


2024 IECC  
Cost Analysis for  
GA DCA





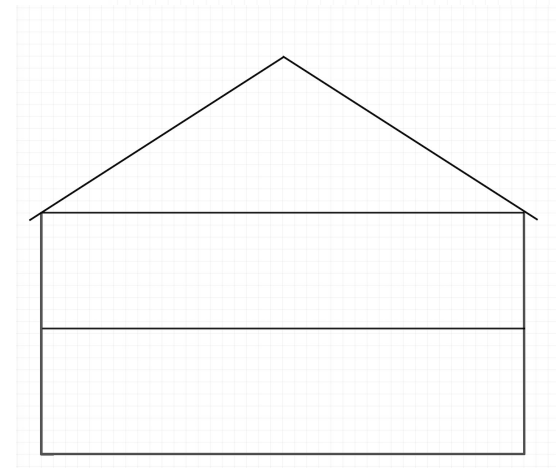
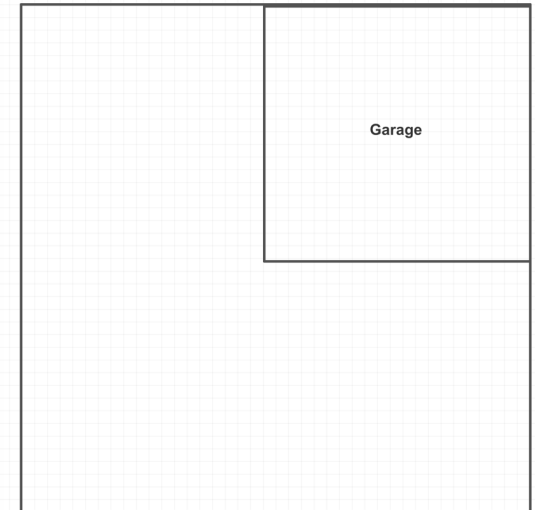
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BS representative

Introduction



## Sample House (model for entry level homes)

- 2800 HSF / 400 SF garage
- 40'x40' slab
- 320 LF of exterior walls
- 25 window/door openings ~450SF
- 9' 1st floor / 8' 2<sup>nd</sup> floor
- 2750 SF of insulated area of exterior walls
- 8/12 roof pitch
- 2600 SF of insulated area of roof/gable (attic)
  - 1600 SF insulated area if using blown in over ceiling



## Current code standard wall assembly

- 2x4 plates
- 2x4 studs 16" oc
- Double 2x8 headers
- R13 batts

Material	Qty	Current Rate	Cost
2x4x9' stud	170	\$ 3.40	\$ 578.00
2x4x16' plate	60	\$ 6.00	\$ 360.00
2x4x8' stud	170	\$ 3.00	\$ 510.00
2x8x12' header	18	\$ 9.00	\$ 162.00
			\$ 1,610.00
R13 Batts	2750	\$ 0.45	\$ 1,237.50

- **\$2,847.50 material cost**



**Conventional  
Framing  
25-30% F.F.**

# High Performance wall assembly

- 2x6 plates
- 2x6 studs at corners and openings
- 2x4 studs 12" oc staggered in rest of walls
- Single 2x10 headers
- R19 batts

Material	Qty	Current Rate	Cost
2x4x9' stud	160	\$ 3.40	\$ 544.00
2x6x9' stud	50	\$ 5.50	\$ 275.00
2x6x16' plate	60	\$ 7.00	\$ 420.00
2x4x8' stud	160	\$ 3.00	\$ 480.00
2x6x8' stud	50	\$ 4.70	\$ 235.00
2x10x12'	9	\$ 10.00	\$ 90.00
Added labor	2800	\$ 0.25	\$ 700.00
			\$ 2,744.00
R19 batts	2750	\$ 0.60	\$ 1,650.00

• **\$4394 material cost**



**Staggered Stud  
Framing  
12% F.F.**

## HVAC Impact

- 14 SEER 4 ton split system equipment cost \$3155
- vs
- 14 SEER 3 ton split system equipment cost \$2460
- or
- 14 SEER 3 ton all electric, variable speed blower equipment cost \$2614

## Energy and power bill impact

- Average starter home in GA uses ~15,000 kWh a year
- Per GA Power, average price is ~15.5cents per kWh
- \$2,325 average energy bills a year
- Conservative estimate of 10% energy savings with upgraded wall assembly and HVAC noted above would reduce an average home by 1500 kWh (\$232.50) per year.
- An estimated 50,000 new homes a year in GA that this would impact would combine to use 75m less kWh.

Total added cost = \$1,005  
(~.5% of total construction costs)  
For an entry level 2800 SF house. Smaller homes  
would have less cost impact.

4 year return from energy bill savings  
At least  $\frac{3}{4}$  of a gigawatt of electricity per year  
statewide made available to the grid

Allan Merrill (Beazer Homes CEO): "If a publicly traded builder with a national footprint can deliver Zero Energy Ready homes at scale, the industry can no longer argue that it's impossible—only that it's unwilling."

# Everyone can build towards ZERH

Example house	2800 HSF	2 story on slab	
	~40'x40' footprint including 2 car garage	25 window/door openings totalling ~450 SF	9' first floor 8' second floor
	2750 insulatable exterior walls (3200-450)	8/12 pitch roof with gabled ends ~2600 insulatable roof and gables (25 x 40 (2) + 40 x 14 x.5 (2))	

Construction item	Conventional method	Material	Qty
Exterior Wall Framing	2x4 16" oc	2x4x9' stud	170
		2x4x16' plate	60
		2x4x8' stud	170
		2x8x12' header	18
		<b>Subtotal</b>	
2x6 wall with staggered 2x4 studs 12" oc		2x4x9' stud	160
		2x6x9' stud	50
		2x6x16' plate	60
		2x4x8' stud	160
		2x6x8' stud	50
		2x8x12' header	18
		Added labor	2800
		<b>Subtotal</b>	
Double 2x4 wall with 1/2" air gap 16" oc		2x4x9' stud	340
		2x4x16' plate	120
		2x4x8' stud	340
		2x8x12' header	18
		Added labor	2800
		<b>Subtotal</b>	
Alternative for any of the above with single ply headers		2x10x12'	9

Exterior wall sheathing and vapor barrier	OSB with housewrap	4x8 OSB	120
		9' roll of housewrap installed	3
	<b>Subtotal</b>		
	Zip	4x8 Zip	120
		Rolls of 4" zip tape installed	18
	<b>Subtotal</b>		
Wall insulation	R13 Batts		2750
	R19 batts		2750
	R21 OSF		2750
Attic insulation	R38 blown		1400
	R21 OSF		2600
HVAC	14 SEER 4 ton split system	Equipment cost only	1
	14 SEER 3 ton all electric, variable speed	Equipment cost only	1
	19 SEER 3 ton all electric, variable speed	Equipment cost only	1

	Array	Cost		Monthly mortgage increase on a 30 yr fixed at 6%
Solar panels to achieve net zero without net metering	~25 or a 10 kWh array	\$ 30,000.00	\$	180.00
Solar panels to achieve net zero with net metering	~20 or an 8 kWh array	\$ 24,000.00	\$	144.00

Performance standard

Framing only

Difference

Includes lumber, sheathing, weather barrier, insulation, framing and sealing labor, insulation and HVAC equipment

Difference

Current Rate	Cost
\$ 3.40	\$ 578.00
\$ 6.00	\$ 360.00
\$ 3.00	\$ 510.00
\$ 9.00	\$ 162.00
	\$ 1,610.00

\$ 3.40	\$ 544.00
\$ 5.50	\$ 275.00
\$ 7.00	\$ 420.00
\$ 3.00	\$ 480.00
\$ 4.70	\$ 235.00
\$ 9.00	\$ 162.00
\$ 0.25	\$ 700.00
	\$ 2,816.00

\$ 3.40	\$ 1,156.00
\$ 6.00	\$ 720.00
\$ 3.00	\$ 1,020.00
\$ 9.00	\$ 162.00
\$ 0.25	\$ 700.00
	\$ 3,758.00

\$ 10.00	\$ 90.00
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\$ 8.30 \$ 996.00

\$ 700.00 \$ 2,100.00

\$ 3,096.00

\$ 22.50 \$ 2,700.00

\$ 75.00 \$ 1,350.00

\$ 4,050.00

\$ 0.45 \$ 1,237.50

\$ 0.60 \$ 1,650.00

\$ 1.70 \$ 4,675.00

\$ -

\$ 0.55 \$ 770.00

\$ 1.70 \$ 4,420.00

\$ -

\$ 3,155.00 \$ 3,155.00

\$ 2,614.00 \$ 2,614.00

\$ 4,232.00 \$ 4,232.00

Average

Atlanta  
power bills      Difference in  
monthly bills

\$ 168.00 \$ 12.00

\$ 168.00 \$ (24.00)

Code minimum	Middle ground	High Performance
\$ 4,706.00	\$ 5,660.00	\$ 6,866.00
	\$ 954.00	\$ 2,160.00

\$ 9,868.50 \$ 14,596.00 \$ 15,773.00

\$ 4,727.50 \$ 5,904.50