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Florida Energy Efficiency Code For Building Construction

EnergyGauge Summit® Fla/Com-2010, Effective Date: March 15, 2012 -- Form 506-2010

Total Building Performance Method for Commercial Buildings

PROJECT SUMMARY

Short Desc: 1205066

Owner: Mike Shaw

Address1: 413 NE McCloskey Ave.

Address2:

Type: Office

Jurisdiction: COLUMBIA COUNTY, COLUMBIA COUNTY, FL (221000)

Conditioned Area: 1600 SF

No of Stories: 1

Permit No: 0

Description: Bryant Construction - Mayo Fer

City: Lake City

State: Florida

Zip: 32055

Class: Addition to existing Building

Conditioned & UnConditioned Area: 1600 SF

Area entered from Plans 1600 SF

Max Tonnage 3.4

If different, write in: _____



Compliance Summary			
Component	Design	Criteria	Result
Gross Energy Cost (in \$)	820.0	827.0	PASSED
System Unmet Hours		35.0	PASSED
LIGHTING CONTROLS			PASSES
EXTERNAL LIGHTING			PASSES
HVAC SYSTEM			PASSES
PLANT			None Entered
WATER HEATING SYSTEMS			None Entered
PIPING SYSTEMS			None Entered
Met all required compliance from Check List?			Yes/No/NA
IMPORTANT MESSAGE Info 5009 -- -- -- An input report of this design building must be submitted along with this Compliance Report			

CERTIFICATIONS

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

Prepared By: Mark Disosway PE

Building Official: _____

Date: 7/6/12

Date: _____

I certify that this building is in compliance with the FLorida Energy Efficiency Code

Owner Agent: _____

Date: _____

If Required by Florida law, I hereby certify (*) that the system design is in compliance with the Florida Energy Efficiency Code

Architect: _____

Reg No: _____

Electrical Designer: _____

Reg No: _____

Lighting Designer: _____

Reg No: _____

Mechanical Designer: _____

Reg No: _____

Plumbing Designer: _____

Reg No: _____

(*) Signature is required where Florida Law requires design to be performed by registered design professionals.

Project: 1205066
 Title: Bryant Construction - Mayo Fertilizer
 Type: Office
 (WEA File: FL_JACKSONVILLE_INTL_ARPT.tm3)

Building End Uses

	1) Proposed	2) Baseline
Total	52.90	66.50
	\$820	\$1,034
ELECTRICITY(MBtu/kWh/\$)	52.90	66.50
	15510	19470
	\$820	\$1,034
AREA LIGHTS	8.40	18.40
	2450	5390
	\$130	\$286
MISC EQUIPMT	24.00	24.00
	7033	7033
	\$372	\$373
PUMPS & MISC	0.10	0.20
	35	45
	\$2	\$2
SPACE COOL	13.80	17.30
	4049	5071
	\$214	\$269
SPACE HEAT	0.70	0.00
	207	0
	\$11	\$0
VENT FANS	5.90	6.60
	1736	1931
	\$92	\$103

Passing requires Proposed Building cost to be at most 80%
 of Baseline cost. This Proposed Building is at 79.4%

PASSES

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External Lighting Compliance						
Description	Category	Tradable?	Allowance (W/Unit)	Area or Length or No. of Units (Sqft or ft)	ELPA (W)	CLP (W)
Ext Light 2	Entry Canopies	Yes	1.25	36.0	45	40

Tradable Surfaces: 40 (W) Allowance for Tradable: 608.64 (W)
 All External Lighting: 40 (W)
 Complicance check includes a excess/Base allowance of 600.00(W)

PASSES

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Lighting Controls Compliance						
Acronym	Ashrae ID	Description	Area (sq.ft)	Design CP	Min CP	Compli- ance
Pr0Zo1Sp1	17	Office - Enclosed	1,600	9	1	PASSES

PASSES

(WEA File: FL JACKSONVILLE INTL ARPT.tm3)

Pr0Sy1	System 1	Constant Volume Air Cooled Split System < 65000 Btu/hr	No. of Units 1
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PASSES

Description	Installed No	Size	Design Eff	Min Eff	Design IPLV	Min IPLV	Category	Compliance
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	None

Description	Type	Category	Design Eff	Min Eff	Design Loss	Max Loss	Compliance
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None

Piping System Compliance							
Category	Pipe Dia [inches]	Is Runout?	Operating Temp [F]	Ins Cond [Btu-in/hr .SF.F]	Ins Thick [in]	Req Ins Thick [in]	Compliance
					None		

Project: 1205066

Title: Bryant Construction - Mayo Fertilizer

Type: Office

(WEA File: FL_JACKSONVILLE_INTL_ARPT.tn3)

Other Required Compliance

Category	Section	Requirement (write N/A in box if not applicable)	Check
Report	506.4.2	Input Report Print-Out from EnergyGauge FlaCom attached	☐
Operations Manual	303.3.1, 503.2.9.3, 505.7.4.2	Operations manual provided to owner	☐
Windows & Doors	502.3.2	Glazed swinging entrance & revolving doors: max. 1.0 cfm/ft ² ; all other products: 0.3 cfm/ft ²	☐
Joints/Cracks	502.3.3	To be caulked, gasketed, weather-stripped or otherwise sealed	☐
Dropped Ceiling Cavity	502.3	Vented: seal & insulated ceiling. Unvented seal & insulate roof & side walls	☐
HVAC Efficiency	503.2.3	Minimum efficiencies: Tables 503.2.3(1)-(8)	☐
HVAC Controls	503.2.4	Zone controls prevent reheat (exceptions); separate thermostatic control per zone;	☐
Ventilation	503.2.5	Outdoor air supply & exhaust ducts shall have dampers that automatically shut when systems or spaces served are not in use. Exhaust air energy recovery required for cooling systems (Exceptions).	☐
ADS	503.2.7.5	Duct sizing and Design have been performed	☐
HVAC Ducts	503.2.7	Air ducts, fittings, mechanical equipment & plenum chambers shall be mechanically attached, sealed, insulated & installed per Table 503.2.7.2. Fan power limitations.	☐
Balancing	503.2.9.1	HVAC distribution system(s) tested & balanced. Report in construction documents.	☐
Piping Insulation	503.2.8	HAC and service hot water. In accordance with Table 503.2.8.	☐
Water Heaters	504	Performance requirements in accordance with Table 504.2. Heat trap required.	☐
Swimming Pools	504.7	Vapor-retardant or liquid cover or other means proven to reduce heat loss on heated pools; Time switch (exceptions); readily accessible on/off switch.	☐
Motors	505.7.5	Motor efficiency criteria have been met	☐
Lighting Controls	505.2, 502.3	Automatic control required for interior lighting in buildings >5,000 s.f.; Space control; Exterior photo sensor; Tandom wiring with 1 or 3 linear fluorescent lamps>30W	☐

Project: 1205066
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Fertilizer
Type: Office
(WEA File:
FL_JACKSONVILLE_INTL_ARPT.tm
3)

Unmet Hours Report

Baseline Building

System: Pr0Sy2

Zone: Pr0Zo1

Hours Under
Heated

Hours Under
Cooled

Jan
Feb
Dec

26
7
2

0
0
0

Year:

35

0

INPUT DATA REPORT**Project Information**

Project Name: 1205066

Project Title: Bryant Construction - Mayo Fertilizer

Address: 413 NE McCloskey Ave.

Orientation: North

Building Type: Office

Building Classification: Addition to existing Building

State: Florida

No. of Stories: 1

Zip: 32055

GrossArea: 1600 SF

Owner: Mike Shaw

Zones

No	Acronym	Description	Type	Area [sf]	Multiplier	Total Area [sf]
1	Pr0Zo1	Addition	CONDITIONED	1600.0	1	1600.0

Spaces

No	Acronym	Description	Type	Depth [ft]	Width [ft]	Height [ft]	Multi plier	Total Area [sf]	Total Volume [cf]
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In Zone: Pr0Zo1		Office - Enclosed					12800.0		☐
1	Pr0Zo1Sp1	Zo0Sp1		40.00	40.00	8.00	1	1600.0	

Lighting

No	Type	Category	No. of Luminaires	Watts per Luminaire	Power [W]	Control Type	No. of Ctrl pts
In Zone: Pr0Zo1							
In Space: Pr0Zo1Sp1							
1	Recessed Fluorescent - No vent	General Lighting	10	80	800	Manual On/Off	9

Walls

No	Description	Type	Width [ft]	H (Effec) [ft]	Multi plier	Area [sf]	Direction	Conductance [Btu/hr. sf. F]	Heat Capacity [Btu/sf.F]	Dens. [lb/cf]	R-Value [h.s.f.F/Btu]
In Zone: Pr0Zo1											
1	Pr0Zo1Wal	Siding, R13, 0.5 in. gyp	40.00	8.00	1	320.0	North	0.0702	0.948	10.44	14.2
2	Pr0Zo1Wa2	Siding, R13, 0.5 in. gyp	40.00	10.00	1	400.0	East	0.0702	0.948	10.44	14.2
3	Pr0Zo1Wa3	4" Brick /R-13/0.5" Gyp	40.00	8.00	1	320.0	West	0.0665	8.947	61.81	15.0

Windows

No	Description	Type	Shaded	U [Btu/hr sf F]	SHGC	Vis.Tra	W [ft]	H (Effec) [ft]	Multi plier	Total Area [sf]
In Zone: Pr0Zo1										
In Wall: east / rear										
1	Pr0Zo1Wa2Wi1	User Defined	Yes	0.3500	0.35	0.70	3.00	4.00	1	12.0
In Wall: north										
1	Pr0Zo1Wa1Wi1	User Defined	No	0.3500	0.35	0.70	3.00	4.00	1	12.0
In Wall: West / Front										

1	Pr0Zo1Wa3Wi1	User Defined	Yes	0.3500	0.35	0.70	3.00	4.00	3	36.0	☐
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Doors

No	Description	Type	Shaded?	Width [ft]	H (Effec) [ft]	Multi plier	Area [sf]	Cond. [Btu/hr. sf. F]	Dens. [lb/cf]	Heat Cap. [Btu/sf. F]	R-Value [h.s.f.F/Btu]
In Zone: Pr0Zo1											
In Wall: east / rear											
1	Pr0Zo1Wa2Dr1	Aluminum door, 1.25 in. polystyrene	Yes	3.00	7.00	1	21.0	0.1919	43.67	0.53	5.21

Roofs

No	Description	Type	Width [ft]	H (Effec) [ft]	Multi plier	Area [sf]	Tilt [deg]	Cond. [Btu/hr. Sf. F]	Heat Cap [Btu/sf. F]	Dens. [lb/cf]	R-Value [h.s.f.F/Btu]
In Zone: Pr0Zo1											
1	Pr0Zo1Rf1	Ceiling, exposed to attic, R-30	40.00	40.00	1	1600.0	0.00	0.0328	0.46	3.28	30.5

Skylights

No	Description	Type	U [Btu/hr sf F]	SHGC	Vis.Trans	W [ft]	H (Effec) [ft]	Multiplier	Area [Sf]	Total Area [Sf]
In Zone:										
In Roof:										

Floors

No	Description	Type	Width [ft]	H (Effec) [ft]	Multi plier	Area [sf]	Cond. [Btu/hr. sf. F]	Heat Cap. [Btu/sf. F]	Dens. [lb/cf]	R-Value [h.s.f.F/Btu]
In Zone: Pr0Zo1										

1	Pr0Zo1F11	1 ft. soil, concrete floor, carpet and rubber pad	40.00	40.00	1	1600.0	0.2681	34.00	113.33	3.73	☐
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Systems

Pr0Sy1		System 1		Constant Volume Air Cooled Split System < 65000 Btu/hr		No. Of Units 1	
Component	Category	Capacity	Efficiency	IPLV	•		
1	Cooling System	40500.00	13.00	8.00	☐		
2	Heating System	41500.00	8.20		☐		
3	Air Handling System -Supply	1350.00	0.30		☐		
4	Air Distribution System (Sup)		6.00		☐		
5	Air Distribution System (Ret)		6.00		☐		

Plant

Equipment	Category	Size	Inst.No	Eff.	IPLV
					☐

Water Heaters

W-Heater Description	Capacity Cap.Unit	I/P Rt.	Efficiency	Loss
				☐

Ext-Lighting

Description	Category	No. of Luminaires	Watts per Luminaire	Area/Len/No. of units [sf/ft/No]	Control Type	Wattage [W]
1 Ext Light 2	Entry Canopies	1	40	36.00	Photo Sensor control	40.00
						☐

Piping						
No	Type	Operating Temperature [F]	Insulation Conductivity [Btu-in/h.sf.F]	Nomonal pipe Diameter [in]	Insulation Thickness [in]	Is Runout?
						☐

Fenestration Used				
Name	Glass Type	No. of Panes	Glass Conductance [Btu/h.sf.F]	VLT
ApLbWnd13	User Defined	2	0.3500	0.7000
				☐

Materials Used									
Mat No	Acronym	Description	Only R-Value Used	RValue [h.sf.F/Btu]	Thickness [ft]	Conductivity [Btu/h.ft.F]	Density [lb/cf]	SpecificHeat [Btu/lb.F]	
264	Mat1264	ALUMINUM, 1/16 IN	No	0.0002	0.0050	26.0000	480.00	0.1000	☐
214	Mat1214	POLYSTYRENE, EXP., 1-1/4IN,	No	5.2100	0.1042	0.0200	1.80	0.2900	☐
187	Mat1187	GYP OR PLAS BOARD, 1/2IN	No	0.4533	0.0417	0.0920	50.00	0.2000	☐
178	Mat1178	CARPET W/RUBBER PAD	Yes	1.2300					☐
265	Mat1265	Soil, 1 ft	No	2.0000	1.0000	0.5000	100.00	0.2000	☐
48	Mat148	6 in. Heavyweight concrete	No	0.5000	0.5000	1.0000	140.00	0.2000	☐
86	Mat186	BRICK, COMMON, 4IN	No	0.8012	0.3333	0.4160	120.00	0.2000	☐
245	Mat1245	PLYWOOD, 5/8IN	No	0.7894	0.0521	0.0660	34.00	0.2900	☐
1001	ApLbMat1001	R-13 Generic Insulation	No	13.0000	0.2837	0.0218	0.30	0.2000	☐
1002	ApLbMat1002	R-30 Generic Insulation	No	30.0000	0.6548	0.0218	0.30	0.2000	☐

Constructs Used

No	Name	Simple Construct	Massless Construct	Conductance [Btu/h.s.f.F]	Heat Capacity [Btu/sf.F]	Density [lb/cf]	RValue [h.s.f./Btu]
1002	Aluminum door, 1.25 in. polystyrene	No	No	0.19	0.53	43.67	5.2
Layer	Material No.	Material	Thickness [ft]	Framing Factor			
1	264	ALUMINUM, 1/16 IN	0.0050	0.000			
2	214	POLYSTYRENE, EXP., 1-1/4IN,	0.1042	0.000			
3	264	ALUMINUM, 1/16 IN	0.0050	0.000			
No	Name	Simple Construct	Massless Construct	Conductance [Btu/h.s.f.F]	Heat Capacity [Btu/sf.F]	Density [lb/cf]	RValue [h.s.f./Btu]
1003	Ceiling, exposed to attic, R-30	No	No	0.03	0.46	3.28	30.5
Layer	Material No.	Material	Thickness [ft]	Framing Factor			
1	187	GYP OR PLAS BOARD, 1/2IN	0.0417	0.000			
2	1002	R-30 Generic Insulation	0.6548	0.000			
No	Name	Simple Construct	Massless Construct	Conductance [Btu/h.s.f.F]	Heat Capacity [Btu/sf.F]	Density [lb/cf]	RValue [h.s.f./Btu]
1009	Siding, R13, 0.5 in. gyp	No	No	0.07	0.95	10.44	14.2
Layer	Material No.	Material	Thickness [ft]	Framing Factor			
1	245	PLYWOOD, 5/8IN	0.0521	0.000			
2	1001	R-13 Generic Insulation	0.2837	0.000			
3	187	GYP OR PLAS BOARD, 1/2IN	0.0417	0.000			

No	Name	Simple Construct	Massless Construct	Conductance [Btu/h.s.f.F]	Heat Capacity [Btu/sf.F]	Density [lb/cf]	RValue [h.s.f.F/Btu]
1012	4" Brick /R-13/0.5" Gyp	No	No	0.07	8.95	61.81	15.0
Layer	Material No.	Material	Thickness [ft]	Framing Factor			
1	86	BRICK, COMMON, 4IN	0.3333	0.000			
2	1001	R-13 Generic Insulation	0.2837	0.000			
3	187	GYP OR PLAS BOARD, 1/2IN	0.0417	0.000			
4	245	PLYWOOD, 5/8IN	0.0521	0.000			
No	Name	Simple Construct	Massless Construct	Conductance [Btu/h.s.f.F]	Heat Capacity [Btu/sf.F]	Density [lb/cf]	RValue [h.s.f.F/Btu]
1057	1 ft. soil, concrete floor, carpet and rubber pad	No	No	0.27	34.00	113.33	3.7
Layer	Material No.	Material	Thickness [ft]	Framing Factor			
1	265	Soil, 1 ft	1.0000	0.000			
2	48	6 in. Heavyweight concrete	0.5000	0.000			
3	178	CARPET W/RUBBER PAD		0.000			