

Residential System Sizing Calculation

Summary

Tommy & Arica Bulock

Project Title:
Bulock Residence

Code Only
Professional Version
Climate: North

Lake City, FL 32024-

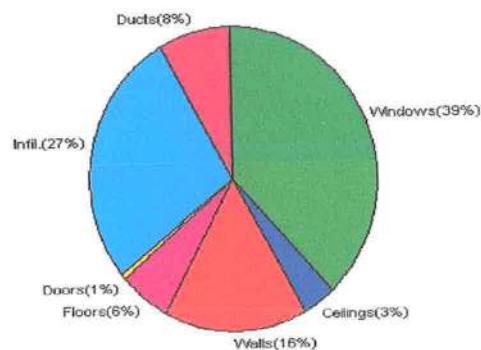
11/7/2011

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	39486 Btuh	Total cooling load calculation	42143 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	111.4 44000	Sensible (SHR = 0.75)	104.1 33000
Heat Pump + Auxiliary(0.0kW)	111.4 44000	Latent	105.5 11000
		Total (Electric Heat Pump)	104.4 44000

WINTER CALCULATIONS

Winter Heating Load (for 2325 sqft)

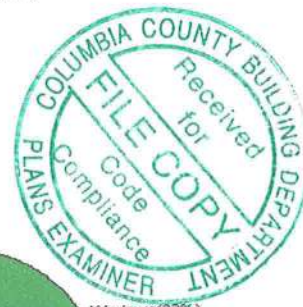
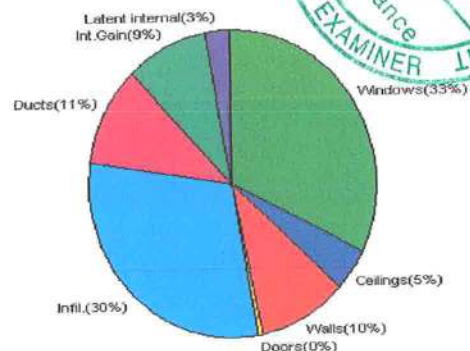
Load component		Load	
Window total	473 sqft	15236	Btuh
Wall total	1953 sqft	6413	Btuh
Door total	20 sqft	259	Btuh
Ceiling total	1164 sqft	1372	Btuh
Floor total	141 sqft	2306	Btuh
Infiltration	263 cfm	10673	Btuh
Duct loss		3227	Btuh
Subtotal		39486	Btuh
Ventilation	0 cfm	0	Btuh
TOTAL HEAT LOSS		39486	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 2325 sqft)

Load component		Load	
Window total	473 sqft	13709	Btuh
Wall total	1953 sqft	4073	Btuh
Door total	20 sqft	196	Btuh
Ceiling total	1164 sqft	1928	Btuh
Floor total		0	Btuh
Infiltration	231 cfm	4291	Btuh
Internal gain		3780	Btuh
Duct gain		3737	Btuh
Sens. Ventilation	0 cfm	0	Btuh
Total sensible gain		31713	Btuh
Latent gain(ducts)		804	Btuh
Latent gain(infiltration)		8425	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		1200	Btuh
Total latent gain		10430	Btuh
TOTAL HEAT GAIN		42143	Btuh



Version 8
For Florida residences only

EnergyGauge® System Sizing

PREPARED BY:

DATE: 11/7/11

EnergyGauge® FLRCPB v4.5.2

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Tommy & Arica Bulock

Project Title:
Bulock Residence

Code Only
Professional Version
Climate: North

Lake City, FL 32024-

Reference City: Gainesville (Defaults) Winter Temperature Difference: 37.0 F

11/7/2011

Component Loads for Whole House

Window	Panes/SHGC/Frame/U	Orientation	Area(sqft)	X	HTM=	Load
1	2, Clear, Metal, 0.87	E	54.0		32.2	1738 Btuh
2	2, Clear, Metal, 0.87	E	12.0		32.2	386 Btuh
3	2, Clear, Metal, 0.87	NE	12.0		32.2	386 Btuh
4	2, Clear, Metal, 0.87	SE	12.0		32.2	386 Btuh
5	2, Clear, Metal, 0.87	E	40.0		32.2	1288 Btuh
6	2, Clear, Metal, 0.87	S	20.0		32.2	644 Btuh
7	2, Clear, Metal, 0.87	S	36.0		32.2	1159 Btuh
8	2, Clear, Metal, 0.87	W	36.0		32.2	1159 Btuh
9	2, Clear, Metal, 0.87	W	18.0		32.2	579 Btuh
10	2, Clear, Metal, 0.87	W	13.3		32.2	429 Btuh
11	2, Clear, Metal, 0.87	N	36.0		32.2	1159 Btuh
12	2, Clear, Metal, 0.87	E	80.0		32.2	2575 Btuh
13	2, Clear, Metal, 0.87	W	24.0		32.2	773 Btuh
14	2, Clear, Metal, 0.87	W	48.0		32.2	1545 Btuh
15	2, Clear, Metal, 0.87	N	32.0		32.2	1030 Btuh
Window Total			473(sqft)			15236 Btuh
Walls		R-Value	Area	X	HTM=	Load
1	Type		969		3.3	3181 Btuh
2	Frame - Wood - Ext(0.09)	13.0	984		3.3	3232 Btuh
Wall Total			1953			6413 Btuh
Doors			Area	X	HTM=	Load
1	Type		20		12.9	259 Btuh
Door Total			20			259 Btuh
Ceilings		R-Value	Area	X	HTM=	Load
1	Type/Color/Surface	30.0	1164		1.2	1372 Btuh
Vented Attic/D/Shin			1164			1372 Btuh
Ceiling Total						
Floors		R-Value	Size	X	HTM=	Load
1	Type	5	141.0 ft(p)		16.4	2306 Btuh
Slab On Grade			141			2306 Btuh
Floor Total						
Envelope Subtotal:						25586 Btuh
Infiltration		ACH X Volume(cuft)	walls(sqft)	CFM=		10673 Btuh
Natural		0.80	19761	1953	263.5	
(DLM of Mixed ducts)						3227 Btuh
Ductload						
Sensible Subtotal All Zones						39486 Btuh
All Zones						

Manual J Winter Calculations

Residential Load - Component Details (continued)

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11/7/2011

WHOLE HOUSE TOTALS

	Subtotal Sensible	39486 Btuh
	Ventilation Sensible	0 Btuh
	Total Btuh Loss	39486 Btuh

EQUIPMENT

1. Electric Heat Pump	#	22000 Btuh
2. Electric Heat Pump	#	22000 Btuh

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)



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System Sizing Calculations - Winter

Residential Load - Room by Room Component Details

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Climate: North

Lake City, FL 32024-

Reference City: Gainesville (Defaults) Winter Temperature Difference: 37.0 F

11/7/2011

Component Loads for Zone #1: 1st Floor

Window	Panes/SHGC/Frame/U	Orientation	Area(sqft)	X	HTM=	Load
1	2, Clear, Metal, 0.87	E	54.0		32.2	1738 Btuh
2	2, Clear, Metal, 0.87	E	12.0		32.2	386 Btuh
3	2, Clear, Metal, 0.87	NE	12.0		32.2	386 Btuh
4	2, Clear, Metal, 0.87	SE	12.0		32.2	386 Btuh
5	2, Clear, Metal, 0.87	E	40.0		32.2	1288 Btuh
6	2, Clear, Metal, 0.87	S	20.0		32.2	644 Btuh
7	2, Clear, Metal, 0.87	S	36.0		32.2	1159 Btuh
8	2, Clear, Metal, 0.87	W	36.0		32.2	1159 Btuh
9	2, Clear, Metal, 0.87	W	18.0		32.2	579 Btuh
10	2, Clear, Metal, 0.87	W	13.3		32.2	429 Btuh
11	2, Clear, Metal, 0.87	N	36.0		32.2	1159 Btuh
Window Total			289(sqft)			9314 Btuh
Walls 1	Type	R-Value	Area	X	HTM=	Load
	Frame - Wood - Ext(0.09)	13.0	969		3.3	3181 Btuh
Wall Total			969			3181 Btuh
Doors 1	Type		Area	X	HTM=	Load
	Insulated - Exterior		20		12.9	259 Btuh
Door Total			20			259 Btuh
Floors 1	Type	R-Value	Size	X	HTM=	Load
	Slab On Grade	5	141.0 ft(p)		16.4	2306 Btuh
Floor Total			141			2306 Btuh
Zone Envelope Subtotal:						15060 Btuh
Infiltration	Type	ACH X Volume(cuft)	walls(sqft)		CFM=	
	Natural	0.80	10449	969	130.7	5294 Btuh
Ductload	Pro. leak free, Supply(R6.0-Cond.), Return(R6.0-Cond) (DLM of 0.000)					0 Btuh
Zone #1	Sensible Zone Subtotal					20354 Btuh

Component Loads for Zone #2: 2nd Floor

Window	Panes/SHGC/Frame/U	Orientation	Area(sqft)	X	HTM=	Load
12	2, Clear, Metal, 0.87	E	80.0		32.2	2575 Btuh
13	2, Clear, Metal, 0.87	W	24.0		32.2	773 Btuh
14	2, Clear, Metal, 0.87	W	48.0		32.2	1545 Btuh
15	2, Clear, Metal, 0.87	N	32.0		32.2	1030 Btuh
Window Total			184(sqft)			5923 Btuh

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Residential Load - Component Details (continued)

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Walls 2	Type Frame - Wood - Ext(0.09) Wall Total	R-Value 13.0	Area X 984 984	HTM= 3.3	Load 3232 Btuh 3232 Btuh
Ceilings 1	Type/Color/Surface Vented Attic/D/Shin Ceiling Total	R-Value 30.0	Area X 1164 1164	HTM= 1.2	Load 1372 Btuh 1372Btuh
	Zone Envelope Subtotal:				10526 Btuh
Infiltration	Type Natural	ACH X Volume(cuft) walls(sqft) 0.80 9312 984	CFM= 132.8		5378 Btuh
Ductload	Pro. leak free, Supply(R6.0-Cond.), Return(R6.0-Cond) (DLM of 0.203)				3227 Btuh
Zone #2	Sensible Zone Subtotal				19131 Btuh

SYSTEM GROUPS (BLOCK LOADS)

Heating Loads For System(s):1 Serving Zones: 1	Block load	20354 Btuh
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Heating Loads For System(s):2 Serving Zones: 2	Block load	19131 Btuh
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WHOLE HOUSE TOTALS

	Subtotal Sensible Ventilation Sensible Total Btuh Loss	39486 Btuh 0 Btuh 39486 Btuh
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Manual J Winter Calculations

Residential Load - Component Details (continued)

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Lake City, FL 32024-

11/7/2011

EQUIPMENT

1. Electric Heat Pump	#	22000 Btuh
2. Electric Heat Pump	#	22000 Btuh

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)



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System Sizing Calculations - Summer

Residential Load - Whole House Component Details

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Professional Version
Climate: North

Lake City, FL 32024-

Reference City: Gainesville (Defaults)

Summer Temperature Difference: 17.0 F

11/7/2011

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,0.00,N	E	1.5ft.	11ft.	54.0	0.0	54.0	29	29	1564	Btuh	
2	2, Clear, 0.87, None,0.00,N	E	1.5ft.	2ft.	12.0	10.5	1.5	29	29	348	Btuh	
3	2, Clear, 0.87, None,0.00,N	NE	1.5ft.	2ft.	12.0	0.0	12.0	29	29	348	Btuh	
4	2, Clear, 0.87, None,0.00,N	SE	1.5ft.	2ft.	12.0	12.0	0.0	29	29	348	Btuh	
5	2, Clear, 0.87, None,0.00,N	E	1.5ft.	11ft.	40.0	0.0	40.0	29	29	1158	Btuh	
6	2, Clear, 0.87, None,0.00,N	S	1.5ft.	11ft.	20.0	15.5	4.5	29	29	579	Btuh	
7	2, Clear, 0.87, None,0.00,N	S	1.5ft.	11ft.	36.0	27.1	8.9	29	29	1043	Btuh	
8	2, Clear, 0.87, None,0.00,N	W	1.5ft.	11ft.	36.0	0.0	36.0	29	29	1043	Btuh	
9	2, Clear, 0.87, None,0.00,N	W	1.5ft.	11ft.	18.0	0.0	18.0	29	29	521	Btuh	
10	2, Clear, 0.87, None,0.00,N	W	1.5ft.	1ft.	13.3	13.3	0.0	29	29	386	Btuh	
11	2, Clear, 0.87, None,0.00,N	N	1.5ft.	11ft.	36.0	0.0	36.0	29	29	1043	Btuh	
12	2, Clear, 0.87, None,0.00,N	E	1.5ft.	1ft.	80.0	80.0	0.0	29	29	2317	Btuh	
13	2, Clear, 0.87, None,0.00,N	W	1.5ft.	1ft.	24.0	24.0	0.0	29	29	695	Btuh	
14	2, Clear, 0.87, None,0.00,N	W	1.5ft.	1ft.	48.0	48.0	0.0	29	29	1390	Btuh	
15	2, Clear, 0.87, None,0.00,N	N	1.5ft.	1ft.	32.0	0.0	32.0	29	29	927	Btuh	
Window Total					473 (sqft)					13709 Btuh		
Walls	Type	R-Value/U-Value		Area(sqft)			HTM		Load			
1	Frame - Wood - Ext	13.0/0.09		968.7			2.1		2021 Btuh			
2	Frame - Wood - Ext	13.0/0.09		984.0			2.1		2052 Btuh			
Wall Total					1953 (sqft)					4073 Btuh		
Doors	Type				Area (sqft)			HTM		Load		
1	Insulated - Exterior				20.0			9.8		196 Btuh		
Door Total					20 (sqft)					196 Btuh		
Ceilings	Type/Color/Surface	R-Value		Area(sqft)			HTM		Load			
1	Vented Attic/DarkShingle	30.0		1164.0			1.7		1928 Btuh			
Ceiling Total					1164 (sqft)					1928 Btuh		
Floors	Type	R-Value		Size			HTM		Load			
1	Slab On Grade	5.0		141 (ft(p))			0.0		0 Btuh			
Floor Total					141.0 (sqft)					0 Btuh		
Envelope Subtotal:										19905 Btuh		
Infiltration	Type	ACH		Volume(cuft)			wall area(sqft)		CFM=		Load	
	SensibleNatural	0.70		19761			1953		263.5		4291 Btuh	
Internal gain	Occupants			Btuh/occupant			Appliance		Load			
	6			X 230			+		2400		3780 Btuh	
Sensible Envelope Load:										27976 Btuh		
Duct load	(DGMS vary for Mixed ducts)										3737 Btuh	
Sensible Load All Zones										31713 Btuh		

Manual J Summer Calculations

Residential Load - Component Details (continued)

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Lake City, FL 32024-

11/7/2011

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	27976 Btuh
	Sensible Duct Load	3737 Btuh
	Total Sensible Zone Loads	31713 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	31713 Btuh
	Latent infiltration gain (for 54 gr. humidity difference)	8425 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	804 Btuh
	Latent occupant gain (6 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	10430 Btuh
	TOTAL GAIN	42143 Btuh

EQUIPMENT

1. Central Unit	#	22000 Btuh
2. Central Unit	#	22000 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)



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System Sizing Calculations - Summer

Residential Load - Room by Room Component Details

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Professional Version
Climate: North

Lake City, FL 32024-

Reference City: Gainesville (Defaults)

Summer Temperature Difference: 17.0 F

11/7/2011

Component Loads for Zone #1: 1st Floor

Window	Type*	Ornt	Overhang		Window Area(sqft)			HTM		Load	
	Pn/SHGC/U/InSh/ExSh/IS		Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded		
1	2, Clear, 0.87, None,0.00,N	E	1.5ft.	11ft.	54.0	0.0	54.0	29	29	1564	Btuh
2	2, Clear, 0.87, None,0.00,N	E	1.5ft.	2ft.	12.0	10.5	1.5	29	29	348	Btuh
3	2, Clear, 0.87, None,0.00,N	NE	1.5ft.	2ft.	12.0	0.0	12.0	29	29	348	Btuh
4	2, Clear, 0.87, None,0.00,N	SE	1.5ft.	2ft.	12.0	12.0	0.0	29	29	348	Btuh
5	2, Clear, 0.87, None,0.00,N	E	1.5ft.	11ft.	40.0	0.0	40.0	29	29	1158	Btuh
6	2, Clear, 0.87, None,0.00,N	S	1.5ft.	11ft.	20.0	15.5	4.5	29	29	579	Btuh
7	2, Clear, 0.87, None,0.00,N	S	1.5ft.	11ft.	36.0	27.1	8.9	29	29	1043	Btuh
8	2, Clear, 0.87, None,0.00,N	W	1.5ft.	11ft.	36.0	0.0	36.0	29	29	1043	Btuh
9	2, Clear, 0.87, None,0.00,N	W	1.5ft.	11ft.	18.0	0.0	18.0	29	29	521	Btuh
10	2, Clear, 0.87, None,0.00,N	W	1.5ft.	1ft.	13.3	13.3	0.0	29	29	386	Btuh
11	2, Clear, 0.87, None,0.00,N	N	1.5ft.	11ft.	36.0	0.0	36.0	29	29	1043	Btuh
Window Total					289 (sqft)					8380 Btuh	
Walls	Type	R-Value/U-Value			Area(sqft)			HTM		Load	
1	Frame - Wood - Ext	13.0/0.09			968.7			2.1		2021 Btuh	
Wall Total					969 (sqft)					2021 Btuh	
Doors	Type				Area (sqft)			HTM		Load	
1	Insulated - Exterior				20.0			9.8		196 Btuh	
Door Total					20 (sqft)					196 Btuh	
Floors	Type	R-Value			Size			HTM		Load	
1	Slab On Grade	5.0			141 (ft(p))			0.0		0 Btuh	
Floor Total					141.0 (sqft)					0 Btuh	
Zone Envelope Subtotal:										10596 Btuh	
Infiltration	Type	ACH			Volume(cuft) wall area(sqft)			CFM=		Load	
	SensibleNatural	0.70			10449 969			114.4		2129 Btuh	
Internal gain		Occupants			Btuh/occupant			Appliance		Load	
		2			X 230 +			1200		1660 Btuh	
Sensible Envelope Load:										14385 Btuh	
Duct load	Prop. leak free, Supply(R6.0-Cond.), Return(R6.0-Cond)							(DGM of 0.000)		0 Btuh	
Sensible Zone Load										14385 Btuh	

Component Loads for Zone #2: 2nd Floor

Window	Type*		Overhang		Window Area(sqft)			HTM		Load	
	Pn/SHGC/U/InSh/ExSh/IS	Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded		
12	2, Clear, 0.87, None,0.00,N	E	1.5ft.	1ft.	80.0	80.0	0.0	29	29	2317	Btuh
13	2, Clear, 0.87, None,0.00,N	W	1.5ft.	1ft.	24.0	24.0	0.0	29	29	695	Btuh
14	2, Clear, 0.87, None,0.00,N	W	1.5ft.	1ft.	48.0	48.0	0.0	29	29	1390	Btuh
15	2, Clear, 0.87, None,0.00,N	N	1.5ft.	1ft.	32.0	0.0	32.0	29	29	927	Btuh
Window Total					184 (sqft)					5329 Btuh	
Walls	Type	R-Value/U-Value		Area(sqft)			HTM		Load		
	2	Frame - Wood - Ext	13.0/0.09		984.0			2.1		2052 Btuh	
	Wall Total					984 (sqft)			2052 Btuh		

Manual J Summer Calculations

Residential Load - Component Details (continued)

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Lake City, FL 32024-

11/7/2011

Ceilings	Type/Color/Surface	R-Value	Area(sqft)	HTM	Load
1	Vented Attic/DarkShingle	30.0	1164.0	1.7	1928 Btuh
	Ceiling Total		1164 (sqft)		1928 Btuh
	Zone Envelope Subtotal:				9309 Btuh
Infiltration	Type	ACH	Volume(cuft)	wall area(sqft)	CFM=
	SensibleNatural	0.70	9312	984	116.2
Internal gain	Occupants		Btuh/occupant	Appliance	Load
	4	X	230	+	1200
	Sensible Envelope Load:				13591 Btuh
Duct load	Prop. leak free, Supply(R6.0-Cond.), Return(R6.0-Cond) (DGM of 0.275)				3737 Btuh
	Sensible Zone Load				17328 Btuh

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Residential Load - Component Details (continued)

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SYSTEM GROUPS (BLOCK LOADS)

Cooling Loads For System(s): 1 Serving Zones: 1	Sensible Envelope Load	14385 Btuh
	Window Excursion Not selected.	
	Sensible Duct Load (duct gain multiplier of 0.000)	0 Btuh
	Sensible ventilation	0 Btuh
	Zone Sensible gain	14385 Btuh
	Latent infiltration/ventilation gain	4180 Btuh
	Latent occupant gain	400 Btuh
	Latent duct gain	0 Btuh
	Latent other gain	0 Btuh
	Total block load	18964 Btuh

Cooling Loads For System(s): 2 Serving Zones: 2	Sensible Envelope Load	13591 Btuh
	Window Excursion Not selected.	
	Sensible Duct Load (duct gain multiplier of 0.275)	3737 Btuh
	Sensible ventilation	0 Btuh
	Zone Sensible gain	17328 Btuh
	Latent infiltration/ventilation gain	4246 Btuh
	Latent occupant gain	800 Btuh
	Latent duct gain	0 Btuh
	Latent other gain	0 Btuh
	Total block load	22374 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Tommy & Arica Bulock
Lake City, FL 32024-

Project Title:
Bulock Residence

Code Only
Professional Version
Climate: North

11/7/2011

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	27976 Btuh
	Sensible Duct Load	3737 Btuh
	Total Sensible Zone Loads	31713 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	31713 Btuh
	Latent infiltration gain (for 54 gr. humidity difference)	8425 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	804 Btuh
	Latent occupant gain (6 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	10430 Btuh
	TOTAL GAIN	42143 Btuh

EQUIPMENT

1. Central Unit	#	22000 Btuh
2. Central Unit	#	22000 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)



Version 8
For Florida residences only

Residential Window Diversity

MidSummer

Tommy & Arica Bulock

Lake City, FL 32024-

Project Title:
Bulock Residence

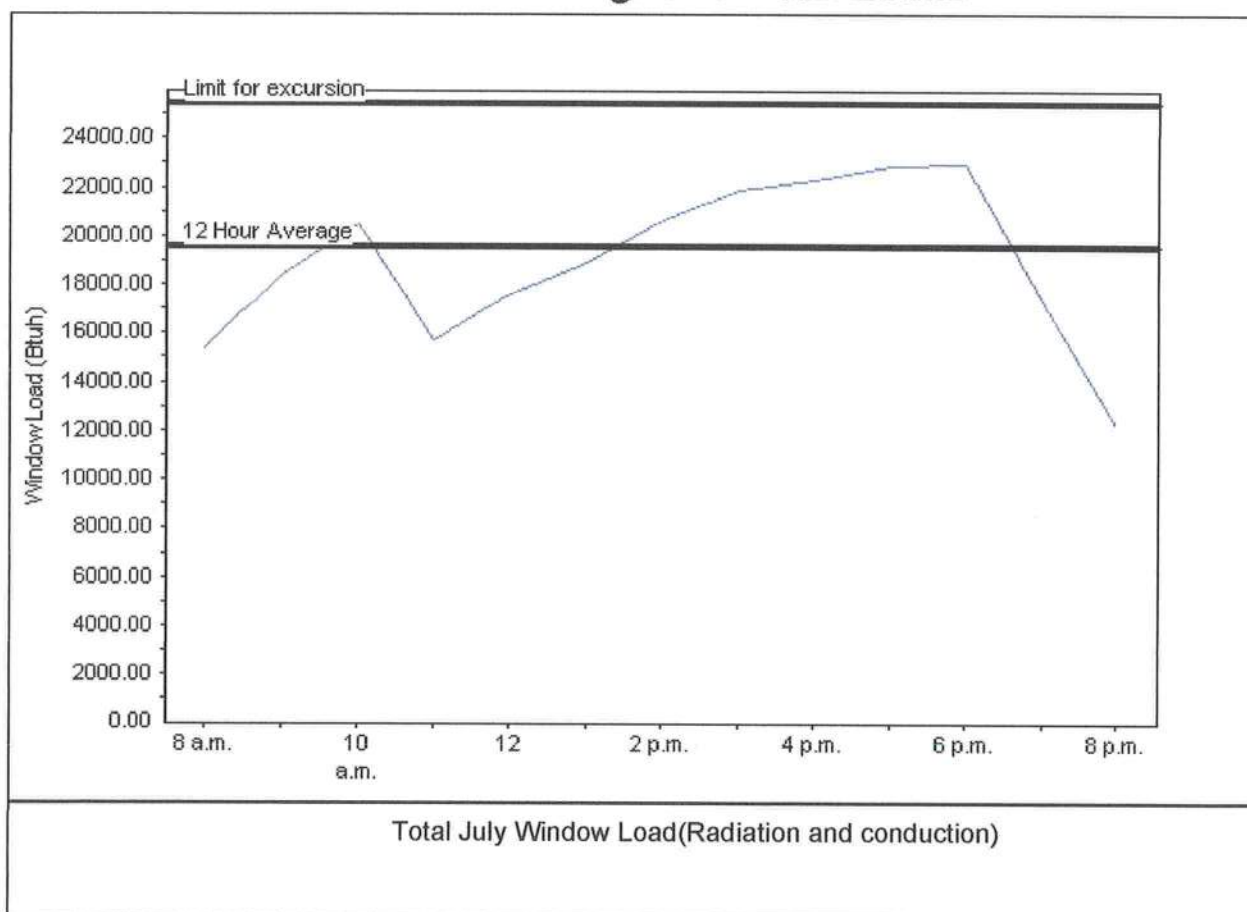
Code Only
Professional Version
Climate: North

11/7/2011

Weather data for: Gainesville - Defaults

Summer design temperature	92 F	Average window load for July	19534 Btu
Summer setpoint	75 F	Peak window load for July	22919 Btu
Summer temperature difference	17 F	Excursion limit(130% of Ave.)	25394 Btu
Latitude	29 North	Window excursion (July)	None

WINDOW Average and Peak Loads



The midsummer window load for this house does not exceed the window load excursion limit.
This house has adequate midsummer window diversity.

EnergyGauge® System Sizing for Florida residences only

PREPARED BY: _____

DATE: _____

EnergyGauge® FLRCPB v4.5.2



FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Community Affairs Residential Performance Method A

Project Name: Bullock Residence
 Street:
 City, State, Zip: Lake City, FL, 32024
 Owner: Tommy & Arica Bullock
 Design Location: FL, Gainesville

Builder Name: N/A
 Permit Office: Columbia County
 Permit Number:
 Jurisdiction: 221000

1. New construction or existing	New (From Plans)	
2. Single family or multiple family	Single-family	
3. Number of units, if multiple family	1	
4. Number of Bedrooms	3	
5. Is this a worst case?	No	
6. Conditioned floor area (ft ²)	2325	
7. Windows (473.3 sqft.)	Description	Area
a. U-Factor:	Dbl, U=0.30	473.33 ft ²
SHGC:	SHGC=0.50	
b. U-Factor:	N/A	ft ²
SHGC:		
c. U-Factor:	N/A	ft ²
SHGC:		
d. U-Factor:	N/A	ft ²
SHGC:		
e. U-Factor:	N/A	ft ²
SHGC:		
8. Floor Types (1161.0 sqft.)	Insulation	Area
a. Slab-On-Grade Edge Insulation	R=5.0	1161.00 ft ²
b. N/A	R=	ft ²
c. N/A	R=	ft ²

9. Wall Types (2437.0 sqft.)	Insulation	Area
a. Frame - Wood, Exterior	R=13.0	2437.00 ft ²
b. N/A	R=	ft ²
c. N/A	R=	ft ²
d. N/A	R=	ft ²
10. Ceiling Types (1164.0 sqft.)	Insulation	Area
a. Under Attic (Vented)	R=30.0	1164.00 ft ²
b. N/A	R=	ft ²
c. N/A	R=	ft ²
11. Ducts (combined)		
a. Sup: Attic Ret: Attic AH: Interior Sup. R= 6, 291 ft ²		
12. Cooling systems (combined)		
a. Central Unit	Cap: 44.0 kBtu/hr	
	SEER: 15	
13. Heating systems (combined)		
a. Electric Heat Pump	Cap: 44.0 kBtu/hr	
	HSPF: 7.7	
14. Hot water systems		
a. Electric	Cap: 80 gallons	
	EF: 0.92	
b. Conservation features		
None		
15. Credits		None

Glass/Floor Area: 0.204

Total As-Built Modified Loads: 42.59

Total Baseline Loads: 50.60

PASS

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

PREPARED BY: [Signature]
 DATE: 11/7/11

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: _____



PROJECT

Title: Bullock Residence	Bedrooms: 3	Address Type:
Building Type: FLAsBuilt	ConditionedArea: 2325	Lot #
Owner: Tommy & Arica Bullock	Total Stories: 2	Block/SubDivision:
# of Units: 1	Worst Case: No	PlatBook:
BuilderName: N/A	Rotate Angle: 0	Street:
Permit Office: ColumbiaCounty	CrossVentilation:	County: Columbia
Jurisdiction:	Whole House Fan:	City, State, Zip: Lake City , FL , 32024-
Family Type: Single-family		
New/Existing: New (From Plans)		
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	75	70	1305.5	51	Medium

FLOORS

✓	#	Floor Type	Perimeter	R-Value	Area	Tile	Wood	Carpet
✓	1	Slab-On-Grade Edge Insulation	141 ft	5	1161 ft²	0	0	1

ROOF

✓	#	Type	Materials	Roof Area	Gable Area	Roof Color	Solar Absor.	Tested	Deck Insul.	Pitch
✓	1	Hip	Composition shingles	1302 ft²	0 ft²	Dark	0.96	No	0	26.6 deg

ATTIC

✓	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
✓	1	Full attic	Vented	303	1164 ft²	N	N

CEILING

✓	#	Ceiling Type	R-Value	Area	Framing Frac	Truss Type
✓	1	Under Attic (Vented)	30	1164 ft²	0.11	Wood

WALLS

✓	#	Ornt	Adjacent To	Wall Type	Cavity R-Value	Area	Sheathing R-Value	Framing Fraction	Solar Absor.
✓	1	W	Exterior	Frame - Wood	13	1269 ft²		0.23	0.75
✓	2	W	Exterior	Frame - Wood	13	1168 ft²		0.23	0.75

DOORS

✓	#	Ornt	Door Type	Storms	U-Value	Area
✓	1	W	Insulated	None	0.460000	20 ft²

WINDOWS

Orientation shown is the entered, asBuilt orientation.

✓	#	Ornt	Frame	Panes	NFRC	U-Factor	SHGC	Storms	Area	Overhang		Int Shade	Screening
										Depth	Separation		
_____	1	W	Metal	Double (Clear)	Yes	0.3	0.5	N	54 ft²	11 ft 0 in	1.5 ft 0 in	HERS 2006	None
_____	2	W	Metal	Double (Clear)	Yes	0.3	0.5	N	12 ft²	2 ft 0 in	1.5 ft 0 in	HERS 2006	None
_____	3	W	Metal	Double (Clear)	Yes	0.3	0.5	N	12 ft²	2 ft 0 in	1.5 ft 0 in	HERS 2006	None
_____	4	W	Metal	Double (Clear)	Yes	0.3	0.5	N	12 ft²	2 ft 0 in	1.5 ft 0 in	HERS 2006	None
_____	5	W	Metal	Double (Clear)	Yes	0.3	0.5	N	40 ft²	11 ft 0 in	1.5 ft 0 in	HERS 2006	None
_____	6	W	Metal	Double (Clear)	Yes	0.3	0.5	N	20 ft²	11 ft 0 in	1.5 ft 0 in	HERS 2006	None
_____	7	W	Metal	Double (Clear)	Yes	0.3	0.5	N	36 ft²	11 ft 0 in	1.5 ft 0 in	HERS 2006	None
_____	8	W	Metal	Double (Clear)	Yes	0.3	0.5	N	36 ft²	11 ft 0 in	1.5 ft 0 in	HERS 2006	None
_____	9	W	Metal	Double (Clear)	Yes	0.3	0.5	N	18 ft²	11 ft 0 in	1.5 ft 0 in	HERS 2006	None
_____	10	W	Metal	Double (Clear)	Yes	0.3	0.5	N	13.33 ft²	1 ft 0 in	1.5 ft 0 in	HERS 2006	None
_____	11	W	Metal	Double (Clear)	Yes	0.3	0.5	N	36 ft²	11 ft 0 in	1.5 ft 0 in	HERS 2006	None
_____	12	W	Metal	Double (Clear)	Yes	0.3	0.5	N	80 ft²	1 ft 0 in	1.5 ft 0 in	HERS 2006	None
_____	13	W	Metal	Double (Clear)	Yes	0.3	0.5	N	24 ft²	1 ft 0 in	1.5 ft 0 in	HERS 2006	None
_____	14	W	Metal	Double (Clear)	Yes	0.3	0.5	N	48 ft²	1 ft 0 in	1.5 ft 0 in	HERS 2006	None
_____	15	W	Metal	Double (Clear)	Yes	0.3	0.5	N	32 ft²	1 ft 0 in	1.5 ft 0 in	HERS 2006	None

INFILTRATION & VENTING

✓	Method	SLA	CFM 50	ACH 50	ELA	EqlA	---- Forced Ventilation ----		Run Time	Fan
							Supply CFM	Exhaust CFM	Fraction	Watts
_____	Default	0.00036	2195	6.67	120.5	226.7	0 cfm	0 cfm	0	0

COOLING SYSTEM

✓	#	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Ducts
_____	1	Central Unit	None	SEER: 15	22 kBtu/hr	cfm	0.75	sys#1
_____	2	Central Unit	None	SEER: 15	22 kBtu/hr	cfm	0.75	sys#2

HEATING SYSTEM

✓	#	System Type	Subtype	Efficiency	Capacity	Ducts
_____	1	Electric Heat Pump	None	HSPF: 7.7	22 kBtu/hr	sys#1
_____	2	Electric Heat Pump	None	HSPF: 7.7	22 kBtu/hr	sys#2

HOT WATER SYSTEM

✓	#	System Type	EF	Cap	Use	SetPnt	Conservation
_____	1	Electric	0.92	80 gal	60 gal	120 deg	None

SOLAR HOT WATER SYSTEM

✓	FSEC Cert #	CompanyName	System Model #	Collector Model #	Collector Area	Storage Volume	FEF
_____	None	None			ft²		

DUCTS

✓	#	Location	Supply R-Value	Area	Location	Return Area	LeakageType	Air Handler	CFM 25	Percent Leakage	QN	RLF
_____	1	Interior	6	290.25 f	Interior	58.05 ft²	DefaultLeakage	Interior	(Default) c	(Default) %		
_____	2	Attic	6	291 ft²	Attic	58.2 ft²	DefaultLeakage	Interior	(Default) c	(Default) %		

TEMPERATURES

ProgramableThermostat: N				Ceiling Fans:									
Cooling	☒ Jan	☒ Feb	☒ Mar	☒ Apr	☒ May	☒ Jun	☒ Jul	☒ Aug	☒ Sep	☒ Oct	☒ Nov	☒ Dec	
Heating	☒ Jan	☒ Feb	☒ Mar	☒ Apr	☒ May	☒ Jun	☒ Jul	☒ Aug	☒ Sep	☒ Oct	☒ Nov	☒ Dec	
Venting	☒ Jan	☒ Feb	☒ Mar	☒ Apr	☒ May	☒ Jun	☒ Jul	☒ Aug	☒ Sep	☒ Oct	☒ Nov	☒ Dec	
ThermostatSchedule: HERS 2006 Reference													
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	78	78	78	78
	PM	78	78	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	68	68	68	68	68	68	68	68	68	68	68	68
	PM	68	68	68	68	68	68	68	68	68	68	68	68
Heating (WEH)	AM	68	68	68	68	68	68	68	68	68	68	68	68
	PM	68	68	68	68	68	68	68	68	68	68	68	68

Code Compliance Checklist

Residential Whole Building Performance Method A - Details

ADDRESS:

Lake City, FL, 32024-

PERMIT #:

INFILTRATION REDUCTION COMPLIANCE CHECKLIST

COMPONENTS	SECTION	REQUIREMENTS FOR EACH PRACTICE	CHECK
Exterior Windows & Doors	N1106.AB.1.1	Maximum: .3 cfm/sq.ft. window area; .5 cfm/sq.ft. door area.	
Exterior & Adjacent Walls	N1106.AB.1.2	Caulk, gasket, weatherstrip or seal between: windows/doors & frames, surrounding wall; foundation & wall sole or sill plate; joints between exterior wall panels at corners; utility penetrations; between wall panels & top/bottom plates; between walls and 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	Penetrations/openings > 1/8" sealed unless backed by truss or joint 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	Between walls & ceilings; penetrations of ceiling plane to 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	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 with < 2.0 cfm from conditioned space, tested.	
Multi-story Houses	N1106.AB.1.2	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.	

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.ABC.3 Switch or clearly marked circuit breaker (electric) or cutoff (gas) must be provided. External or built-in heat trap required.	
Swimming Pools & Spas	N1112.AB.2.3	Spas & heated pools must have covers (except solar heated). Non-commercial pools must have a pump timer. Gas spa & pool heaters must have a minimum thermal efficiency of 78%. Heat pump pool heaters shall have a minimum COP of 4.0.	
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.AB. Ducts in unconditioned attics: R-6 min. 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.	

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 84

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

, Lake City, FL, 32024-

1. New construction or existing	New (From Plans)	9. Wall Types	Insulation	Area
2. Single family or multiple family	Single-family	a. Frame - Wood, Exterior	R=13.0	2437.00 ft ²
3. Number of units, if multiple family	1	b. N/A	R=	ft ²
4. Number of Bedrooms	3	c. N/A	R=	ft ²
5. Is this a worst case?	No	d. N/A	R=	ft ²
6. Conditioned floor area (ft ²)	2325	10. Ceiling Types	Insulation	Area
7. Windows**	Description	a. Under Attic (Vented)	R=30.0	1164.00 ft ²
a. U-Factor:	Dbl, U=0.30	b. N/A	R=	ft ²
SHGC:	SHGC=0.50	c. N/A	R=	ft ²
b. U-Factor:	N/A	11. Ducts (combined)		
SHGC:		a. Sup: Attic Ret: Attic AH: Interior Sup. R= 6, 291 ft ²		
c. U-Factor:	N/A	12. Cooling systems (combined)		
SHGC:		a. Central Unit	Cap: 44.0 kBtu/hr	
d. U-Factor:	N/A		SEER: 15	
SHGC:		13. Heating systems (combined)		
e. U-Factor:	N/A	a. Electric Heat Pump	Cap: 44.0 kBtu/hr	
SHGC:			HSPF: 7.7	
8. Floor Types	Insulation	14. Hot water systems		
a. Slab-On-Grade Edge Insulation	R=5.0	a. Electric	Cap: 80 gallons	
b. N/A	R=		EF: 0.92	
c. N/A	R=	b. Conservation features		
		None		
		15. Credits		None

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: The home's estimated Energy Performance Index is only available through the EnergyGauge USA - FlaRes2008 computer program. This is not a Building Energy Rating. If your Index is below 100, your home may qualify for incentives if you obtain a Florida Energy Gauge Rating. Contact the Energy Gauge Hotline at (321) 638-1492 or see the Energy Gauge web site at energygauge.com for information and a list of certified Raters. For information about Florida's Energy Efficiency Code for Building Construction, contact the

**Label required by Section 13-104.4.5 of the Florida Building Code, Building, or Section B2.1.1 of Appendix G of the Florida Building Code, Residential, if not DEFAULT.

EnergyGauge® USA - FlaRes2008

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 84

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

, Lake City, FL, 32024-

1. New construction or existing	New (From Plans)	9. Wall Types	Insulation	Area
2. Single family or multiple family	Single-family	a. Frame - Wood, Exterior	R=13.0	2437.00 ft ²
3. Number of units, if multiple family	1	b. N/A	R=	ft ²
4. Number of Bedrooms	3	c. N/A	R=	ft ²
5. Is this a worst case?	No	d. N/A	R=	ft ²
6. Conditioned floor area (ft ²)	2325	10. Ceiling Types	Insulation	Area
7. Windows**	Description	a. Under Attic (Vented)	R=30.0	1164.00 ft ²
a. U-Factor:	DbI, U=0.30	b. N/A	R=	ft ²
SHGC:	SHGC=0.50	c. N/A	R=	ft ²
b. U-Factor:	N/A	11. Ducts (combined)		
SHGC:		a. Sup: Attic Ret: Attic AH: Interior Sup. R= 6, 291 ft ²		
c. U-Factor:	N/A	12. Cooling systems (combined)		
SHGC:		a. Central Unit	Cap: 44.0 kBtu/hr	
d. U-Factor:	N/A		SEER: 15	
SHGC:		13. Heating systems (combined)		
e. U-Factor:	N/A	a. Electric Heat Pump	Cap: 44.0 kBtu/hr	
SHGC:			HSPF: 7.7	
8. Floor Types	Insulation	14. Hot water systems		
a. Slab-On-Grade Edge Insulation	R=5.0	a. Electric	Cap: 80 gallons	
b. N/A	R=		EF: 0.92	
c. N/A	R=	b. Conservation features		
		None		
		15. Credits		None

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: _____

Department of Community Affairs at (850) 487-1824.



**Label required by Section 13-104.4.5 of the Florida Building Code, Building, or Section B2.1.1 of Appendix G of the Florida Building Code, Residential, if not DEFAULT.

EnergyGauge® USA - FlaRes2008

Finish Floor Elevation Requirement\Exemption

Client: Tommy & Arica Bulock
Contractor: Simque Construction
Description: Bulock Residence (Building Permit #000030028)
Parcel ID#: 01-5S-16-03401-000

Foundation Requirements:

For protection against water damage during the 100 year storm event, the minimum finish floor elevation of the proposed structure shall be 12 inches above the existing ground at any point along the perimeter of the proposed structure. In no case shall the finish floor elevation be less than 77.00 feet above sea level for any structures on this property.

The ground around the proposed structure shall be graded such as to convey all stormwater runoff away from the proposed structure.

The USGS elevation survey (quad map, 5 foot contours) shows the nearby ground elevations to be about 87 feet, thus being approximately 11 feet above the estimated flood elevation of (not greater than) 76.00 feet.

Please note that this certification letter also serves as a request for exemption from the elevation requirements for areas where no base flood data has been provided. This is because the above elevations are based on an engineering analysis of flood hazards of the structure's current location, approximately +/-200 feet east of the adjacent graded road.



David M. Winsberg
PE# 68463, CA# 29596
April 5, 2012

