164**	**Btuh**
TOTAL HEAT GAIN			**16104**	**Btuh**



8th Edition

EnergyGauge® System Sizing
PREPARED BY EIAN BERMUDEZ
DATE 2014-05-05

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Saulsby Addition
Lake Jeffrey Rd.
, FL

Project Title:
140346
Building Type User

5/5/2014

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference· 37.0 F (MJ8 99%)

Component Loads for Whole House

Window	Panes/Type	Frame	U	Orientation	Area(sqft) X	HTM=	Load
1	2, NFRC 0.30	Metal	0.30	S	15.0	11.1	166 Btuh
2	2, NFRC 0.30	Metal	0.30	W	30.0	11.1	333 Btuh
3	2, NFRC 0.30	Metal	0.30	W	9.0	11.1	100 Btuh
4	2, NFRC 0.30	Metal	0.30	N	30.0	11.1	333 Btuh
	Window Total				84.0(sqft)		932 Btuh

Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	189	3.28	621 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	209	3.28	686 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	174	3.28	571 Btuh
	Wall Total				572(sqft)		1878 Btuh

Ceilings	Type/Color/Surface	Ueff.	R-Value	Area X	HTM=	Load
1	Vented Attic/D/Shing	(0.032)	30.0/0.0	790	1.2	931 Btuh
	Ceiling Total			790(sqft)		931Btuh

Floors	Type	Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade	(1.180)	0.0	82.0 ft(perim.)	43.7	3580 Btuh
	Floor Total			790 sqft		3580 Btuh

	Envelope Subtotal.	7322 Btuh

Infiltration	Type	Wholehouse ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural	0 86	6320	1 00	90 8	3680 Btuh

Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.161)	1768 Btuh
All Zones	**Sensible Subtotal All Zones**	**12769 Btuh**

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	12769 Btuh
	Ventilation Sensible Heat Loss	0 Btuh
	Total Heat Loss	12769 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Saulsby Addition
Lake Jeffrey Rd.
, FL

Project Title.
140346
Building Type User

5/5/2014

EQUIPMENT

1. Electric Heat Pump	#	19000 Btuh

Key Window types - NFRC (Requires U-Factor and Shading coefficient(SHGC) of glass as numerical values)
or - Glass as 'Clear' or 'Tint' (Uses U-Factor and SHGC defaults)
U - (Window U-Factor)
HTM - (ManualJ Heat Transfer Multiplier)

Version 8

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Saulsby Addition
Lake Jeffrey Rd.
, FL

Project Title:
140346

5/5/2014

Reference City. Gainesville, FL Temperature Difference· 17.0F(MJ8 99%) Humidity difference· 54gr.

Component Loads for Whole House

	Type*						Overhang		Window Area(sqft)			HTM		Load
Window	Panes	SHGC	U	InSh	IS	Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded	
1	2 NFRC	0 30, 0 30		No	No	S	1.5ft	1.0ft	15 0	15 0	0.0	11	14	171 Btuh
2	2 NFRC	0 30, 0 30		No	No	W	0.0ft	0 0ft	30 0	0 0	30 0	11	34	1021 Btuh
3	2 NFRC	0 30, 0 30		No	No	W	0 0ft	0 0ft	9 0	0.0	9 0	11	34	306 Btuh
4	2 NFRC	0 30, 0 30		No	No	N	1 5ft	1 0ft	30 0	0.0	30 0	11	11	342 Btuh
	Excursion													328 Btuh
	Window Total								84 (sqft)					2168 Btuh

Walls	Type	U-Value	R-Value Cav/Sheath	Area(sqft)	HTM	Load
1	Frame - Wood - Ext	0 09	13 0/0 0	189 0	2 1	394 Btuh
2	Frame - Wood - Ext	0 09	13 0/0 0	209 0	2 1	436 Btuh
3	Frame - Wood - Ext	0 09	13 0/0 0	174 0	2 1	363 Btuh
	Wall Total			572 (sqft)		1193 Btuh
Ceilings	Type/Color/Surface	U-Value	R-Value	Area(sqft)	HTM	Load
1	Vented Attic/DarkShingle	0 032	30 0/0 0	790 0	1 66	1308 Btuh
	Ceiling Total			790 (sqft)		1308 Btuh
Floors	Type		R-Value	Size	HTM	Load
1	Slab On Grade		0 0	790 (ft-perimeter)	0 0	0 Btuh
	Floor Total			790.0 (sqft)		0 Btuh
				Envelope Subtotal		4669 Btuh

Infiltration	Type	Average ACH	Volume(cuft)	Wall Ratio	CFM=	Load
	Natural	0.65	6320	1	68.1	1268 Btuh
Internal gain		Occupants	Btuh/occupant		Appliance	Load
		6	X 230	+	2400	3780 Btuh
				Sensible Envelope Load·		9717 Btuh
Duct load	Average sealed, Supply(R6 0-Attic), Return(R6 0-Attic)			(DGM of 0.229)		2222 Btuh
				Sensible Load All Zones		**11940 Btuh**

Manual J Summer Calculations

Residential Load - Component Details (continued)

Saulsby Addition
Lake Jeffrey Rd.
, FL

Project Title.
140346

Climate FL_GAINESVILLE_REGIONAL_A

5/5/2014

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	**Sensible Envelope Load All Zones**	**9717 Btuh**
	Sensible Duct Load	2222 Btuh
	Total Sensible Zone Loads	**11940 Btuh**
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	**11940 Btuh**
	Latent infiltration gain (for 54 gr. humidity difference)	2490 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	474 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	**4164 Btuh**
	TOTAL GAIN	**16104 Btuh**

EQUIPMENT

1. Central Unit	#	19000 Btuh

*Key Window types (Panes - Number and type of panes of glass)
(SHGC - Shading coefficient of glass as SHGC numerical value)
(U - Window U-Factor)
(InSh - Interior shading device none(No), Blinds(B), Draperies(D) or Roller Shades(R))
- For Blinds Assume medium color, half closed
For Draperies Assume medium weave, half closed
For Roller shades Assume translucent, half closed
(IS - Insect screen none(N), Full(F) or Half(½))
(Ornt - compass orientation)

Version 8