

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION
Alternate Residential Points System Method

FORM 600A-08

NORTH 1 2 3

PROJECT NAME: AND ADDRESS:	1112063	BUILDER: Bryan Zecher Construction	
		PERMITTING OFFICE: <u>Columbia</u>	CLIMATE ZONE: 1 ☐ 2 ☐ 3 ☒
OWNER:	Glenn Res.	PERMIT NO.: <u>29863</u>	JURISDICTION NO.: <u>221800</u>

Please Type

CK

- New construction or addition
- Single-family detached or Multiple-family attached
- If Multiple-family-No. of units covered by this submission
- Is this a worst case? (yes/no)
- Conditioned floor area (sq. ft.)
- Predominant eave overhang (ft.)
- Glass type¹ and area: (Label required by 13-104.4.5 if not default)
 - U-factor: (or Single- or Double-Pane DEFAULT)
 - SHGC: (or Clear or Tint DEFAULT)
- Floor type and insulation:
 - Slab-on-grade (R-value + perimeter)
 - Wood, raised (R-value + sq. ft.)
 - Concrete, raised (R-value)
- Net wall type, area and insulation:
 - Exterior:
 - Concrete block (Insulation R-value)
 - Wood frame (Insulation R-value)
 - Steel frame (Insulation R-value)
 - Log (Insulation R-value)
 - Other: _____
 - Adjacent:
 - Concrete block (Insulation R-value)
 - Wood frame (Insulation R-value)
 - Steel frame (Insulation R-value)
 - Log (Insulation R-value)
- Ceiling type, area and insulation:
 - Under attic (Insulation R-value)
 - Single assembly (Insulation R-value)
 - Radiant barrier, IRCC or white roof installed?
- Air distribution system:
 - Ducts (Insulation + Location)
 - Air Handler (Location)
- Cooling system:
(Types: central-split, central-single pkg., room unit, PTAC, gas, none)
- Heating system:
(Types: heat pump, elec. strip, nat. gas, LP gas, gas h.p., room or PTAC, none)
- Hot water system:
(Types: elec., natural gas, solar, LP gas, none)
- Hot water credits
 - Heat Recovery (HR)
 - Dedicated Heat Pump (DHP)
 - Solar
- HVAC Credits
(Use: CF-ceiling fan, CV-cross vent, PT-programmable thermostat, HF-whole house fan, MZ-Multizone)
- COMPLIANCE STATUS: (PASS if As-Built Pts. are less than Base Pts.)
 - Total As-Built points
 - Total Base points



1. new	_____
2. single	_____
3. 1	_____
4. yes	_____
5. 3273	sq. ft.
6. 1.5	ft.
Description Area	
7a. double	385.1 sq. ft.
7b. clear	_____ sq. ft.
8a. R = 0	304 l. ft.
8b. R = _____	_____ sq. ft.
8c. R = _____	_____ sq. ft.
9a-1 R = 3	2178 sq. ft.
9a-2 R = _____	_____ sq. ft.
9a-3 R = _____	_____ sq. ft.
9a-4 R = _____	_____ sq. ft.
9b-1 R = 3	170 sq. ft.
9b-2 R = _____	_____ sq. ft.
9b-3 R = _____	_____ sq. ft.
9b-4 R = _____	_____ sq. ft.
10a. R=30	3543 sq. ft.
10b. _____	_____ sq. ft.
10c. _____	_____
11a. R = 6	attic (cond./uncond.)
11b. R = _____	interior (cond./uncond.)
12a. Type: central unit	_____
12b. SEER/EER/COP: 15	_____
12c. Capacity: 66 kBtu/hr	_____
13a. Type: heat pump	_____
13b. HSPF/COP/AFUE: 8.4	_____
13c. Capacity: 66 kBtu/hr	_____
14a. Type: elec	_____
14b. EF: .94	_____
15a. _____	_____
15b. _____	_____
15c. _____	_____
16. PT	_____
17. pass	_____
17a. 31873	17b. 35053

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

PREPARED BY: Evan Beamsley DATE: 12/29/11

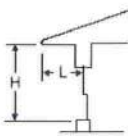
I hereby certify that this building is in compliance with the Florida Energy Code:

OWNER AGENT: _____ DATE: 1/4/12

Review of 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 in accordance with Section 553.908, F.S.

BUILDING OFFICIAL: _____
DATE: _____

¹ Predominant glass type. For actual glass type and areas, see summer and winter glass output on Pages 2 and 4.

GLASS	ORIENTATION	OVERHANG LENGTH OH (FEET)	GLASS AREA (SQ. FT)	SINGLE-PANE SUMMER POINT MULTIPLIER		DUBLE-PANE SUMMER POINT MULTIPLIER		SUMMER OH FACTOR (from 6A-1)	AS-BUILT GLASS SUMMER PTS
				CLEAR	TINT (2)	CLEAR	TINT (2)		
 OVERHANG RATIO = OH LENGTH / OH HEIGHT	N	1.5	75.1				14.84	0.971	1082
	E	1.5	57.7				33.89	0.963	1883
	S	1.5	168.9				28.73	0.931	4518
	W	1.5	83.4				30.93	0.963	2484
		0	0				0		0
		0	0				0		0
		0	0				0		0
		0	0				0		0
		0	0				0		0
		0	0				0		0
		0	0				0		0
		0	0				0		0
		0	0				0		0
		0	0				0		0
		0	0				0		0
		0	0				0		0
		0	0				0		0
		0	0				0		0
		0	0				0		0
		0	0				0		0
		0	0				0		0

GLASS	0.18	COND FLOOR AREA	WEIGHTED GLASS MULTIPLIER	BASE GLASS SUBTOTAL	AS-BUILT GLASS SUBTOTAL
	0.18	3273	18.59	10952	9967

WALL	COMPONENT DESCRIPTION	AREA	BASE SUMMER POINT MULT.	BASE SUM POINTS	COMPONENT DESCRIPTION	AREA	SUMMER POINT MULT. (6A-2 - 6A-6)	AS BUILT SUMMER POINTS
	EXTERIOR	2178	1.5	3267	EXT CMU R3	2178	1.3	2831
	ADJACENT	170	0.6	102	ADJ CMU R3	170	0.8	136
						0		0
						0		0

DOORS	EXTERIOR	52	6.1	317	EXT INSULATED	52	4.1	213
	ADJACENT	18	2.4	43	ADJ INSULATED	18	1.6	29
						0		0

CEILING	UNDER ATTIC OR SINGLE ASSEMBLY	3273	1.73	5662	ATTIC R30	3543	1.73	6129
					RBS/IECC/white roof (3)	0	1.03	0
BASE CEILING AREA EQUALS FLOOR AREA DIRECTLY UNDER CEILING. AS-BUILT CEILING AREA EQUALS ACTUAL CEILING SQUARE FOOTAGE								

FLOOR	SLAB (PERIMETER)	304	-41.2	-12525	SLAB	304	-41.2	-12524.8
	RAISED (AREA)	0	-0.98	0		0	0	0
FOR SLAB-ON-GRADE USE PERIMETER LENGTH AROUND CONDITIONED FLOOR, FOR RAISED FLOORS USE AREA OVER UNCONDITIONED SPACE								

INFILTRATION & INTERNAL GAINS	3273	10.21	33417		3273	10.21	33417
USE TOTAL FLOOR AREA OF CONDITIONED SPACE							

TOTAL COMPONENT BASE SUMMER POINTS	41236	TOTAL COMPONENT AS-BUILT SUMMER POINTS	40198
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COOLING SYSTEM	BASE COOLING SYSTEM MULTIPLIER	TOTAL BASE SUMMER POINTS	BASE COOLING POINTS	TOTAL AS-BUILT SUM. PTS.	AS-BUILT DM (6A-8)	AS-BUILT DSM (6A-20)	AS-BUILT AHU (6A-7)	AS-BUILT CMS (6A-9)	AS-BUILT CCM (6A-19)	AS-BUILT COOLING POINTS
	0.325	41236	13402	40198	1.09	0.95	0.91	0.23	0.95	8277

HOT WATER SYSTEM	NUMBER OF BEDROOMS	BASE HOT WATER MULTIPLIER	BASE HOT WATER POINTS	AS-BUILT HOT WATER SYSTEM DESCRIPTION	NUMBER OF BED-ROOMS	AS-BUILT HWM (6A-23)	AS-BUILT HWCM (6A-23)	AS-BUILT HOT WATER POINTS
	4	2635	10540	elec .94	4	2571	1	10284

(1) H = HORIZONTAL GLASS (SKYLIGHTS)	(2) FOR GLASS WITH KNOW SHGC, SEE SEC. 2.1.1 OF APPENDIX G-C of the FBC, Residential. TINT MULTIPLIERS MAY BE USED FOR GLASS WITH SOLAR SCREENS, FILM, OR TINT	(3) MUST MEET CRITERIA OF APPENDIX G-C4.2.1.5 of the FBC, Residential.
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6A-1 SUMMER OVERHANG FACTORS (SOF) FOR SINGLE-AND DOUBLE-PANE GLASS

SELECT BY OR	OH Ratio	.00-.11	.12-.17	.18-.26	.27-.35	.36-.46	.47-.57	.58-.70	.71-.83	.84-1.18	1.19-1.72	1.73-2.73	2.74 & up
	North	1.00	0.993	0.971	0.930	0.888	0.842	0.803	0.766	0.736	0.681	0.634	0.593
	Northeast	1.00	0.996	0.967	0.907	0.845	0.775	0.717	0.662	0.619	0.545	0.487	0.441
	East	1.00	0.994	0.963	0.898	0.827	0.745	0.675	0.609	0.558	0.470	0.405	0.357
	Southeast	1.00	0.998	0.952	0.864	0.777	0.689	0.623	0.566	0.525	0.459	0.413	0.379
	South	1.00	0.989	0.931	0.835	0.751	0.675	0.620	0.575	0.543	0.493	0.458	0.432
	Southwest	1.00	0.998	0.953	0.866	0.779	0.691	0.623	0.565	0.522	0.453	0.404	0.368
	West	1.00	0.994	0.963	0.899	0.828	0.748	0.681	0.617	0.569	0.485	0.422	0.375
	Northwest	1.00	0.996	0.968	0.913	0.858	0.797	0.748	0.702	0.667	0.605	0.556	0.516
	OH Length	0.0'	1.0'	1.5'	2.0'	3.0'	3.5'	4.5'	5.5'	6.5'	9.5'	14.0'	20.0'

6A-2 WALL SUMMER POINT MULTIPLIERS (SPM)

FRAME					CONCRETE BLOCK (NORMAL WT)				FACE BRICK				LOG		
									R-VALUE	WOOD FR	R-VALUE	BLOCK			
									0-6.9	2.4	0-2.9	1.0			
R-VALUE	EXT	ADJ	EXT	ADJ	R-VALUE	EXT	ADJ	EXT	7-10.9	.6	3-6.9	.6	R-VALUE	EXT	EXT
0-6.9	5.5	2.2	7.6	2.8	0-2.9	2.2	1.1	2.2	11-18.9	.4	7-9.9	.4	0-2.9	1.5	1.0
7-10.9	2.1	.8	3.5	1.3	3-4.9	1.3	.8	.8	19-25.9	.2	10 & UP	.2	3-6.9	1.0	.7
11-12.9	1.7	.7	2.7	1.0	5-6.9	1.0	.7	.5	26 & UP	.1			7 & UP	.8	.6
13-18.9	1.5	.6	2.5	0.9	7-10.9	.7	.5	.3							
19-25.9	.9	.4	2.2	0.8	11-18.9	.4	.4	0							
26 & UP	.6	.2	1.2	0.4	19-25.9	.2	.2								
					26 & UP	.1	.1								

6A-10 WINTER OVERHANG FACTORS (WOF)

SELECT BY OR	OH Ratio	.00-.11	.12-.17	.18-.26	.27-.35	.36-.46	.47-.57	.58-.70	.71-.83	.84-1.18	1.19-1.72	1.73-2.73	2.74 & up
	North	1.00	1.000	1.001	1.003	1.005	1.009	1.011	1.014	1.016	1.021	1.024	1.027
	Northeast	1.00	0.998	1.001	1.008	1.015	1.023	1.029	1.035	1.040	1.049	1.056	1.061
	East	1.00	1.007	1.018	1.040	1.069	1.109	1.150	1.198	1.242	1.338	1.429	1.507
	Southeast	1.00	1.014	1.043	1.111	1.202	1.332	1.472	1.635	1.787	2.113	2.412	2.650
	South	1.00	0.994	1.032	1.142	1.308	1.563	1.845	2.175	2.471	3.042	3.450	3.661
	Southwest	1.00	1.006	1.025	1.070	1.131	1.217	1.308	1.413	1.508	1.708	1.888	2.031
	West	1.00	1.002	1.010	1.027	1.049	1.077	1.102	1.128	1.149	1.187	1.217	1.238
	Northwest	1.00	0.999	1.000	1.004	1.008	1.012	1.016	1.019	1.022	1.028	1.032	1.036
	OH Length	0.0'	1.0'	1.5'	2.0'	3.0'	3.5'	4.5'	5.5'	6.5'	9.5'	14.0'	20.0'

6A-11 WALL WINTER POINT MULTIPLIERS (WPM)

FRAME					CONCRETE BLOCK (NORMAL WT)				FACE BRICK				LOG		
					INTERIOR INSULATION			EXT. INSUL.	R-VALUE	WOOD FR	R-VALUE	BLOCK			
R-VALUE	EXT	ADJ	EXT	ADJ	R-VALUE	EXT	ADJ	EXT	0-6.9	12.6	0-2.9	7.9	R-VALUE	6 INCH	8 INCH
0-6.9	11.1	10.4	15.1	13.1	0-2.9	11.2	6.8	11.2	7-10.9	4.2	3-6.9	5.7	0-2.9	4.5	3.0
7-10.9	4.4	4.4	7.3	6.6	3-4.9	7.3	5.1	5.6	11-18.9	3.5	7-9.9	3.8	3-6.9	2.8	2.2
11-12.9	3.7	3.6	5.7	5.2	5-6.9	5.7	4.2	4.3	19-25.9	2.2	10 & UP	3.0	7 & UP	2.1	1.7
13-18.9	3.4	3.3	5.2	4.9	7-10.9	4.6	3.5	3.3	26 & UP	1.4					
19-25.9	2.2	2.2	4.6	4.4	11-18.9	3.0	2.6	2.2							
26 & Up	1.5	1.5	2.7	2.6	19-25.9	1.9	1.7								
					26 & UP	1.3	1.2								

6A-12 DOOR WINTER POINT MULTIPLIERS (WPM)

DOOR TYPE	EXTERIOR	ADJACENT
WOOD	12.3	11.5
INSULATED	8.4	8.0

6A-13 CEILING WINTER POINT MULTIPLIERS (WPM)

UNDER ATTIC		SINGLE ASSEMBLY		CONCRETE DECK ROOF		
R-VALUE	WPM	R-VALUE	WPM	CEILING TYPE		
19-21.9	2.70	10-10.9	2.87	R-VALUE	EXPOSED	DROPPED
22-25.9	2.45	11-12.9	2.70	10-13.9	3.16	2.91
26-29.9	2.22	13-18.9	2.40	14-20.9	2.31	2.14
30-37.9	2.05	19-25.9	1.86	21 & UP	1.47	1.47
38 & UP	1.81	26-29.9	1.54			
RBS Credit	0.850	30 & UP	1.43			
IRCC Credit	0.912					
White Roof Credit	1.044					

6A-14 FLOOR WINTER POINT MULTIPLIERS (WPM)

SLAB-ON-GRADE EDGE INSULATION		RAISED CONCRETE		RAISED WOOD			
R-VALUE	WPM	R-VALUE	WPM	POST OR PIER CONSTRUCTION	STEM WALL w/UNDER FLOOR INSULATION	ADJACENT	
0-2.9	18.8	0-2.9	9.9	R-VALUE	WPM	WPM	WPM
3-4.9	9.3	3-4.9	5.1	0-6.9	5.77	3.5	10.4
5-6.9	7.6	5-6.9	3.6	7-10.9	2.20	1.6	4.4
7 & UP	7.0	7 & UP	2.9	11-18.9	1.55	1.2	3.6
				19 & UP	0.88	.8	2.2

6A-15 INFILTRATION & INTERNAL GAINS (WPM)

Air Infiltration	2.13
Internal Gains	-2.72
Infiltration/Internal Gains (Combined)	-0.58

6A-16 AIR HANDLER MULTIPLIERS (WPM)

Located in garage	1.00
Located in conditioned area	0.93
Located on exterior of building	1.07
Located in attic	1.10

6A-17 DUCT MULTIPLIERS (DM)

SUPPLY DUCTS IN:	DUCT R-VALUE	RETURN DUCTS IN:				
		Unconditioned space	Attic/ RBS	Attic/ IRCC	Attic/ Cool roof	Conditioned space
Unconditioned Space	4.2	1.093	1.086	1.088	1.089	1.081
	6.0	1.069	1.064	1.065	1.066	1.060
	8.0	1.053	1.049	1.051	1.051	1.046
Attic/Radiant Barrier (RBS)	4.2	1.067	1.059	—	—	1.052
	6.0	1.051	1.045	—	—	1.040
	8.0	1.040	1.036	—	—	1.032
Attic/Interior Radiation Control Coatings (IRCC)	4.2	1.096	—	1.088	—	1.077
	6.0	1.072	—	1.066	—	1.057
	8.0	1.056	—	1.052	—	1.045
Attic/Cool Roof	4.2	1.104	—	—	1.096	1.083
	6.0	1.076	—	—	1.071	1.061
	8.0	1.059	—	—	1.055	1.048
Conditioned Space	4.2	1.008	1.007	1.010	1.008	1.000
	6.0	1.006	1.005	1.007	1.006	1.000
	8.0	1.005	1.004	1.006	1.005	1.000

6A-18 HEATING SYSTEM MULTIPLIERS (HSM) All Climate Zones

SYSTEM TYPE		HEATING SYSTEM MULTIPLIERS (HSM)							
Central Heat Pump Units	HSPF	7.4-7.6	7.7-7.8	7.9-8.3	8.4-8.8	8.9-9.3	9.4-9.8	9.9-10.3	10.4-10.8
	HSM	.46	.44	.43	.41	.38	.36	.34	.33
	COP	2.50-1.69	2.70-2.89	2.90-3.09	3.10-3.29	3.30-3.49	3.50-3.69	3.70-3.89	3.90-4.19
PTHP	HSM	.40	.37	.34	.32	.30	.29	.27	.26
	AFUE	76-77	78	79-82	83-85	86-89	90-92	93-95	96-98
Gas Heating	HSM	.46	.44	.43	.41	.38	.36	.34	.33
Electric Strip					1.0				

6A-19 COOLING CREDIT MULTIPLIERS

SYSTEM TYPE	Cooling credit multipliers (CCM)
Ceiling Fans	.95*
Cross Ventilation	.95*
Whole House Fan	.95*
Multizone	.95
Programmable Thermostat	.95

*Credit may be taken for only one system type concurrently.

6A-20 AIR DISTRIBUTION SYSTEM CREDIT MULTIPLIERS

TYPE CREDIT	Prescriptive requirements	Multiplier
Air-tight Duct Credit ¹	Appx G-C5.2.2.1.1	1.00
Factory-sealed AHU Credit ²	Appx G-C5.2.2.1.2	0.95

¹Duct Sealing Multiplier (DSM) shall be 1.15 (summer) or 1.17 (winter) unless Air-tight Duct Credit is demonstrated by test report.

²Multiply Factory-sealed AHU credit by summer (Table 6A-7) or winter (Table 6A-16) AHU multiplier. Insert total in the "As-Built AHU" box on page 2 or 4.

6A-21 HEATING CREDIT MULTIPLIERS (HCM)

SYSTEM TYPE	HEATING CREDIT MULTIPLIERS (HCM)	
Programmable Thermostat	HCM	.95
Multizone	HCM	.95

6A-22 HOT WATER MULTIPLIERS (HWM)

SYSTEM TYPE									
Electric Resistance	EF	.80-.81	.82-.83	.84-.85	.86-.87	.88-.90	.91-.93	.94-.96	.97 & Up
	HWM	3020	2946	2876	2809	2746	2655	2571	2491
Gas Water Heating	EF	.54	.55	.56	.57	.58	.59	.60	.61
	HWM	3020	2946	2876	2809	2746	2655	2571	2491
	EF	.62-.63	.64-.65	.66-.70	.71-.75	.76-.80	.81-.83	.84-.86	.87 & Up
	HWM	2346	2217	2101	1738	1456	1196	1055	933

6A-23 HOT WATER CREDIT MULTIPLIERS (HWCN)

SYSTEM TYPE		HOT WATER CREDIT MULTIPLIERS (HWCN)			
Heat Recovery Unit	With	Air Conditioner		Heat Pump	
	HWCN	.84		.78	
Add-on Dedicated Heat Pump (without tank)	EF	2.0-2.49	2.5-2.99	3.0-3.49	3.5 & Up
	HWCN	.44	.35	.29	.25
Add-on Solar Water Heater (without tank)	EF	1.0-1.9	2.0-2.9	3.0-3.9	4.0-4.9
	HWCN	.84	.42	.28	.21

NOTE: An HWM must be used in conjunction with all HWCN. See Table 6A-22. EF Means Energy Factor

6A-24 INFILTRATION REDUCTION COMPLIANCE CHECKLIST

COMPONENTS	SECTION	REQUIREMENTS FOR EACH PRACTICE	CHECK
Exterior Windows & Doors	N1106.AB.1.1	Max: 3 cfm/sq. ft. window area; .5cfm/sq. ft. door area.	
Exterior & Adjacent Walls	N1106.AB.1.2.1	Caulk, gasket, weatherstrip or seal between: windows/doors & frames, surrounding wall; foundation & wall sole or sill plate; joints between exterior wall panels at corners; CFM utility penetrations; between wall panels & top/bottom plates; between walls & floor. EXCEPTION: Frame walls where a continuous infiltration barrier is installed that extends from, and is sealed to, the foundation to the top plate.	
Floors	N1106.AB.1.2.2	Penetrations/openings > 1/8" sealed unless backed by truss or joist members. EXCEPTION: Frame floors where a continuous infiltration barrier is installed that is sealed to the perimeter, penetrations and seams.	
Ceilings	N1106.AB.1.2.3	Seal: Between walls & ceilings: penetrations of ceiling plane of top floor; around shafts, chases, soffits, chimneys, cabinets sealed to continuous air barrier; gaps in gyp board & top plate; attic access. EXCEPTION: Frame ceilings where a continuous infiltration barrier is installed that is sealed at the perimeter, at penetrations and seams.	
Recessed Lighting Fixtures	N1106.AB.1.2.4	Type IC rated with no penetrations, sealed; or Type IC or non-IC rated, installed inside a sealed box with 1/2" clearance & 3" from insulation; or Type IC rated with <2.0 cfm from conditioned space, tested.	
Multiple Story Houses	N1106.AB.1.2.5	Air barrier on perimeter of floor cavity between floors.	
Additional Infiltration reqts	N1106.AB.1.3	Exhaust fans vented to outdoors, dampers; combustion space heaters comply with NFPA, have combustion air.	

6A-25 OTHER PRESCRIPTIVE MEASURES (must be met or exceeded by all residences.)

COMPONENTS	SECTION	REQUIREMENTS	CHECK
Water Heaters	N1112.AB.3	Comply with efficiency requirements in Table N1112.AB.3. Switch or clearly marked circuit breaker (electric) or cutoff (gas) must be provided. External or built-in heat trap required for vertical pipe risers.	
Swimming Pools & Spas	N1112.AB.2.3	Spas & heated pools must have covers (except solar heated). Noncommercial pools must have a pump timer. Gas spa & pool heaters must have a minimum thermal efficiency of 78%.	
Shower Heads	N1112.AB.2.4	Water flow must be restricted to no more than 2.5 gallons per minute at 80 psig.	
Air Distribution Systems	N1110.AB	All ducts, fittings, mechanical equipment and plenum chambers shall be mechanically attached, sealed, insulated, and installed in accordance with the criteria of Section N1110. Ducts in unconditioned attics: R-6 minimum insulation.	
HVAC Controls	N1107.AB.2	Separate readily accessible manual or automatic thermostat for each system.	
Insulation	N1104.AB.1 N1102.B.1.1	Ceilings—Min. R-19. Common walls—Frame R-11 or CBS R-3 both sides. Common ceiling & floors R-11.	

ESTIMATED ENERGY PERFORMANCE INDEX* =
The lower the Energy Performance Index, the more efficient the home.

1. New Home or addition <u>new</u> 2. Single family or multiple family <u>single</u> 3. Number of units, (if multi-family) <u>1</u> 4. Number of bedrooms <u>4</u> 5. Is this a worst case? (yes or no) <u>yes</u> 6. Conditioned floor area <u>3273</u> sq. ft. 7. Glass type & area a. U-Factor: <u>double clear</u> <u>385.1</u> sq. ft. (Or single or double Default) _____ sq. ft. b. SHGC: _____ sq. ft. (Or clear or tint Default) _____ sq. ft. 8. Floor types, Insulation level a. Slab-on-grade, edge insulation R=<u>0</u> b. Wood, raised R=_____ c. Concrete, raised R=_____ 9. Wall types, Insulation level Exterior a. Wood frame R=_____ b. Metal frame R=_____ c. Concrete block R=<u>3</u> d. Log R=_____ e. Other _____ R=_____ Adjacent a. Wood frame R=_____ b. Metal frame R=_____ c. Concrete block R=<u>3</u> d. Log R=_____ e. Other _____ R=_____ 10. Ceiling types, Insulation level a. Under attic R=<u>30</u> b. Single assembly R=_____ c. Knee walls/skylight walls R=_____ d. Radiant barrier installed R=_____	11. Ducts, Location & Insulation Level a. Supply ducts: <u>attic</u> R= <u>6</u> b. Return ducts: <u>attic</u> R= <u>6</u> 12. Cooling systems Capacity: <u>66</u> kBtu/hr a. Split system SEER: <u>15</u> b. Single package SEER: _____ c. Ground/water source COP: _____ d. Room unit EER: _____ e. PTAC EER: _____ f. Gas-driven COP: _____ 13. Heating Systems Capacity: <u>66</u> kBtu/hr a. Split system heat pump HSPF: <u>8.4</u> b. Single package heat pump HSPF: _____ c. Electric resistance COP: _____ d. Gas furnace, natural gas AFUE: _____ e. Gas furnace, LPG AFUE: _____ f. Gas-driven heat pump Recov. EFF.: _____ 14. Water heating systems a. Electric resistance EF: <u>.94</u> b. Gas fired, natural gas EF: _____ c. Gas fired, LPG EF: _____ d. Solar System with tank EF: _____ e. Dedicated heat pump with tank EF: _____ f. Heat recovery unit HeatRec% _____ g. Other: _____ 15. HVAC credits claimed (Alternate Point System Method only) a. Ceiling fans _____ b. Cross ventilation _____ c. Whole house fan _____ d. Multizone cooling credit _____ e. Multizone heating credit _____ f. Programmable thermostat <u>X</u> _____
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I certify that this home has complied with the Florida Energy Efficiency Code For Building 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: 1/4/12

Address of New Home: UpStage Gln

City/FL Zip LC, FL 32085

Residential System Sizing Calculation

Summary

Glenn Res.
Lake City, FL

Project Title:
1112063

Class 3 Rating
Registration No. 0
Climate: North

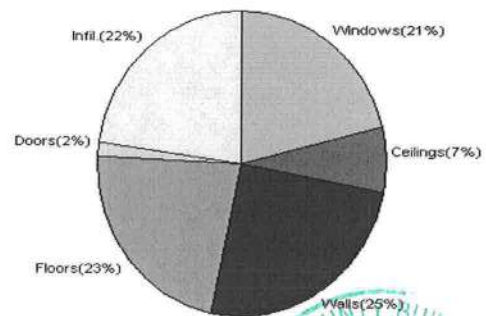
12/29/2011

Location for weather data: Gainesville - Defaults: Latitude(29) Altitude(152 ft.) Temp Range(M)					
Humidity data: Interior RH (50%) Outdoor wet bulb (77F) Humidity difference(54gr.)					
Winter design temperature	33	F	Summer design temperature	92	F
Winter setpoint	70	F	Summer setpoint	75	F
Winter temperature difference	37	F	Summer temperature difference	17	F
Total heating load calculation	58497	Btuh	Total cooling load calculation	47287	Btuh
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	112.8	66000	Sensible (SHR = 0.75)	124.7	49500
Heat Pump + Auxiliary(0.0kW)	112.8	66000	Latent	217.7	16500
			Total (Electric Heat Pump)	139.6	66000

WINTER CALCULATIONS

Winter Heating Load (for 3273 sqft)

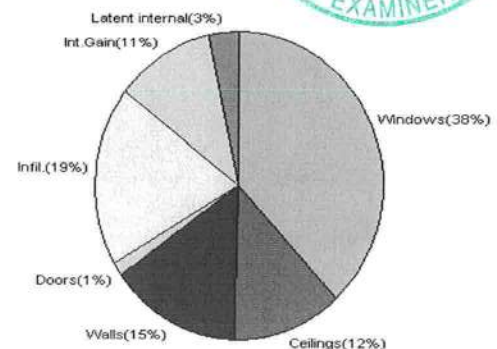
Load component			Load	
Window total	385	sqft	12396	Btuh
Wall total	2348	sqft	14710	Btuh
Door total	70	sqft	906	Btuh
Ceiling total	3543	sqft	4175	Btuh
Floor total	304	sqft	13273	Btuh
Infiltration	322	cfm	13037	Btuh
Duct loss			0	Btuh
Subtotal			58497	Btuh
Ventilation	0	cfm	0	Btuh
TOTAL HEAT LOSS			58497	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 3273 sqft)

Load component			Load	
Window total	385	sqft	17998	Btuh
Wall total	2348	sqft	6869	Btuh
Door total	70	sqft	686	Btuh
Ceiling total	3543	sqft	5867	Btuh
Floor total			0	Btuh
Infiltration	164	cfm	3046	Btuh
Internal gain			5240	Btuh
Duct gain			0	Btuh
Sens. Ventilation	0	cfm	0	Btuh
Total sensible gain			39706	Btuh
Latent gain(ducts)			0	Btuh
Latent gain(infiltration)			5981	Btuh
Latent gain(ventilation)			0	Btuh
Latent gain(internal/occupants/other)			1600	Btuh
Total latent gain			7581	Btuh
TOTAL HEAT GAIN			47287	Btuh



For Florida residences only

EnergyGauge® System Sizing

PREPARED BY: EVAN BENNETT

DATE: 12/29/11

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Glenn Res.

Project Title:
1112063

Class 3 Rating
Registration No. 0
Climate: North

Lake City, FL

Reference City: Gainesville (Defaults) Winter Temperature Difference: 37.0 F
This calculation is for Worst Case. The house has been rotated 315 degrees.

12/29/2011

Component Loads for Whole House

Window	Panes/SHGC/Frame/U	Orientation	Area(sqft)	X	HTM=	Load
1	2, Clear, Metal, 0.87	NW	32.4		32.2	1043 Btuh
2	2, Clear, Metal, 0.87	NW	5.3		32.2	171 Btuh
3	2, Clear, Metal, 0.87	NE	28.0		32.2	901 Btuh
4	2, Clear, Metal, 0.87	NE	39.1		32.2	1259 Btuh
5	2, Clear, Metal, 0.87	NE	8.0		32.2	258 Btuh
6	2, Clear, Metal, 0.87	SE	6.6		32.2	212 Btuh
7	2, Clear, Metal, 0.87	SE	8.0		32.2	258 Btuh
8	2, Clear, Metal, 0.87	SW	16.2		32.2	521 Btuh
9	2, Clear, Metal, 0.87	SW	32.4		32.2	1043 Btuh
10	2, Clear, Metal, 0.87	SW	16.2		32.2	521 Btuh
11	2, Clear, Metal, 0.87	NW	13.3		32.2	428 Btuh
12	2, Clear, Metal, 0.87	SW	57.0		32.2	1835 Btuh
13	2, Clear, Metal, 0.87	SE	32.0		32.2	1030 Btuh
14	2, Clear, Metal, 0.87	SW	39.1		32.2	1259 Btuh
15	2, Clear, Metal, 0.87	SE	11.1		32.2	357 Btuh
16	2, Clear, Metal, 0.87	SW	8.0		32.2	258 Btuh
17	2, Clear, Metal, 0.87	SW	32.4		32.2	1043 Btuh
Window Total			385(sqft)			12396 Btuh
Walls	Type	R-Value	Area	X	HTM=	Load
1	Concrete Blk, - Ext(0.17)	3.0	2178		6.3	13645 Btuh
2	Concrete Blk, - Adj(0.17)	3.0	170		6.3	1065 Btuh
Wall Total			2348			14710 Btuh
Doors	Type		Area	X	HTM=	Load
1	Insulated - Exterior		7		12.9	91 Btuh
2	Insulated - Exterior		14		12.9	181 Btuh
3	Insulated - Exterior		7		12.9	91 Btuh
4	Insulated - Exterior		24		12.9	311 Btuh
5	Insulated - Adjacent		18		12.9	233 Btuh
Door Total			70			907Btuh
Ceilings	Type/Color/Surface	R-Value	Area	X	HTM=	Load
1	Vented Attic/D/Shin)	30.0	3543		1.2	4175 Btuh
Ceiling Total			3543			4175Btuh
Floors	Type	R-Value	Size	X	HTM=	Load
1	Slab On Grade	0	304.0	ft(p)	43.7	13273 Btuh
Floor Total			304			13273 Btuh
Zone Envelope Subtotal:						45460 Btuh
Infiltration	Type	ACH X	Zone Volume	CFM=		Load
	Natural	0.59	32730	321.8		13037 Btuh
Ductload	Unsealed, R6.0, Supply(Attic), Return(Attic) (DLM of 0.00)					0 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Glenn Res.
Lake City, FL

Project Title:
1112063

Class 3 Rating
Registration No. 0
Climate: North

12/29/2011

Zone #1	Sensible Zone Subtotal	58497 Btuh
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WHOLE HOUSE TOTALS

	Subtotal Sensible Ventilation Sensible Total Btuh Loss	58497 Btuh 0 Btuh 58497 Btuh
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Key: Window types (SHGC - Shading coefficient of glass as SHGC numerical value or as clear or tint)
(Frame types - metal, wood or insulated metal)
(U - Window U-Factor or 'DEF' for default)
(HTM - ManualJ Heat Transfer Multiplier)

Key: Floor size (perimeter(p) for slab-on-grade or area for all other floor types)



For Florida residences only

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Glenn Res.

Project Title:
1112063

Class 3 Rating
Registration No. 0
Climate: North

Lake City, FL

Reference City: Gainesville (Defaults) Summer Temperature Difference: 17.0 F
This calculation is for Worst Case. The house has been rotated 315 degrees.

12/29/2011

Component Loads for Whole House

Window	Type*		Overhang		Window Area(sqft)			HTM		Load
	Pn/SHGC/U/InSh/ExSh/IS	Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded	
1	2, Clear, 0.87, None,N,N	NW	1.5ft	6.25f	32.4	0.0	32.4	29	60	1945 Btuh
2	2, Clear, 0.87, None,N,N	NW	1.5ft	2.33	5.3	0.0	5.3	29	60	318 Btuh
3	2, Clear, 0.87, None,N,N	NE	1.5ft	8.33	28.0	0.0	28.0	29	60	1681 Btuh
4	2, Clear, 0.87, None,N,N	NE	1.5ft	7.33	39.1	0.0	39.1	29	60	2347 Btuh
5	2, Clear, 0.87, None,N,N	NE	1.5ft	3ft.	8.0	0.0	8.0	29	60	480 Btuh
6	2, Clear, 0.87, None,N,N	SE	1.5ft	5.16	6.6	2.4	4.2	29	63	332 Btuh
7	2, Clear, 0.87, None,N,N	SE	1.5ft	3ft.	8.0	6.1	1.9	29	63	296 Btuh
8	2, Clear, 0.87, None,N,N	SW	1.5ft	6.25f	16.2	4.7	11.5	29	63	855 Btuh
9	2, Clear, 0.87, None,N,N	SW	1.5ft	6.25f	32.4	9.4	23.0	29	63	1710 Btuh
10	2, Clear, 0.87, None,N,N	SW	1.5ft	6.25f	16.2	4.7	11.5	29	63	855 Btuh
11	2, Clear, 0.87, None,N,N	NW	99ft.	8ft.	13.3	0.0	13.3	29	60	798 Btuh
12	2, Clear, 0.87, None,N,N	SW	13.6	7.33	57.0	57.0	0.0	29	63	1651 Btuh
13	2, Clear, 0.87, None,N,N	SE	99ft.	8ft.	32.0	32.0	0.0	29	63	927 Btuh
14	2, Clear, 0.87, None,N,N	SW	20.5f	7.33	39.1	39.1	0.0	29	63	1132 Btuh
15	2, Clear, 0.87, None,N,N	SE	99ft.	8ft.	11.1	11.1	0.0	29	63	321 Btuh
16	2, Clear, 0.87, None,N,N	SW	1.5ft	4ft.	8.0	2.1	5.9	29	63	430 Btuh
17	2, Clear, 0.87, None,N,N	SW	1.5ft	7.25f	32.4	3.2	29.2	29	63	1918 Btuh
Window Total					385 (sqft)					17998 Btuh
Walls	Type	R-Value/U-Value		Area(sqft)		HTM		Load		
1	Concrete Blk, - Ext	3.0/0.17		2178.0		2.9		6380 Btuh		
2	Concrete Blk, - Adj	3.0/0.17		170.0		2.9		489 Btuh		
Wall Total					2348 (sqft)			6869 Btuh		
Doors	Type			Area (sqft)		HTM		Load		
1	Insulated - Exterior			7.0		9.8		69 Btuh		
2	Insulated - Exterior			14.0		9.8		137 Btuh		
3	Insulated - Exterior			7.0		9.8		69 Btuh		
4	Insulated - Exterior			24.0		9.8		235 Btuh		
5	Insulated - Adjacent			18.0		9.8		176 Btuh		
Door Total					70 (sqft)			686 Btuh		
Ceilings	Type/Color/Surface	R-Value		Area(sqft)		HTM		Load		
1	Vented Attic/DarkShingle	30.0		3543.0		1.7		5867 Btuh		
Ceiling Total					3543 (sqft)			5867 Btuh		
Floors	Type	R-Value		Size		HTM		Load		
1	Slab On Grade	0.0		304 (ft(p))		0.0		0 Btuh		
Floor Total					304.0 (sqft)			0 Btuh		
Zone Envelope Subtotal:								31421 Btuh		
Infiltration	Type	ACH		Volume(cuft)		CFM=		Load		
	SensibleNatural	0.30		32730		163.7		3046 Btuh		
Internal gain	Occupants		Btuh/occupant		Appliance		Load			
	8		X 230 +		3400		5240 Btuh			
Duct load	Unsealed, R6.0, Supply(Attic), Return(Attic)						DGM = 0.00		0.0 Btuh	
Sensible Zone Load								39706 Btuh		

Manual J Summer Calculations

Residential Load - Component Details (continued)

Glenn Res.
Lake City, FL

Project Title:
1112063

Class 3 Rating
Registration No. 0
Climate: North

12/29/2011

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	39706 Btuh
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	39706 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	39706 Btuh
	Latent infiltration gain (for 54 gr. humidity difference)	5981 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain (8 people @ 200 Btuh per person)	1600 Btuh
	Latent other gain	0 Btuh
	Latent total gain	7581 Btuh
	TOTAL GAIN	47287 Btuh

*Key: Window types (Pn - Number of panes of glass)
(SHGC - Shading coefficient of glass as SHGC numerical value or as clear or tint)
(U - Window U-Factor or 'DEF' for default)
(InSh - Interior shading device: none(N), Blinds(B), Draperies(D) or Roller Shades(R))
(ExSh - Exterior shading device: none(N) or numerical value)
(BS - Insect screen: none(N), Full(F) or Half(H))
(Ornt - compass orientation)



For Florida residences only