RES*check* Software Version 4.6.5

Compliance Certificate

Energy Code:	**2011 Georgia State Minimum Standard Energy Code**
Location:	**Augusta, Georgia**
Construction Type:	**Single Family**
Project Type:	**New construction**
Glazing Area Percentage:	**17%**
Heating Degree Days:	**2565**
Climate Zone:	**3**

Construction Site:	Owner/Agent:	Designer/Contractor:
GA	Building Builderson	Builders Building Plans

Compliance: **Passes using UA trade-off**

Compliance: **17.9% Better Than Code** Maximum UA: **559** Your UA: **459** Maximum SHGC: **0.30** Your SHGC: **0.25**

The % Better or Worse Than Code index reflects how close to compliance the house is based on code trade-off rules.
It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Glazing or Door U-Factor	UA
Ceiling area of home forming top of insulation envelope: Flat Ceiling or Scissor Truss	1959	30.0	0.0		69
Front Wall area of home forming sides of insulation envelope: Wood Frame, 16" o.c.:Not Attic Kneewall	833	13.0	0.0		56
Window area of home using energy efficient units: Vinyl/Fiberglass Frame:Double Pane with Low-E SHGC: 0.25	111			0.300	33
Energy efficient door unit: Solid	21			0.200	4
20 minute fire door: Solid	21			0.200	4
Left Wall area of home forming sides of insulation envelope: Wood Frame, 16" o.c.:Not Attic Kneewall	41	13.0	0.0		3
Back Wall area of home forming sides of insulation envelope: Wood Frame, 16" o.c.:Not Attic Kneewall	833	13.0	0.0		48
Window area of home using energy efficient units copy 1: Vinyl/Fiberglass Frame:Double Pane with Low-E SHGC: 0.25	231			0.300	69
Energy efficient door unit: Glass SHGC: 0.25	21			0.300	6
Right Wall area of home forming sides of insulation envelope: Wood Frame, 16" o.c.:Not Attic Kneewall	799	13.0	0.0		61
Window area of home using energy efficient units: Vinyl/Fiberglass Frame:Double Pane with Low-E SHGC: 0.25	51			0.300	15
Slab perimeter of home forming bottom of insulation envelope: Slab-On-Grade:Unheated Insulation depth: 0.0'	87		0.0		91

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2011 Georgia State Minimum Standard Energy Code requirements in RES*check* Version 4.6.5 and to comply with the mandatory requirements listed in the RES*check* Inspection Checklist.

Name - Title _____ Signature _____ Date _____

RES*check* Software Version 4.6.5
Inspection Checklist

Energy Code:	**2011 Georgia State Minimum Standard Energy Code**
Location:	**Augusta, Georgia**
Construction Type:	**Single Family**
Project Type:	**New construction**
Glazing Area Percentage:	**17%**
Heating Degree Days:	**2565**
Climate Zone:	**3**

Ceilings:

❑ Ceiling area of home forming top of insulation envelope: Flat Ceiling or Scissor Truss, R-30.0 cavity insulation
Comments: _____

Above-Grade Walls:

❑ Front Wall area of home forming sides of insulation envelope: Wood Frame, 16" o.c.:Not Attic Kneewall, R-13.0 cavity insulation
Comments: _____

❑ Left Wall area of home forming sides of insulation envelope: Wood Frame, 16" o.c.:Not Attic Kneewall, R-13.0 cavity insulation
Comments: _____

❑ Back Wall area of home forming sides of insulation envelope: Wood Frame, 16" o.c.:Not Attic Kneewall, R-13.0 cavity insulation
Comments: _____

❑ Right Wall area of home forming sides of insulation envelope: Wood Frame, 16" o.c.:Not Attic Kneewall, R-13.0 cavity insulation
Comments: _____

Windows:

❑ Window area of home using energy efficient units: Vinyl/Fiberglass Frame:Double Pane with Low-E, U-factor: 0.300, SHGC: 0.25,
For windows without labeled U-factors, describe features:
#Panes ____ Frame Type _____ Thermal Break? ____ Yes ____ No
Comments: _____

❑ Window area of home using energy efficient units copy 1: Vinyl/Fiberglass Frame:Double Pane with Low-E, U-factor: 0.300, SHGC: 0.25,
For windows without labeled U-factors, describe features:
#Panes ____ Frame Type _____ Thermal Break? ____ Yes ____ No
Comments: _____

❑ Window area of home using energy efficient units: Vinyl/Fiberglass Frame:Double Pane with Low-E, U-factor: 0.300, SHGC: 0.25,
For windows without labeled U-factors, describe features:
#Panes ____ Frame Type _____ Thermal Break? ____ Yes ____ No
Comments: _____

Doors:

❑ Energy efficient door unit: Solid, U-factor: 0.200
Comments: _____

❑ 20 minute fire door: Solid, U-factor: 0.200
Comments: _____

❑ Energy efficient door unit: Glass, U-factor: 0.300, SHGC: 0.25,
Comments: _____

Floors:

❑ Slab perimeter of home forming bottom of insulation envelope: Slab-On-Grade:Unheated, R-0 (uninsulated)
Comments: _____

Solar Heat Gain Coefficient:

❑ Solar Heat Gain Coefficient (SHGC) values are determined in accordance with the NFRC test procedure or taken from the default table.

Air Leakage:

❑ Joints (including rim joist junctions), attic access openings, penetrations, and all other such openings in the building envelope that are sources of air leakage are sealed with caulk, gasketed, weatherstripped or otherwise sealed with an air barrier material, suitable film or solid material.

❑ Air barrier and sealing exists on common walls between dwelling units, on exterior walls behind tubs/showers, and in openings between window/door jambs and framing.

❑ Recessed lights in the building thermal envelope are 1) type IC rated and ASTM E283 labeled and 2) sealed with a gasket or caulk between the housing and the interior wall or ceiling covering.

❑ Access doors separating conditioned from unconditioned space (e.g., attic, unconditioned basements and crawlspaces) are weather-stripped and insulated (without insulation compression or damage). Where loose fill insulation exists, a wood framed or equivalent baffle is installed to maintain insulation application. Required insulation values are as follows:

(1) Hinged vertical doors have a maximum U-Factor of U-0.2 (R-5 minimum)

(2) Hatches/scuttle hole covers have a maximum U-Factor U-0.05 (R-19 minimum)

(3) Pull down stairs have a maximum U-Factor of U-0.20 with a minimum of 75 percent of the panel area having R-5 minimum insulation

❑ Where air permeable insulation exists in vented attics, baffles are installed adjacent to soffit and eave vents. A minimum of a 1-inch of space is provided between the insulation and the roof sheathing and at the location of the vent. The baffle extends over the top of the insulation inward until it is at least 4 inches vertically above the top of the insulation.

❑ Masonry, site-built fireplaces have gasketed doors and outdoor combustion air.

❑ Automatic or gravity dampers are installed on all outdoor air intakes and exhausts.

Air Sealing and Insulation:

❑ Building envelope air tightness complies with a post construction blower door test result of less than 7 ACH at 50 Pascals. Test conducted by a certified Duct and Envelope Tightness (DET) verifier.

Materials Identification and Installation:

❑ Materials and equipment are installed in accordance with the manufacturer's installation instructions.

❑ Materials and equipment are identified so that compliance can be determined.

❑ Manufacturer manuals for all installed heating and cooling equipment and service water heating equipment have been provided.

❑ Insulation R-values, glazing U-factors, and water heating equipment efficiency are clearly marked on the building plans or specifications.

Duct Insulation:

❑ Supply ducts in attics are insulated to a minimum of R-8. All other ducts in unconditioned spaces or outside the building envelope are insulated to at least R-6.

Duct Construction and Testing:

❑ Building framing cavities are not used as supply or return ducts. All supply and return ducts are lined with metal, flex duct, ductboard or other material approved in section M1601 of the IRC.

❑ Without exception all closure systems have mastic applied that is at least 2 mm (0.08 inches) thick. All joints and seams of air ducts, air handlers, filter boxes are substantially airtight by means of tapes, mastics, liquid sealants, gasketing or other approved closure systems. Tapes, mastics, and fasteners are rated UL 181A or UL 181B#and are labeled according to the duct construction. Metal duct connections with equipment and/or fittings are mechanically fastened. Crimp joints for round metal ducts have a contact lap of at least 1 1/2 inches and are fastened with a minimum of three equally spaced sheet-metal screws.
Exceptions:

Joint and seams covered with spray polyurethane foam and mastic.

Where a partially inaccessible duct connection exists, mechanical fasteners can be equally spaced on the exposed portion of the joint so as to prevent a hinge effect.

Continuously welded and locking-type longitudinal joints and seams on ducts operating at less than 2 in. w.g. (500 Pa).

❑ Duct tightness test has been performed by a certified DET verifier and meets one of the following test criteria when tested at 0.1 inches w.g. (25 Pascals):

(1) Rough-in total leakage test (RIT) with air handler installed: Less than or equal to 225.3 cfm (6 cfm per 100 ft2 of conditioned floor area).

(2) Postconstruction total leakage test (PCT; including air handler enclosure): Less than or equal to 450.6 cfm (12 cfm per 100 ft2 of conditioned floor area).

(3) Postconstruction leakage to outdoors test (PCO): Less than or equal to 300.4 cfm (8 cfm per 100 ft2 of conditioned floor area).

Temperature Controls:

- ❑ Where the primary heating system is a forced air-furnace, at least one programmable thermostat is installed to control the primary heating system and has set-points initialized at 70 degree F for the heating cycle and 78 degree F for the cooling cycle.
- ❑ Heat pumps having supplementary electric-resistance heat have controls that prevent supplemental heat operation when the compressor can meet the heating load.

Heating and Cooling Equipment Sizing:

- ❑ Additional requirements for equipment sizing are included by an inspection for compliance with the International Residential Code.
- ❑ For systems serving multiple dwelling units documentation has been submitted demonstrating compliance with 2009 IECC Commercial Building Mechanical and/or Service Water Heating (Sections 503 and 504).

Circulating Service Hot Water Systems:

- ❑ Circulating service hot water pipes are insulated to R-2.
- ❑ Circulating service hot water systems include an automatic or accessible manual switch to turn off the circulating pump when the system is not in use.

Heating and Cooling Piping Insulation:

- ❑ HVAC piping conveying fluids above 105 degrees F or chilled fluids below 55 degrees F are insulated to R-3.

Swimming Pools:

- ❑ Heated swimming pools have an on/off heater switch.
- ❑ Pool heaters operating on natural gas or LPG have an electronic pilot light.
- ❑ Timer switches on pool heaters and pumps are present.
  Exceptions:

  Where public health standards require continuous pump operation.

  Where pumps operate within solar- and/or waste-heat-recovery systems.
- ❑ Heated swimming pools have a cover on or at the water surface. For pools heated over 90 degrees F (32 degrees C) the cover has a minimum insulation value of R-12.
  Exceptions:

  Covers are not required when 60% of the heating energy is from site-recovered energy or solar energy source.

Lighting, Power, Mechanical Requirements:

- ❑ A minimum of 50 percent of the lamps in permanently installed lighting fixtures are controlled with an occupancy/vacancy sensor or automated lighting control system, or can be categorized as one of the following:

  (a) Compact fluorescent

  (b) T-8 or smaller diameter linear fluorescent

  (c) 40 lumens per watt for lamp wattage <= 15

  (d) 50 lumens per watt for lamp wattage > 15 and <= 40

  (e) 60 lumens per watt for lamp wattage > 40
- ❑ Power attic ventilators are not permitted to be connected to the electric grid. Solar-powered attic ventilators are allowed.
- ❑ Central HVAC system does not use electric resistance as the primary heat source.
  Exceptions:

  Alterations of 50% or less of the original conditioned floor area in dwellings originally permitted after January 1, 1996.

  Alterations to dwellings originally permitted before January 1, 1996.

Other Requirements:

- ❑ Snow- and ice-melting systems with energy supplied from the service to a building shall include automatic controls capable of shutting off the system when a) the pavement temperature is above 50 degrees F, b) no precipitation is falling, and c) the outdoor temperature is above 40 degrees F (a manual shutoff control is also permitted to satisfy requirement 'c').

Certificate:

- ❑ A permanent certificate is provided on or in the electrical distribution panel or air handler listing the predominant insulation R-values; window U-factors; type and efficiency of space-conditioning and water heating equipment. . The certificate shall also list the calculated heating load, sensible cooling load, latent cooling load and cfm for space conditioning the duct tightness and envelope tightness test results. Buildings classified as R-2 occupancy shall indicate that the visual inspection option was used or provide envelope tightness test results. The certificate does not cover or obstruct the visibility of the circuit directory label, service disconnect label or other required labels.

NOTES TO FIELD: (Building Department Use Only)

2011 Georgia State Minimum Energy Code

Insulation Rating	R-Value
Ceiling / Roof	30.00
Above-Grade Wall	13.00
Below-Grade Wall	0.00
Floor	0.00
Ductwork (unconditioned spaces):	_____

Glass & Door Rating	U-Factor	SHGC
Window	0.30	0.25
Door	0.20	0.25

Envelope Tightness Test Results	
CFM_{50}	_____
Total Conditioned Volume	_____
ACH_{50}	_____
DET Verifer (Name/Phone)	_____

Heating & Cooling Equipment	Efficiency
Heating System:_____	_____
Cooling System:_____	_____
Water Heater:_____	_____

HVAC Loads	
Heating Load	_____
Sensible Cooling Load	_____
Latent Cooling Load	_____
Total Air Handler CFM	_____
Load Calcs by (Name/Phone)	_____

Duct Tightness Test Results	
Test Type (PCO, PCT, RIT)	_____
CFM_{25}	_____
Floor Area Served (s.f.)	_____
Test Result(%)	_____
DET Verifer (Name/Phone)	_____

Builder/Design Professional: _____ **Date:** _____

Comments: