
BUILDING FILE REPORT

File Name: Legacy Home - Habitat for Humanity 10-07-09

Date: October 07, 2009

Property/Builder:**Rating**

Building Name:	Legacy	Org. Name:	Energy Inspectors
Owner's Name:	Habitat for Humanity	Address:	8515 Edna Avenue, Suite 210
Property Address:		City, St, Zip:	Las Vegas, NV 89117
City, St, Zip:	Phoenix, AZ 85004	Phone No:	(702) 365-8080
Phone No:		Website:	www.energyinspectors.com
Builder's Name:	Habitat for Humanity	Rater's Name:	Steve Cheney
Phone No:	(602) 739-0265	Rater's Email:	info@energyinspectors.com
Email Address:		Rater's No.:	1998-055-EI-005
Model:	Legacy Home	Rating Date:	8-19-09
Development:		Rating Type:	Projected Rating
		Reason:	New Home
		Rating No.:	1998-055-HFH-Legacy

General Building Information

Area of Cond. Space(sq ft):	1325
Volume of Cond. Space:	10600
Year Built:	2009
Housing Type:	Single-family detached
Level Type(Apartments Only):	None
Floors on or Above-Grade:	1
Number of Bedrooms:	3
Foundation Type:	Slab
Enclosed Crawl Space Type:	N/A

Slab Floor Info:

1

Name	Slab
Library Type	Uninsulated
Area(sq ft)	1325
Depth Below Grade(ft)	0.0
Full Perimeter(ft)	118
Exposed Perimeter(ft)	92
On-Grade Perimeter(ft)	92

BUILDING FILE REPORT

Slab Floor: Uninsulated

Slab Covering	Carpet
Perimeter Insulation (R-Value):	0.0
Perimeter Insulation Depth (ft):	0.0
Under-Slab Insulation (R-Value):	0.0
Under-Slab Insulation Width (ft):	0.0
Slab Insulation Grade:	1
Radiant Slab:	No
Note:	

Above-Grade Wall:	1	2	3
Name	Front Wall	Left Wall	Back Wall
Library Type	SIP 6" with R5 Lath	SIP 6" with R5 Lath	SIP 6" with R5 Lath
Gross Area(sq ft)	104.00	325.30	281.30
Exterior Color	Medium	Medium	Medium
Location	Cond -> ambient	Cond -> ambient	Cond -> ambient
Uo Value	0.033	0.033	0.033

Above-Grade Wall:	4	5
Name	Right Wall	Garage Wall
Library Type	SIP 6" with R5 Lath	SIP 6"
Gross Area(sq ft)	349.30	201.00
Exterior Color	Medium	Medium
Location	Cond -> ambient	Cond -> garage
Uo Value	0.033	0.040

BUILDING FILE REPORT

Above-Grade Wall: SIP 6" with R5 Lath

Quick Fill not used.

Note:

Layers	Paths
	SIP
Inside Air Film	0.680
Gyp board	0.450
Air Gap/Frm	1.030
Continuous ins	22.000
Ext Finish	0.940
Lath Exterior	5.000
	0.000
Outside Air Film	0.170
Total R-Value	30.270
U-Value	0.033
Relative Area	1.000
UA	0.033

Total Component UA: 0.033

Total Component Area: 1.0

Component Uo: 0.033

BUILDING FILE REPORT

Above-Grade Wall: SIP 6"

Quick Fill not used.

Note:

Layers	Paths	
	SIP	
Inside Air Film		0.680
Gyp board		0.450
Air Gap/Frm		1.030
Continuous ins		22.000
Ext Finish		0.940
		0.000
		0.000
Outside Air Film		0.170
Total R-Value		25.270
U-Value		0.040
Relative Area		1.000
UA		0.040

Total Component UA: 0.040

Total Component Area: 1.0

Component Uo: 0.040

BUILDING FILE REPORT

Window Information:	1	2	3
Name	4040xo	4040xo	4040xo
Library Type	0.32/0.30	0.32/0.30	0.32/0.30
U-Value	0.320	0.320	0.320
SHGC	0.300	0.300	0.300
Area(sq ft)	16.00	16.00	16.00
Orientation	East	South	South
Overhang Depth	8.0	2.0	2.0
Overhang To Top	1.0	1.0	1.0
Overhang To Bottom	5.0	5.0	5.0
Interior Winter Shading	0.85	0.85	0.85
Interior Summer Shading	0.70	0.70	0.70
Adjacent Winter Shading	None	None	None
Adjacent Summer Shading	None	None	None
Wall Assignment	AGWall 1	AGWall 2	AGWall 2

Window Information:	4	5	6
Name	4040xo	3030xo	4040xo
Library Type	0.32/0.30	0.32/0.30	0.32/0.30
U-Value	0.320	0.320	0.320
SHGC	0.300	0.300	0.300
Area(sq ft)	16.00	9.00	16.00
Orientation	West	West	North
Overhang Depth	2.0	9.0	2.0
Overhang To Top	1.0	2.0	1.0
Overhang To Bottom	5.0	5.0	5.0
Interior Winter Shading	0.85	0.85	0.85
Interior Summer Shading	0.70	0.70	0.70
Adjacent Winter Shading	None	None	None
Adjacent Summer Shading	None	None	None
Wall Assignment	AGWall 3	AGWall 3	AGWall 4

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Window Information:	7	8	
Name	4040xo	4040xo	
Library Type	0.32/0.30	0.32/0.30	
U-Value	0.320	0.320	
SHGC	0.300	0.300	
Area(sq ft)	16.00	16.00	
Orientation	North	North	
Overhang Depth	2.0	2.0	
Overhang To Top	1.0	1.0	
Overhang To Bottom	5.0	5.0	
Interior Winter Shading	0.85	0.85	
Interior Summer Shading	0.70	0.70	
Adjacent Winter Shading	None	None	
Adjacent Summer Shading	None	None	
Wall Assignment	AGWall 4	AGWall 4	

Window: 0.32/0.30

U-Value: 0.320
 Solar Heat Gain Coefficient: 0.300
 Note:

Door Information:	1	2	3
Name	Entry Door	Patio Door	Garage Door
Opaque Area(sq ft)	20.0	20.0	20.0
Library Type	Steel-polyureth-R6	Steel-polyureth-R6	Steel-polyureth-R6
Wall Assignment	AGWall 1	AGWall 3	AGWall 5
Uo Value	0.144	0.144	0.144

Door: Steel-polyureth-R6

R-Value of Opaque Area: 6.0
 Storm Door: No
 Note:

Roof Information:	1		
Name	Ceiling Area		
Library Type	R-22 Icynene		
Gross Area(sq ft)	1391.00		
Color	Medium		
Radiant Barrier	No		
Type(Attic)	Vaulted		
Uo Value	0.052		

BUILDING FILE REPORT

Ceiling: R-22 Icynene

Information From Quick Fill Screen:

Continous Insulation (R-Value)	0.0
Cavity Insulation (R-Value)	22.0
Cavity Insulation Thickness (in)	3.5
Cavity Insulation Grade	1.0
Gypsum Thickness (in)	0.500
Bottom Chord/Rafter Size(w x h, in)	1.5 x 3.5
Bottom Chord/Rafter Spacing (in o.c.)	24.0
Framing Factor - (default)	0.1100
Ceiling Type	Vaulted

Note:

Layers	Paths		
	Framing	Cavity	Grade
Inside Air Film	0.610	0.610	0.610
Gyp board	0.450	0.450	0.450
Cavity Ins/Frm	4.375	22.000	0.000
Continuous ins	0.000	0.000	0.000
Plywood	0.930	0.930	0.930
Shingles	0.400	0.400	0.400
	0.000	0.000	0.000
Outside Air Film	0.170	0.170	0.170
Total R-Value	6.935	24.560	2.560
U-Value	0.144	0.041	0.391
Relative Area	0.110	0.890	0.000
UA	0.016	0.036	0.000

Total Component UA: 0.052

Total Component Area: 1.0

Component Uo: 0.052

BUILDING FILE REPORT

Mechanical Equipment: General

Number of Mechanical Systems:	2
Heating SetPoint(F):	68.00
Heating Setback Thermostat:	Present
Cooling SetPoint(F):	78.00
Cooling Setup Thermostat:	Present

ASHP: 36k 17seer 8hspf

Fuel Type:	Electric
Heating Seasonal Efficiency:	8.00 HSPF
Compressor Heating Output Capacity (kBtuh):	36.0
Electric Resistance Backup Capacity (kW):	0
Cooling Output Capacity (kBtuh):	36.0
Cooling Seasonal Efficiency:	17.00 SEER
Desuperheater:	No
Note:	
Location:	Conditioned area
Performance Adjustment:	100
% Heating Load Served:	100
% Cooling Load Served:	100
Number Of Units:	1

Water Heating Equipment: 80 gal. 0.93EF Elect

Water Heater Type:	Integrated
Fuel Type:	Electric
Energy Factor:	0.93
Recovery Efficiency:	0.93
Water Tank Size (gallons):	80
Extra Tank Insulation (R-Value):	0.0
Note:	
Location:	Conditioned area
Percent Load Served:	100
Performance Adjustment:	100
Number Of Units:	1

Duct System Information:

Name Duct System
 Heating System 36k 17seer 8hspf
 Cooling System 36k 17seer 8hspf
 Supply Area(sq ft) 357.8
 Return Area(sq ft) 66.3
 # of Registers 1
Duct Leakage
 Qualitative Assessment - Not Applicable
 Total Duct Leakage: 0.00 CFM @ 25 Pascals
 Supply Duct Leakage - Not Applicable
 Return Duct Leakage - Not Applicable
 Duct Tightness Test: Postconstruction Test

Duct Information:	1	2	
Type	Supply		Return
Percent Area	100.0		100.0
R-Value	6.0		6.0
Location	Conditioned space		Conditioned space

Infiltration and Mechanical Ventilation

Whole House Infiltration

Measurement Type: Blower door test
 Heating Season Infiltration Value: 0.35 Natural ACH
 Cooling Season Infiltration Value: 0.35 Natural ACH
 2009 IECC Verification: Tested

Mechanical Ventilation for IAQ

Type: None
 Rate(cfm): 0
 Sensible Recovery Efficiency(%): 0.00
 Total Recovery Efficiency(%): 0.00
 Hours per Day: 24.00
 Fan Power (watts): 0.00

Ventilation Strategy for Cooling

Cooling Season Ventilation: Natural Ventilation

Lights and Appliances

Simplified Audit
 Oven/Range Fuel Type: Electric
 Clothes Dryer Fuel Type: Electric
 Percent Fluorescent - Pin-Based: 0.00

Lights and Appliances

Percent Fluorescent - CFL:	100.00
Refrigerator KWh:	632
Dishwasher EF:	0.66
Ceiling Fan CFM / Watt:	0.00

Active Solar

System Type:	DHW heating only
Loop Type:	Liquid, direct
Type:	Single glazing, selective
Orientation:	South
Area(sq ft):	46.0
Tilt(degrees):	18.0
Volume(cu ft/gal):	80.0

Photovoltaic System

Collector Orientation:	South
Collector Area(sq ft):	300.0
PV Panel Peak Power(Watts):	5040.0
Collector Tilt(degrees):	18.0
Inverter Efficiency(%):	95.0

FUEL SUMMARY

Date:	October 07, 2009	Rating No.:	1998-055-HFH-Legacy
Building Name:	Legacy	Rating Org.:	Energy Inspectors
Owner's Name:	Habitat for Humanity	Phone No.:	(702) 365-8080
Property:		Rater's Name:	Steve Cheney
Address:	Phoenix, AZ 85004	Rater's No.:	1998-055-EI-005
Builder's Name:	Habitat for Humanity		
Weather Site:	Phoenix, AZ	Rating Type:	Projected Rating
File Name:	Legacy Home - Habitat for Humanity 10-07-09.blq	Rating Date:	8-19-09

Legacy

Annual Energy Cost (\$/yr)**Annual End-Use Cost (\$/yr)**

Heating	\$	35
Cooling	\$	199
Water Heating	\$	0
Lights & Appliances	\$	414
Photovoltaics	\$	-850
Service Charges	\$	90
Total	\$	-112

Annual End-Use Consumption

Heating (kWh)	425
Cooling (kWh)	1959
Lights & Appliances (kWh)	4500
Photovoltaics (kWh)	-9235

Annual Energy Demands (kW)

Heating	2.4
Cooling	0.9
Water Heating (Winter Peak)	0.0
Water Heating (Summer Peak)	0.0
Lights & Appliances (Winter Peak)	0.5
Lights & Appliances (Summer Peak)	0.7
Total Winter Peak	2.8
Total Summer Peak	1.6

Utility Rates:

Electricity: APS AZ- 07-07

ENERGY COST AND FEATURE REPORT

Date:	October 07, 2009	Rating No.:	1998-055-HFH-Legacy
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Property:		Rater's Name:	Steve Cheney
Address:	Phoenix, AZ 85004	Rater's No.:	1998-055-EI-005
Builder's Name:	Habitat for Humanity		
Weather Site:	Phoenix, AZ	Rating Type:	Projected Rating
File Name:	Legacy Home - Habitat for Humanity 10-07-09.blq	Rating Date:	8-19-09

Legacy

ANNUAL ENERGY COSTS

Heating	\$	35
Cooling	\$	199
Water Heating	\$	0
Lights & Appliances	\$	414
Photovoltaics	\$	-850
Service Charges	\$	90
Total	\$	-112
Average Monthly	\$	-9

ENERGY FEATURES

Ceiling w/Attic:	None
Vaulted Ceiling:	R-22 Icynene U=0.052
Above Grade Walls:	SIP 6" with R5 Lath U=0.033
Foundation Walls (Cond):	None
Found. Walls (Uncond):	None
Doors:	Steel-polyureth-R6 U=0.144
Windows:	0.32/0.30 U=0.320
Frame Floors:	None
Slab Floors:	Uninsulated U=0.365
Infiltration:	Htg: 0.35 Clg: 0.35 ACHnat
Infilt. Measure:	Blower door test
Mechanical Ventilation:	None
Interior Mass:	None
Mech Equip List:	ASHP: Htg: 36.0 kBtuh, 8.0 HSPF. Clg: 36.0 kBtuh, 17.0 SEER.
	Water Heating: Integrated, Elec, 0.93 EF.
Programmable Thermostat:	Heat=Yes; Cool=Yes
Ducts:	R-6.0 Conditioned space
Duct Leakage:	0.00 CFM @ 25 Pascals
Lights/Appliances:	Defaults

REM/Rate - Residential Energy Analysis and Rating Software v12.7

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ENERGY COST AND FEATURE REPORT

Legacy

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Active Solar: DHW heating only
Photovoltaics: 5040 DC Watts
Sunspace: No

Notes: Where feature level varies in home, the dominant value is shown.



ENERGY STAR HOME REPORT

Date:	October 07, 2009	Rating No.:	1998-055-HFH-Legacy
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Owner's Name:	Habitat for Humanity	Phone No.:	(702) 365-8080
Property:		Rater's Name:	Steve Cheney
Address:	Phoenix, AZ 85004	Rater's No.:	1998-055-EI-005
Builder's Name:	Habitat for Humanity		
Weather Site:	Phoenix, AZ	Rating Type:	Projected Rating
File Name:	Legacy Home - Habitat for Humanity 10-07-09.blq	Rating Date:	8-19-09

Normalized, Modified End-Use Loads (MMBtu/year)

	<i>ENERGY STAR</i>	<i>As Designed</i>
Heating:	6.0	2.5
Cooling:	35.6	18.1
Water heating:	7.1	0.0
Lighting & Appliances:	16.2	18.0
Total:	64.9	38.6
HERS Index:	85	-16

ENERGY STAR Mandatory Requirements

<input checked="" type="checkbox"/> Thermal Bypass Inspection Checklist *	<input checked="" type="checkbox"/> ENERGY STAR Products *
<input checked="" type="checkbox"/> Ductwork Requirements	<input checked="" type="checkbox"/> ENERGY STAR Scoring Exceptions

* Thermal Bypass Checklist and ENERGY STAR Products are not checked in REM/Rate at this time.

This home MEETS OR EXCEEDS the energy efficiency requirements for designation as an EPA ENERGY STAR Qualified Home.

Pollution Prevented	<i>Reduction</i>	Energy Cost Savings (\$/year)
<i>Type of Emissions</i>		
Carbon Dioxide (CO2) - tons/yr	3.8	Heating: \$54
Sulfur Dioxide (SO2) - lbs/yr	6.9	Cooling: \$364
Nitrogen Oxides (NOx) - lbs/yr	10.6	Water Heating: \$300
		Lights & Appliances: \$76
		Total: \$794

The energy savings and pollution prevented are calculated by comparing the Rated Home to the Reference Home as defined in the "Mortgage Industry National Home Energy Rating Systems Standards" as promulgated by the Residential Energy Services Network (RESNET). In accordance with these guidelines, building inputs affecting setpoints, infiltration rates, window shading and the existence of mechanical systems may have been changed prior to calculating loads.

REM/Rate - Residential Energy Analysis and Rating Software v12.7

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Weather Site:	Phoenix, AZ	Rating Type:	Projected Rating
File Name:	Legacy Home - Habitat for Humanity 10-07-09.blq	Rating Date:	8-19-09

Building Information

Conditioned Area (sq ft):	1325	Housing Type:	Single-family detached
Conditioned Volume (cubic ft):	10600	Foundation Type:	Slab
Insulated Shell Area (sq ft):	3977	HERS Index:	-16 *****
Number of Bedrooms:	3		

Building Shell

Ceiling w/Attic:	None	Window/Wall Ratio:	0.10
Vaulted Ceiling:	R-22 Icynene U=0.052	Window Type:	0.32/0.30
Above Grade Walls:	SIP 6" with R5 Lath U=0.033	Window U-Value:	0.320
Found. Walls (Cond):	None	Window SHGC:	0.300
Found. Walls (Uncond):	None	Infiltration:	Htg: 0.35 Clg: 0.35 ACHnat
Frame Floors:	None	Measured Duct Leakage:	0.00 CFM25
Slab Floors:	Uninsulated U=0.365	Leakage to Outside:	0.00 CFM

Mechanical Systems

ASHP:	Htg: 36.0 kBtuh, 8.0 HSPF. Clg: 36.0 kBtuh, 17.0 SEER.
Water Heating:	Integrated, Elec, 0.93 EF.
Programmable Thermostat:	Heat=Yes; Cool=Yes

Note: Where feature level varies in home, the dominant value is shown.

This home MEETS OR EXCEEDS the EPA's requirements for an ENERGY STAR Home.