

# Florida Building Code, Fifth Edition (2014) - Energy Conservation

EnergyGauge Summit® Fla/Com-2015, Effective Date: June 30, 2015

IECC 2012 - Prescriptive Compliance Option

## Check List

Applications for compliance with the Florida Building Code, Energy Conservation shall include:

- This Checklist
- An Input report generated from the software just after completing compliance calculations without any further changes
- The full compliance report generated by the software that contains the project summary, compliance summary, certifications and detailed component compliance reports
- Boxes appropriately checked in the Miscellaneous report generated by the software at the end of the compliance report

## PROJECT SUMMARY

<p><b>Short Desc:</b> Fire Station#16</p> <p><b>Owner:</b> ---</p> <p><b>Address1:</b> 533 NE 22th Street</p> <p><b>Address2:</b></p> <p><b>Type:</b> Fire Station</p> <p><b>Jurisdiction:</b> WILTON MANORS, BROWARD COUNTY, FL (163900)</p> <p><b>Conditioned Area:</b> 2948 SF</p> <p><b>No of Stories:</b> 1</p> <p><b>Permit No:</b> 0</p>	<p><b>Description:</b> Interior remodeling for Fire S</p> <p><b>City:</b> Wilton Manors</p> <p><b>State:</b> FL</p> <p><b>Zip:</b> 33305</p> <p><b>Class:</b> Renovation to existing buildi</p> <p><b>Conditioned &amp; UnConditioned Area:</b> 2948 SF</p> <p><b>Area entered from Plans</b> 2948 SF</p> <p><b>Max Tonnage</b> 4.5</p> <p><b>If different, write in:</b> _____</p>
---	---

## Compliance Summary

Component	Design	Criteria	Result
ENVELOPE PRESCRIPTIVE			<b>PASSES</b>
Additional Efficiency Package Option - System			<b>PASSES</b>
Additional Efficiency Package Option - Plant			<b>No Entry</b>
LIGHTING POWER	2,660.0	2,823.1	<b>PASSES</b>
LIGHTING CONTROLS			<b>PASSES</b>
EXTERNAL LIGHTING			<b>No Entry</b>
HVAC SYSTEM			<b>PASSES</b>
PLANT			<b>No Entry</b>
WATER HEATING SYSTEMS			<b>PASSES</b>
PIPING SYSTEMS			<b>PASSES</b>
Met all required compliance from Check List?			<b>Yes/No/NA</b>
<b>IMPORTANT MESSAGE</b>			
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: \_\_\_\_\_ Building Official: \_\_\_\_\_

Date: \_\_\_\_\_ 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. Typed names and registration numbers may be used where all relevant information is contained on signed/sealed plans.

**Project: Fire Station#16**  
**Title: Interior remodeling for Fire Station#16**  
**Type: Fire Station**  
**(WEA File: Miami.tmy)**

### Prescriptive Envelope Compliance

Item	Zone	Description	Design	Criteria Meet Req.
All Skylights	Fire Station#16	Percent Skylight Max allowed (%)	.000	3.000 Yes
All Fenestratio	Fire Station#16	Percent Fenestration Max allowed (%)	.000	30.000 Yes

**Meets Prescriptive Envelope Requirements -- PASSES**

<b>External Lighting Compliance</b>						
<b>Description</b>	<b>Category</b>	<b>Tradable?</b>	<b>Allowance (W/Unit)</b>	<b>Area or Length or No. of Units (Sqft or ft)</b>	<b>ELPA (W)</b>	<b>CLP (W)</b>
						<b>None</b>

**Project: Fire Station#16**  
**Title: Interior remodeling for Fire Station#16**  
**Type: Fire Station**  
**(WEA File: Miami.tmy)**

<b>Lighting Power Compliance</b>								
<b>Space</b>	<b>Ashrae ID</b>	<b>Description</b>	<b>Area (sq.ft)</b>	<b>Height (ft)</b>	<b>No. of Spaces</b>	<b>Design (W)</b>	<b>Effective (W)</b>	<b>Allowance (W)</b>
Meeting Room	15	Conference/meeting (Multiple Functions)	989	8.5	1	1160	1160	1,187
Kitchen	7	Food Service - Kitchen	190	8.5	1	200	200	228
Bedroom area	22,003	Fire station Sleeping Quarters	499	8.5	1	140	140	150
Offices	17	Office - Enclosed	804	8.5	1	800	800	884
Corridors	5	Corridor	306	8.5	1	200	200	214
Restrooms	6	Toilet and Washroom	160	8.5	1	160	160	160

**Design : 2660 (W)**  
**Effective: 2660 (W)**  
**Allowance: 2823.1 (W)**

**PASSES**

**Passing requires Design to be at most 100% of Criteria**

**Project: Fire Station#16**  
**Title: Interior remodeling for Fire Station#16**  
**Type: Fire Station**  
**(WEA File: Miami.tmy)**

### Lighting Controls Compliance

Acronym	Ashrae ID	Description	Area (sq.ft)	Design CP	Min CP	Compliance
Meeting Rm	15	Conference/meeting (Multiple Functions)	989	1	1	<b>PASSES</b>
Kitchen	7	Food Service - Kitchen	190	1	1	<b>PASSES</b>
Bedroom area	22,003	Fire station Sleeping Quarters	499	3	1	<b>PASSES</b>
Offices	17	Office - Enclosed	804	6	1	<b>PASSES</b>
Corridors	5	Corridor	306	1	1	<b>PASSES</b>
Restrooms	6	Toilet and Washroom	160	1	1	<b>PASSES</b>

**PASSES**

**Project: Fire Station#16**  
**Title: Interior remodeling for Fire Station#16**  
**Type: Fire Station**  
**(WEA File: Miami.tmy)**

### System Report Compliance

<b>AHU/CU-1</b>	<b>---</b>	<b>Constant Volume Air Cooled Split System &lt; 65000 Btu/hr</b>	<b>No. of Units 1</b>
-----------------	------------	--	---------------------------

Component	Category	Capacity	Design Eff	Eff Criteria	Design IPLV	IPLV Criteria	Compliance
Cooling System	Air Conditioners Air Cooled Split System < 65000 Btu/h Cooling Capacity	54500	14.00	13.00	11.20		<b>PASSES</b>
Heating System	Electric Furnace	24550	1.00	1.00			<b>PASSES</b>
Air Handling System -Supply	Air Handler (Supply) - Constant Volume	1900	0.80	0.82			<b>PASSES</b>

<b>AHU/CU-2</b>	<b>---</b>	<b>Constant Volume Air Cooled Split System &lt; 65000 Btu/hr</b>	<b>No. of Units 1</b>
-----------------	------------	--	---------------------------

Component	Category	Capacity	Design Eff	Eff Criteria	Design IPLV	IPLV Criteria	Compliance
Cooling System	Air Conditioners Air Cooled Split System < 65000 Btu/h Cooling Capacity	47500	14.50	13.00	11.20		<b>PASSES</b>
Heating System	Electric Furnace	24550	1.00	1.00			<b>PASSES</b>
Air Handling System -Supply	Air Handler (Supply) - Constant Volume	1600	0.80	0.82			<b>PASSES</b>

<b>PASSES</b>
---------------

Project: Fire Station#16  
 Title: Interior remodeling for Fire Station#16  
 Type: Fire Station  
 (WEA File: Miami.tmy)

### IECC Additional System Efficiency Package Option

**AHU/CU-1 ---** **Constant Volume Air Cooled**  
**Split System < 65000 Btu/hr** **No. of Units**  
**1**

Component	Category	Capacity	Design Eff	Eff Criteria	Design IPLV	IPLV Criteria	Compliance
Cooling System	Air Conditioners Air Cooled Split System < 65000 Btu/h Cooling Capacity	54500	14.00	15.00	11.20		<b>FAILS</b>
Heating System	Electric Furnace	24550	1.00	1.00			<b>PASSES</b>
Air Handling System -Supply	Not in Check list - Compliance Ignored	1900	0.80	0.80			<b>N/A</b>

**AHU/CU-2 ---** **Constant Volume Air Cooled**  
**Split System < 65000 Btu/hr** **No. of Units**  
**1**

Component	Category	Capacity	Design Eff	Eff Criteria	Design IPLV	IPLV Criteria	Compliance
Cooling System	Air Conditioners Air Cooled Split System < 65000 Btu/h Cooling Capacity	47500	14.50	15.00	11.20		<b>FAILS</b>
Heating System	Electric Furnace	24550	1.00	1.00			<b>PASSES</b>
Air Handling System -Supply	Not in Check list - Compliance Ignored	1600	0.80	0.80			<b>N/A</b>

**FAILS**

### Plant Compliance

Description	Installed No	Size	Design Eff	Min Eff	Design IPLV	Min IPLV	Category	Compliance
								<b>None</b>

**None**

## IECC Additional Plant Efficiency Package Option

Description	Installed No	Size	Design Eff	Min Eff	Design IPLV	Min IPLV	Category	Comp liance
-------------	-----------------	------	---------------	------------	----------------	-------------	----------	----------------

None

**Project: Fire Station#16**  
**Title: Interior remodeling for Fire Station#16**  
**Type: Fire Station**  
**(WEA File: Miami.tmy)**

### Water Heater Compliance

Description	Type	Category	Design Eff	Min Eff	Design Loss	Max Loss	Comp liance
Water Heater 1	Electric water heater	<= 12 [kW]	0.92	0.90			<b>PASSES</b>

PASSES

**Project: Fire Station#16**  
**Title: Interior remodeling for Fire Station#16**  
**Type: Fire Station**  
**(WEA File: Miami.tmy)**

### 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
Heating System (Steam, Steam Condensate, & Hot Water)	0.25	False	110.00	0.28	1.00	0.50	<b>PASSES</b>

PASSES

## Mandatory Requirements (as applicable)

Mandatory requirements compiled by US Department of Energy and Pacific Northwest National Laboratory. Adopted with permission

Topic	Section	Component	Description	Yes	N/A	Ex
<b>1. To be checked by Designer or Engineer</b>						
Fenestration	C402.2.7	Envelope	U-factor of opaque doors associated with the building thermal envelope meets requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C402.2.1.1	Envelope	High-albedo roofs satisfy one of the following: 3-year-aged solar reflectance $\geq 0.55$ and thermal emittance $\geq 0.75$ , 3-year-aged solar reflectance index $\geq 64.0$ , initial year solar reflectance $\geq 0.70$ and thermal emittance $\geq 0.75$ , or initial year solar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wattage	C405.6	Exterior Lighting	Exterior grounds lighting over 100 W provides $>60$ lm/W unless on motion sensor or fixture is exempt from scope of code or from external LPD.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wattage	C405.4	Interior Lighting	Exit signs do not exceed 5 watts per face.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wattage	C405.2.3	Interior Lighting	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.6	Mechanical	Exhaust air energy recovery on systems meeting Table C403.2.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.3.1,C403.3.1.1	Mechanical	Air economizers provided where required, meet the requirements for design capacity, control signal, ventilation controls, high-limit shut-off, integrated economizer control, and provide a means to relieve excess outside air during operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.3.1,C403.4.1	Mechanical	Water economizers provided where required, meet the requirements for design capacity, maximum pressure drop and integrated economizer control.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.1.4	Mechanical	Economizer operation will not increase heating energy use during normal operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.10.1	Mechanical	HVAC fan systems at design conditions do not exceed allowable fan system motor nameplate hp or fan system bhp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.10.2	Mechanical	HVAC fan motors not larger than allowable limits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.2	Mechanical	Service water heating equipment meets efficiency requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.3	Mechanical	Centrifugal fan open-circuit cooling towers having combined rated capacity $\geq 1100$ gpm meets minimum efficiency requirement: $\geq 38.2$ gpm/hp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>2. To be checked by Plan Reviewer</b>						
Air Leakage	C402.4.7	Envelope	Vestibules are installed on all building entrances. Doors have self-closing devices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C402.2.6	Envelope	Slab edge insulation depth/length. Slab insulation extending away from building is covered by pavement or $\geq 10$ inches of soil.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan Review	C103.2	Envelope	Plans and/or specifications provide all information with which compliance can be determined for the building envelope and document where exceptions to the standard are claimed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Plan Review	C103.2	Exterior Lighting	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wattage	C405.6.2	Exterior Lighting	Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan Review	C103.2	Interior Lighting	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.5.1	Mechanical	Demand control ventilation provided for spaces >500 ft <sup>2</sup> and >25 people/1000 ft <sup>2</sup> occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.4.3	Mechanical	Each zone equipped with setback controls using automatic time clock or programmable control system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan Review	C103.2	Mechanical	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan Review	C103.2	Mechanical	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the service water heating systems and equipment and document where exceptions to the standard are claimed. Hot water system sized per manufacturer's sizing guide.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.5	Mechanical	Zone controls can limit simultaneous heating and cooling and sequence heating and cooling to each zone.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.3.1	Mechanical	Three-pipe hydronic systems using a common return for hot and chilled water are not used.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.3.2	Mechanical	Two-pipe hydronic systems using a common distribution system have controls to allow a deadband $\geq 15$ °F, allow operation in one mode for at least 4 hrs before changeover, and have rest controls to limit heating and cooling supply temperature to $\leq 30$ °F.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.3.3.1	Mechanical	Hydronic heat pump systems connected to a common water loop meet heat rejection and heat addition requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C408.2.2.2	Mechanical	HVAC hydronic heating and cooling coils have means to balance and have pressure test connections.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.2	Mechanical	VAV fan motors $\geq 7.5$ hp to be driven by variable speed drive, have a vane-axial fan with variable pitch blades, or have controls to limit fan motor demand.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.2.1	Mechanical	VAV fans have static pressure sensors positioned so setpoint $\leq 1/3$ total design pressure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.2.2	Mechanical	Reset static pressure setpoint for DDC controlled VAV boxes reporting to central controller based on the zones requiring the most pressure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.5.4	Mechanical	Multiple zone HVAC systems have supply air temperature reset controls.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.3.4	Mechanical	Hydronic systems greater than 300,000 Btu/h designed for variable fluid flow.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SYSTEM_SPECIFIC	C403.4.3.4	Mechanical	Temperature reset by representative building loads in pumping systems for chiller and boiler systems >300,000 Btu/h.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.4	Mechanical	Fan systems with motors >=7.5 hp associated with heat rejection equipment to have capability to operate at 2/3 of full-speed and auto speed controls to control the leaving fluid temperature or condensing temp/pressure of heat rejection device.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan Review	C406	Project	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan Review	C402.3.2.2	Envelope	Skylights in office, storage, automotive service, manufacturing, non-refrigerated warehouse, retail store, and distribution/sorting area have a measured haze value > 90 percent unless designed to exclude direct sunlight.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>3. To be checked by Inspector</b>						
Air Leakage	C402.4.1,C402.4.2	Envelope	The building envelope contains a continuous air barrier that is sealed in an approved manner and either constructed or tested in an approved manner. Air barrier penetrations are sealed in an approved manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Leakage	C402.4.3,C402.4.4	Envelope	Factory-built fenestration and doors are labeled as meeting air leakage requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Leakage	C402.4.1.1	Envelope	All sources of air leakage in the building thermal envelope are sealed, caulked, gasketed, weather stripped or wrapped with moisture vapor-permeable wrapping material to minimize air leakage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Leakage	C402.4.6	Envelope	Weatherseals installed on all loading dock cargo doors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Leakage	C402.4.8	Envelope	Recessed luminaires in thermal envelope to limit infiltration and be IC rated and labeled. Seal between interior finish and luminaire housing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fenestration	C303.1.3	Envelope	Fenestration products rated in accordance with NFRC.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fenestration	C303.1.3	Envelope	Fenestration products are certified as to performance labels or certificates provided.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C303.2	Envelope	Below-grade wall insulation installed per manufacturer's instructions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C303.2	Envelope	Slab edge insulation installed per manufacturer's instructions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C403.2.7,C408.2.8,C	Envelope	Exterior insulation protected against damage, sunlight, moisture, wind, landscaping and equipment maintenance activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C402.4.2.1	Envelope	Roof R-value. For some ceiling systems, verification may need to occur during Framing Inspection.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C303.2	Envelope	Roof insulation installed per manufacturer's instructions. Blown or poured loose-fill insulation is installed only where the roof slope is <=3 in 12.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C402.2.1	Envelope	Skylight curbs are insulated to the level of roofs with insulation above deck or R-5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C303.2	Envelope	Above-grade wall insulation installed per manufacturer's instructions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C303.2	Envelope	Floor insulation installed per manufacturer's instructions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C303.1	Envelope	Building envelope insulation is labeled with R-value or insulation certificate providing R-value and other relevant data.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C303.2.1	Envelope	Exterior insulation is protected from damage with a protective material. Verification for exposed foundation insulation may need to occur during Foundation Inspection.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Insulation	C402.2.1	Envelope	Insulation intended to meet the roof insulation requirements cannot be installed on top of a suspended ceiling. Mark this requirement compliant if insulation is installed accordingly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controls	C405.2.4	Exterior Lighting	Automatic lighting controls for exterior lighting installed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controls	C405.2.2.1	Interior Lighting	Automatic controls to shut off all building lighting installed in all buildings.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controls	C405.2.1.1	Interior Lighting	Independent lighting controls installed per approved lighting plans and all manual controls readily accessible and visible to occupants.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controls	C405.2.1.2	Interior Lighting	Lighting controls installed to uniformly reduce the lighting load by at least 50%.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controls	C405.2.2.3	Interior Lighting	Daylight zones provided with individual controls that control the lights independent of general area lighting.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controls	C405.2.3	Interior Lighting	Sleeping units have at least one master switch at the main entry door that controls wired luminaires and switched receptacles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controls	C405.2.2.2	Interior Lighting	Occupancy sensors installed in required spaces.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controls	C405.2.2.3	Interior Lighting	Primary sidelighted areas are equipped with required lighting controls.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controls	C405.2.2.3	Interior Lighting	Enclosed spaces with daylight area under skylights and rooftop monitors are equipped with required lighting controls.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controls	C405.2.3	Interior Lighting	Separate lighting control devices for specific uses installed per approved lighting plans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Controls	C405.3	Interior Lighting	Fluorescent luminaires within odd numbered lamp configurations that are with 10 feet center to center (if recess mounted) or are within 1 foot edge to edge (if pendant or surface mounted) shall be tandem wired.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wattage	C405.5.2	Interior Lighting	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.4.5	Mechanical	Freeze protection and snow/ice melting system sensors for future connection to controls.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.3	Mechanical	HVAC equipment efficiency verified.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Leakage	C402.4.5.1	Envelope	Stair and elevator shaft vents have motorized dampers that automatically close.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Leakage	C402.4.5.2	Envelope	Outdoor air and exhaust systems have motorized dampers that automatically shut when not in use and meet maximum leakage rates. Check gravity dampers where allowed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.8.1	Mechanical	Piping Insulation exposed to weather is protected from damage (due to sun, moisture, wind, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.7	Mechanical	HVAC ducts and plenums insulated. Where ducts or plenums are installed in or under a slab, verification may need to occur during Foundation Inspection.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.8	Mechanical	Thermally ineffective panel surfaces of sensible heating panels have insulation $\geq$ R-3.5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.7	Mechanical	Ducts and plenums sealed based on static pressure and location.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C408.2.2.1	Mechanical	Air outlets and zone terminal devices have means for air balancing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.11	Mechanical	Unenclosed spaces that are heated use only radiant heat.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.4.1	Mechanical	Heating and cooling to each zone is controlled by a thermostat control.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.4.2	Mechanical	Thermostatic controls have a 5 °F deadband.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

HVAC	C403.2.4.2	Mechanical	Temperature controls have setpoint overlap restrictions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HVAC	C403.2.4.3	Mechanical	Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.3	Mechanical	Temperature controls installed on service water heating systems (110 °F for dwelling units and lavatories in public restrooms and 90 °F for other occupancies.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.4	Mechanical	Automatic time switches installed to automatically switch off the recirculating hot-water system or heat trace.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.2	Mechanical	Heat traps installed on non-circulating storage water tanks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.3	Mechanical	PTAC and PTHP with sleeves 16 in. by 42 in. labeled for replacement only as per Footnote b to Table C403.2.3(3).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.2	Mechanical	VAV fan $\geq$ 7.5 hp are driven by mechanical or electrical variable speed drive, or driven by vane-axial with variable speed blades, or operate with motor demand $\leq$ 30% design kW at 50% design flow - calculations required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.8	Mechanical	HVAC piping insulation thickness. Where piping is installed in or under a slab, verification may need to occur during Foundation Inspection.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.7.1.3	Mechanical	Ductwork operating $>$ 3 in. water column requires air leakage testing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.3.5	Mechanical	Reduce flow in pumping systems $>$ 10 hp to multiple chillers or boilers when others are shut down.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.3.3.3	Mechanical	Two-position automatic valve interlocked to shut off water flow when hydronic heat pump with pumping system $>$ 10 hp is off.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.6	Mechanical	Condenser heat recovery system that can heat water to 85 °F or provide 60% of peak heat rejection is installed for preheating of service hot water in 24/7 facility, water cooled systems reject $>$ 6 MMBtu, SHW load $\geq$ 1 MMBtu.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.4.7	Mechanical	Hot gas bypass limited to: $\leq$ 240 kBtu/h – 50% $>$ 240 kBtu/h – 25%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.4.2	Mechanical	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.4.3.3	Mechanical	Systems include optimum start controls.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C403.2.4.1.1	Mechanical	Heat pump controls prevent supplemental electric resistance heat from coming on when not needed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.3	Mechanical	Public lavatory faucet water temperature $\leq$ 110°F.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.5	Mechanical	All piping in circulating system insulated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.5	Mechanical	First 8 ft of outlet piping is insulated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.5	Mechanical	All heat traced or externally heated piping insulated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.6	Mechanical	Controls are installed that limit the operation of a recirculation pump installed to maintain temperature of a storage tank.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.7.1	Mechanical	Pool heaters are equipped with on/off switch and no continuously burning pilot light.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.7.3	Mechanical	Vapor retardant pool covers are provided for heated pools and permanently installed spas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SYSTEM_SPECIFIC	C404.7.2	Mechanical	Time switches are installed on all pool heaters and pumps.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Testing	C408.2.3.2	Mechanical	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mandatory Additional	C406	Project	Efficient HVAC performance, efficient lighting system, or on-site supply of renewable energy consistent with what is shown the approved plans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	C402.2.8	Project	Bottom surface of floor structures incorporating radiant heating insulated to >=R-3.5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>4. To be checked by Inspector at Project Completion and Prior to Issuance of Certificate of Occupancy</b>						
Post Construction	C408.3	Exterior Lighting	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C408.2.5.1	Interior Lighting	Furnished as-built drawings for electric power systems within 30 days of system acceptance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C303.3,C408.2.5.2	Interior Lighting	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C408.3	Interior Lighting	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C408.2.5.1	Mechanical	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C303.3,C408.2.5.2	Mechanical	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C408.2.5.3	Mechanical	An air and/or hydronic system balancing report is provided for HVAC systems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C408.2.1	Mechanical	Commissioning plan developed by registered design professional or approved agency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C408.2.4	Mechanical	Preliminary commissioning report completed and certified by registered design professional or approved agency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C408.2.5.4	Mechanical	Final commissioning report due to building owner within 90 days of receipt of certificate of occupancy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C408.2.3.1	Mechanical	HVAC equipment has been tested to ensure proper operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Post Construction	C408.2.3.3	Mechanical	Economizers have been tested to ensure proper operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**EnergyGauge Summit® v5.20**  
**INPUT DATA REPORT**

**Project Information**

**Project Name:** Fire Station#16

**Orientation:** North

**Project Title:** Interior remodeling for Fire Station#16

**Building Type:** Fire Station

**Address:** 533 NE 22th Street

**Building Classification:** Renovation to existing building

**State:** FL

**No. of Stories:** 1

**Zip:** 33305

**GrossArea:** 2948 SF

**Owner:** ---

**Zones**

No	Acronym	Description	Type	Area [sf]	Multiplier	Total Area [sf]	
1	AHU/CU-1	---	CONDITIONED	1678.0	1	1678.0	<input type="checkbox"/>
2	AHU/CU-2	---	CONDITIONED	1270.0	1	1270.0	<input type="checkbox"/>

## Spaces

No	Acronym	Description	Type	Depth [ft]	Width [ft]	Height [ft]	Multiplier	Total Area [sf]	Total Volume [cf]	
<b>In Zone: AHU/CU-1</b>										
1	Meeting Rm	---	Conference/meeting (Multiple Functions)	1.00	989.00	8.50	1	989.0	8406.5	<input type="checkbox"/>
2	Kitchen	---	Food Service - Kitchen	1.00	190.00	8.50	1	190.0	1615.0	<input type="checkbox"/>
3	Bedroom area	---	Fire station Sleeping Quarters	1.00	499.00	8.50	1	499.0	4241.5	<input type="checkbox"/>
<b>In Zone: AHU/CU-2</b>										
1	Offices	---	Office - Enclosed	1.00	804.00	8.50	1	804.0	6834.0	<input type="checkbox"/>
2	Corridors	---	Corridor	1.00	306.00	8.50	1	306.0	2601.0	<input type="checkbox"/>
3	Restrooms	---	Toilet and Washroom	1.00	160.00	8.50	1	160.0	1360.0	<input type="checkbox"/>

## Lighting

No	Type	Category	No. of Luminaires	Watts per Luminaire	Power [W]	Control Type	No. of Ctrl pts	
<b>In Zone: AHU/CU-1</b>								
<b>In Space: Meeting Rm</b>								
1	Recessed Fluorescent - No vent	General Lighting	1	1160	1160	Manual On/Off	1	<input type="checkbox"/>
<b>In Space: Kitchen</b>								
1	Recessed Fluorescent - No vent	General Lighting	1	200	200	Manual On/Off	1	<input type="checkbox"/>
<b>In Space: Bedroom area</b>								
1	Recessed Fluorescent - No vent	General Lighting	1	140	140	Manual On/Off	3	<input type="checkbox"/>
<b>In Zone: AHU/CU-2</b>								
<b>In Space: Offices</b>								
1	Recessed Fluorescent - No vent	General Lighting	1	800	800	Manual On/Off	6	<input type="checkbox"/>
<b>In Space: Corridors</b>								

1	Recessed Fluorescent - No vent	General Lighting	1	200	200	Manual On/Off	1	<input type="checkbox"/>
<b>In Space: Restrooms</b>								
1	Recessed Fluorescent - No vent	General Lighting	1	160	160	Manual On/Off	1	<input type="checkbox"/>

### Walls

No	Description	Type	Width [ft]	H (Effec) [ft]	Multi plier	Area [sf]	Orientation	Conductance [Btu/hr. sf. F]	Heat Capacity [Btu/sf.F]	Dens. [lb/cf]	R-Value [h.sf.F/Btu]
<b>In Zone:</b>											

### Windows

No	Description	Orientation	Shaded	U [Btu/hr sf F]	SHGC	Vis.Tra	W [ft]	H (Effec) [ft]	Multi plier	Total Area [sf]
<b>In Zone:</b>										
<b>In Wall:</b>										
<input type="checkbox"/>										

### 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.sf.F/Btu]
<b>In Zone:</b>											
<b>In Wall:</b>											
<input type="checkbox"/>											

### 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.sf.F/Btu]
<b>In Zone:</b>											

<input type="checkbox"/>
--------------------------

### Skylights

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

### 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.sf.F/Btu]
<b>In Zone:</b>										

### Systems

<b>AHU/CU-1</b>	<b>---</b>	<b>Constant Volume Air Cooled Split System &lt; 65000 Btu/hr</b>		<b>No. Of Units</b>	<b>1</b>
<b>Component</b>	<b>Category</b>	<b>Capacity</b>	<b>Efficiency</b>	<b>IPLV</b>	<input type="checkbox"/>
1	Cooling System	54500.00	14.00	11.20	<input type="checkbox"/>
2	Heating System	24550.00	1.00		<input type="checkbox"/>
3	Air Handling System -Supply	1900.00	0.80		<input type="checkbox"/>

<b>AHU/CU-2</b>		---	<b>Constant Volume Air Cooled Split System &lt; 65000 Btu/hr</b>		<b>No. Of Units</b> 1
<b>Component</b>	<b>Category</b>		<b>Capacity</b>	<b>Efficiency</b>	<b>IPLV</b>
1	Cooling System		47500.00	14.50	11.20
2	Heating System		24550.00	1.00	
3	Air Handling System -Supply		1600.00	0.80	

<b>Plant</b>						
<b>Equipment</b>	<b>Category</b>	<b>Size</b>	<b>Inst.No</b>	<b>Eff.</b>	<b>IPLV</b>	<input type="checkbox"/>

<b>Water Heaters</b>					
<b>W-Heater Description</b>	<b>CapacityCap.Unit</b>	<b>I/P Rt.</b>	<b>Efficiency</b>	<b>Loss</b>	<input type="checkbox"/>
1 Electric water heater	50 [Gal]	5 [kW]	0.9200 [Ef]	[Btu/h]	

<b>Ext-Lighting</b>						
<b>Description</b>	<b>Category</b>	<b>No. of Luminaires</b>	<b>Watts per Luminaire</b>	<b>Area/Len/No. of units [sf/ft/No]</b>	<b>Control Type</b>	<b>Wattage [W]</b>
						<input type="checkbox"/>

<b>Piping</b>							
<b>No</b>	<b>Type</b>	<b>Operating Temperature [F]</b>	<b>Insulation Conductivity [ Btu-in/h.sf.F]</b>	<b>Nomonal pipe Diameter [in]</b>	<b>Insulation Thickness [in]</b>	<b>Is Runout?</b>	<input type="checkbox"/>
1	Heating System (Steam, Steam Condensate, & Hot Water)	110.00	0.28	0.25	1.00	No	

### Fenestration Used

Name	Glass Type	No. of Panes	Glass Conductance [Btu/h.sf.F]	SHGC	VLT
<input type="checkbox"/>					

### 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]
<input type="checkbox"/>								

### Constructs Used

No	Name	Simple Construct	Massless Construct	Conductance [Btu/h.sf.F]	Heat Capacity [Btu/sf.F]	Density [lb/cf]	RValue [h.sf.F/Btu]
<input type="checkbox"/>							
	Layer	Material No.	Material	Thickness [ft]	Framing Factor		
<input type="checkbox"/>							