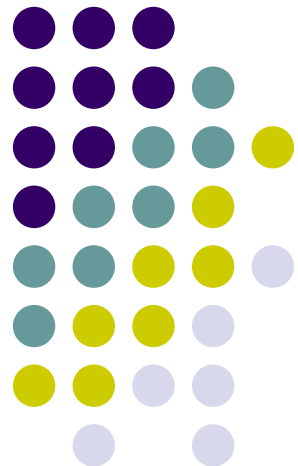
Making the Grade

Real Life Examples of Meeting the Threshold for the Federal Tax Credit



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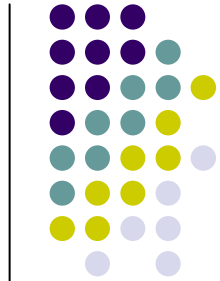

- What will it take for a builder to meet the 50% threshold of the federal tax credit for energy efficient homes? This session will provide real life cases of homes that have met the tax credit in regions across the nation.

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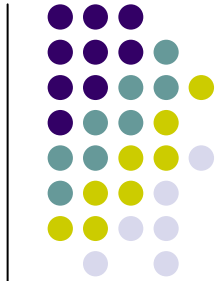


- Location- Ames IA
- Builder- HCS Builders
- Rater- MICA
- Home Size- 2554 sq ft
- Foundation- Cond Base
- Insulation- R 10
- Duct Location- Cond space
- Duct Testing- 118cfm@25

- Air Leakage- 912cfm@50
- Ventilation- Balanced
- Windows- .34/.35
- Window to Wall 19%
- Air Conditioner- 10 SEER
- Heater- 93% AFUE
- Walls- R 19
- Ceiling- R46

- Normalized En Consumption
  Target 36.8 As Designed 32.6

- Envelope Loads
  Target 55.7 As Designed 37.5

Making the Grade

- Location- North Vernon IN
- Builder- Vogel Builders
- Rater- EEH Midwest, Inc
- Home Size- 8741 sq ft
- Foundation- Base/crawl
- Insulation- R 10
- Duct Location- Cond space
- Duct Testing- 0cfm@25

- Air Leakage- 2000cfm@50
- Ventilation- None
- Windows- .33/.33
- Window to Wall 20%
- Air Conditioner- 24.9 EER
- Heater- 4.6 cop
- Walls- R19 R5
- Ceiling- R74

- Normalized En Consump
  Target 53.7 As Design 37.5

- Envelope Loads
  Target 167 As Design117.3

Making the Grade

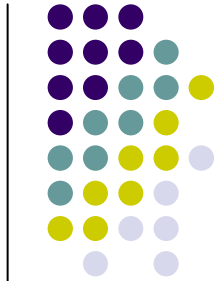
- Location- Seymour IN
- Builder- Vogel Builders
- Rater- EEH Midwest, Inc
- Home Size- 2875 sq ft
- Foundation- Cond crawl
- Insulation- R 10
- Duct Location- 50/50
- Duct Testing- 16cfm@25

- Air Leakage- 1250cfm@50
- Ventilation- None
- Windows- .33/.33
- Window to Wall 10%
- Air Conditioner- 12.3 SEER
- Heater- 92.7 AFUE
- Walls- R13 R5
- Ceiling- R74

- Normalized En Consumption
  Target 42.3 As Designed 38.8

- Envelope Loads
  Target 72.5 As Designed 51.1

Making the Grade



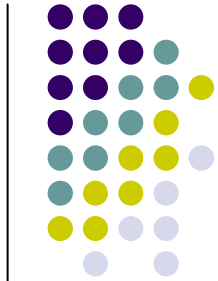
- Location- Fort Wayne IN
- Builder- Lancia Homes
- Rater- Energy Diagnostics
- Home Size- 2083 sq ft
- Foundation- Slab
- Insulation- R 10 per
- Duct Location- 100s cond 50cond/10at ex /40at un
- Duct Testing- 50cfm@25

- Air Leakage- 991cfm@50
- Ventilation- None
- Windows- .29/.30
- Window to Wall 7%
- Air Conditioner- 13 SEER
- Heater- 92.5 AFUE
- Walls- R13 R3.3
- Ceiling- R45

- Normalized En Consumption
  Target 45.5 As Designed 43.2

- Envelope Loads
  Target 63.4 As Designed 45.2

Making the Grade



- Location- Columbia City IN
- Builder- Delagrange Inc
- Rater- Energy Diagnostics
- Home Size- 3953 sq ft
- Foundation- Cond Base
- Insulation- R 11 finished
- Duct Location- Cond space
- Duct Testing- 163cfm@25

- Air Leakage- 1263cfm@50
- Ventilation- None
- Windows- .34/.31
- Window to Wall 20%
- Air Conditioner- 16 EER
- Heater- 4.3 COP
- Walls- R13 R5.6
- Ceiling- R38

- Normalized En Consumption
  Target 34.3 As Designed 21.4

- Envelope Loads
  Target 89.6 As Designed 80.4

BEAZER TAX CREDIT SCENARIOS

This spreadsheet seeks to demonstrate what upgrades are necessary for various BEAZER models to meet the new homes tax credit level.

Model Name	Sq Feet	Floor Insul.	Windows	Glass to Wall	Attic Insul.	Furnace	A/C	Duct Leakage @ 25 Pa	Total Leakage @ 50 Pa	Target Score	Actual Score
VOYAGER II	1105	R-30	.32 U-Value .30 SHGC	9%	R-50	96 AFUE	14 SEER	0	700	22.4	21.9
REDSTONE IV	1250	R-30	.32 U-Value .30 SHGC	10%	R-50	96 AFUE	14 SEER	0	700	24.4	24
KESSLER	1440	R-30	.32 U-Value .30 SHGC	9%	R-50	96 AFUE	14 SEER	0	600	27.8	27.3
SALISBURY	1563	R-30	.32 U-Value .30 SHGC	8%	R-50	96 AFUE	14 SEER	0	1000	30.4	28
NORFOLK	1667	R-30	.32 U-Value .30 SHGC	8%	R-50	96 AFUE	14 SEER	0	1000	35.1	34.4
BENTLEY	1889	R-30	.32 U-Value .30 SHGC	9%	R-50	96 AFUE	14 SEER	0	1200	40.4	40.2
ASHLAND	1934	R-30	.32 U-Value .30 SHGC	10%	R-50	96 AFUE	14 SEER	0	1400	37.6	37.2
INDEPENDENCE	2287	R-30	.32 U-Value .30 SHGC	12%	R-50	96 AFUE	14 SEER	0	1400	43	40.2

Most Important Upgrades:

Windows

BEAZER currentely uses windows that have a.32 U-Value and a .30 SHGC. No upgrade is needed.

Furnace

BEAZER currentely uses furnaces that are 80 AFUE. A 96 AFUE is needed to pass.

A/C

BEAZER currentely uses a 10 SEER air conditioner. 13 SEER air conditioners will soon be the minumim SEER available for purchase, and a 14 SEER is needed to reach the tax credit level.

Ceiling Insulation

BEAZER currently uses R-38 ceiling insulation. R-50 is needed to acheive

Duct Leakage @ 25 Pascals of pressure

Duct leakage here refers to leakage outside the building through the duct work system. BEAZER houses currentely have varying levels of leakage, but on average are too leaky to pass the tax credit level.Extra care needs to be taken to ensure 0 duct leakage.

Total Leakage @ 50 Pascals of pressure

Total leakage refers to air leakage outside the building through any part of the house. BEAZER houses currentely have varying levels of leakage, but on average come close to passing the tax credit level. A thorough air sealing of the building package would allow BEAZER houses to pass the tax credit.

Glass to Wall Ratio

If more glass is added to the house, the tax credit may not be able to be achieved.

Corners and Kneewalls

OSB can be applied to the corners to meet the tax creidt. R-3 should be applied to kneewalls.

Slab Insulation

All slabs need to be insulated to R10 2ft down perimeter and 2 ft under

Mechanical Ventilation