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FORM R405-2022 Supplement

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name:	Tuell Residence	Builder Name:	
Street:		Permit Office:	
City, State, Zip:	, FL,	Permit Number:	
Owner:		Jurisdiction:	
Design Location:	FL, Gainesville	County:	Columbia(Florida Climate Zone 2)

1. New construction or existing	Addition
2. Single family or multiple family	Detached
3. Number of units, if multiple family	1
4. Number of Bedrooms	1
5. Is this a worst case?	No
6. Conditioned floor area above grade (ft²)	617
Conditioned floor area below grade (ft²)	0

7. Windows(81.7 sqft.)	Description	Area
a. U-Factor:	Dbl, U=0.26	81.67 ft²
SHGC:	SHGC=0.20	
b. U-Factor:	N/A	ft²
SHGC:		
c. U-Factor:	N/A	ft²
SHGC:		
Area Weighted Average Overhang Depth:		1.500 ft
Area Weighted Average SHGC:		0.200

8. Skylights	Description	Area
U-Factor:(AVG)	N/A	N/A ft²
SHGC(AVG):	N/A	

9. Floor Types	Insulation	Area
a. Raised Floor	R= 0.0	617.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

10. Wall Types(690.7 sqft.)	Insulation	Area
a. Frame - Wood, Exterior	R=13.0	690.67 ft²
b. N/A		
c. N/A		
d. N/A		

11. Ceiling Types(617.0 sqft.)	Insulation	Area
a. Flat ceiling under att (Vented)	R=30.0	617.00 ft²
b. N/A		
c. N/A		

12. Roof(Metal, Vented)	Deck R=0.0	714 ft²
13. Ducts, location & insulation level		R ft²
a.		
b.		
c.		

14. Cooling Systems	kBtu/hr	Efficiency
a. Central Unit	12.0	SEER:21.00

15. Heating Systems	kBtu/hr	Efficiency
a. Electric Heat Pump	12.0	HSPF:8.50

16. Hot Water Systems - None required	
a. N/A	N/A
b. Conservation features	
17. Credits	CF, Pstat

Glass/Floor Area: 0.132

Total Proposed Modified Loads: 20.42
Total Baseline Loads: 23.65

PASS

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

PREPARED BY: _____

DATE: 7-21-23

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: _____

GREAT SEAL OF THE STATE OF FLORIDA IN GOD WE TRUST

Columbia County Building Department Reviewed for Code Compliance Field Copy Plans Examiner

- Compliance requires certification by the air handler unit manufacturer that the air handler enclosure qualifies as certified factory-sealed in accordance with R403.3.2.1.

- Proposed Qn of NAN exceeds the performance method default limit of 0.08 and therefore does not require duct testing. R405 .2.3

- Compliance requires an Air Barrier and Insulation Inspection Checklist in accordance with R402.4.1.1 and this project requires a PERFORMANCE envelope leakage test report with envelope leakage no greater than 4.89 ACH50 (R402.4.1.2).

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INPUT SUMMARY CHECKLIST REPORT

PROJECT

Title:	Tuell Residence			Address type:	Street Address
Building Type:	User	Bedrooms:	1	Lot #:	---
Owner:		Conditioned Area:	617	Block/SubDivision:	---
Builder Home ID:		Total Stories:	1	PlatBook:	---
Builder Name:		Worst Case:	No	Street:	
Permit Office:		Rotate Angle:	0	County:	Columbia
Jurisdiction:		Cross Ventilation:		City, State, Zip:	,
Family Type:	Detached	Whole House Fan:			FL,
New/Existing:	Addition	Terrain:	Urban		
Year Construct:	2023	Shielding:	Urban		
Comment:					

CLIMATE

√	Design Location	Tmy Site	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_REGIONA	32	92	70	75	1305.5	51	Medium

BLOCKS

√	Number	Name	Area	Volume
___	1	Block1	617	4936 cu ft

SPACES

√	Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Finished	Cooled	Heated
___	1	Addition	617	4936	No	2	1	Yes	Yes	Yes

FLOORS (Total Exposed Area = 617 sq.ft.)

√	#	Floor Type	Space	Exposed Perim	Perimeter R-Value	Area	U-Factor	Joist R-Value	Tile	Wood	Carpet
___	1	Raised Floor	Addition	---	---	617 ft	0.240	0	0.10	0.10	0.80

ROOF

√	#	Type	Materials	Roof Area	Gable Area	Roof Color	Rad Barr	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)
___	1	Gable or shed	Metal	714 ft²	180 ft²	Medium	N	0.75	No	0.9	No	0	30.26

ATTIC

√	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
___	1	Full attic	Vented	300	617 ft²	N	N

CEILING (Total Exposed Area = 617 sq.ft.)

√	#	Ceiling Type	Space	R-Value	Ins. Type	Area	U-Factor	Framing Frac.	Truss Type
___	1	Flat ceiling under attic(Vented)	Addition	30.0	Blown	617.0ft²	0.053	0.11	Wood

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WALLS (Total Exposed Area = 691 sq.ft.)

√ #	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	Width In	Height Ft	Height In	Area sq.ft.	U-Factor	Sheath R-Value	Frm. Frac.	Solar Absor.	Below Grade
___ 1	W	Exterior	Frame - Wood	Addition	13.0	10.0	0	8.0	0	80.0	0.094		0.23	0.75	0 %
___ 2	N	Exterior	Frame - Wood	Addition	13.0	29.0	4	8.0	0	234.7	0.094		0.23	0.75	0 %
___ 3	W	Exterior	Frame - Wood	Addition	13.0	8.0	0	8.0	0	64.0	0.094		0.23	0.75	0 %
___ 4	N	Exterior	Frame - Wood	Addition	13.0	8.0	8	8.0	0	69.3	0.094		0.23	0.75	0 %
___ 5	E	Exterior	Frame - Wood	Addition	13.0	30.0	4	8.0	0	242.7	0.094		0.23	0.75	0 %

DOORS (Total Exposed Area = 40 sq.ft.)

√ #	Ornt	Adjacent To	Door Type	Space	Storms	U-Value	Width Ft	Width In	Height Ft	Height In	Area
___ 1	N	Exterior	Insulated	Addition	None	0.40	3.00	0	6.00	8	20.0ft²
___ 2	N	Exterior	Insulated	Addition	None	0.40	3.00	0	6.00	8	20.0ft²

WINDOWS (Total Exposed Area = 82 sq.ft.)

√ #	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Imp	Storm	Total Area (ft²)	Same Units	Width (ft)	Height (ft)	--Overhang-- Depth (ft)	Sep. (ft)	Interior Shade	Screen
___ 1	W	1	Vinyl	Low-E Double	Y	0.26	0.20	N	N	15.0	1	3.00	5.00	1.5	2.3	None	None
___ 2	N	2	Vinyl	Low-E Double	Y	0.26	0.20	N	N	15.0	1	3.00	5.00	1.5	2.3	None	None
___ 3	N	2	Vinyl	Low-E Double	Y	0.26	0.20	N	N	6.7	1	1.00	6.67	1.5	2.3	None	None
___ 4	W	3	Vinyl	Low-E Double	Y	0.26	0.20	N	N	6.0	1	2.00	3.00	1.5	2.3	None	None
___ 5	N	4	Vinyl	Low-E Double	Y	0.26	0.20	N	N	6.0	1	2.00	3.00	1.5	2.3	None	None
___ 6	E	5	Vinyl	Low-E Double	Y	0.26	0.20	N	N	3.0	1	3.00	1.00	1.5	2.3	None	None
___ 7	E	5	Vinyl	Low-E Double	Y	0.26	0.20	N	N	30.0	2	3.00	5.00	1.5	2.3	None	None

INFILTRATION

√ #	Scope	Method	SLA	CFM50	ELA	EqLA	ACH	ACH50	Space(s)	Infiltration Test Volume
___ 1	Wholehouse	Proposed ACH(50)	0.00025	402	22.07	41.43	0.0958	4.9	All	4936 cu ft

MASS

√ #	Mass Type	Area	Thickness	Furniture Fraction	Space
___ 1	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Addition

HEATING SYSTEM

√ #	System Type/Fl. Addition	Subtype/Speed	AHRI #	Efficiency	Capacity kBtu/hr	----Geothermal HeatPump---- Entry	Power	Volt	Current	Ducts	Block
___ 1	Electric Heat Pump/Supplementa	None/Single		HSPF: 8.50	12.0		0.00	0.00	0.00	sys#0	1

COOLING SYSTEM

√ #	System Type/Fl. Addition	Subtype/Speed	AHRI #	Efficiency	Capacity kBtu/hr	Air Flow cfm	SHR	Duct	Block
___ 1	Central Unit/Supplementa	None/Single		SEER:21.0	12.0	360	0.85	Ductless	1

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HOT WATER SYSTEM

√ #	System Type	Subtype	Location	EF(UEF)	Cap	Use	SetPnt	Fixture Flow	Pipe Ins.	Pipe length

Recirculation System	Recirc Control Type	Loop length	Branch length	Pump power	DWHR	Facilities Connected	Equal Flow	DWHR Eff	Other Credits

DUCTS

√ Duct #	Supply Location	Supply R-Value	Supply Area	Return Location	Return R-Value	Return Area	Leakage Type	Air Handler	CFM 25 TOT	CFM 25 OUT	QN	RLF	HVAC # Heat	HVAC # Cool

TEMPERATURES

Programable Thermostat: Y Ceiling Fans: N

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

√ Thermostat Schedule: HERS 2006 Reference Schedule Type		Hours 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