

AIR LEAKAGE REPORT

| | | | |
|-----------------|--------------------------|---------------|-------------------------|
| Date: | November 25, 2009 | Rating No.: | |
| Building Name: | Partridge | Rating Org.: | RC Kilgore Company, Inc |
| Owner's Name: | | Phone No.: | 330-445-2173 |
| Property: | 802 Sandal PI NE | Rater's Name: | Ralph Kilgore |
| Address: | Canton, OH 44704 | Rater's No.: | 2009-07 |
| Builder's Name: | Habitat Canton | | |
| Weather Site: | Akron, OH | Rating Type: | Confirmed Rating |
| File Name: | 802 Sandal NE Canton.blg | Rating Date: | 11/6/2009 |

| Whole House Infiltration | Blower door test | |
|--------------------------|------------------|----------------|
| | <i>Heating</i> | <i>Cooling</i> |
| Natural ACH: | 0.15 | 0.12 |
| ACH @ 50 Pascals: | 3.01 | 3.01 |
| CFM @ 25 Pascals: | 535 | 535 |
| CFM @ 50 Pascals: | 839 | 839 |
| Eff. Leakage Area: | 46.1 | 46.1 |
| Specific Leakage Area: | 0.00015 | 0.00015 |
| ELA/100 sf shell: | 1.00 | 1.00 |

| Total Duct Leakage to Outside | |
|-------------------------------|-------|
| CFM @ 25 Pascals: | N/A |
| CFM25 / CFMfan: | N/A |
| CFM25 / CFA: | N/A |
| CFM per Std 152: | N/A |
| CFM per Std 152 / CFA: | N/A |
| CFM @ 50 Pascals: | N/A |
| Eff. Leakage Area: | N/A |
| Thermal Efficiency: | 88.00 |

| Ventilation | |
|-----------------------------|---------------------|
| Mechanical: | Exhaust Only |
| Sensible Recovery Eff. (%): | 0.0 |
| Total Recovery Eff. (%): | 0.0 |
| Rate (cfm): | 50 |
| Hours/Day: | 24.0 |
| Fan Watts: | 25.0 |
| Cooling Ventilation: | Natural Ventilation |

ASHRAE 62.2 - 2003 Ventilation Requirements

For this home to comply with ASHRAE Standard 62.2 - 2003 Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings, a minimum of 51 cfm of mechanical ventilation must be provided continuously, 24 hours per day. Alternatively, an intermittently operating mechanical ventilation system may be used if the ventilation rate is adjusted accordingly. For example, a 103 cfm mechanical ventilation system would need to operate 12 hours per day, as long as the system operates to provide required average ventilation once each hour.

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

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SOURCE ENERGY & EMISSIONS REPORT

| | | | |
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Source Energy Consumption (MMBtu/year)

All Electric

| | <i>Reference Home</i> | <i>As Designed</i> | <i>Difference</i> | <i>% Difference</i> |
|----------------------|-----------------------|--------------------|-------------------|---------------------|
| Heating: | 74.5 | 53.6 | -20.9 | -28.1% |
| Cooling: | 16.7 | 6.3 | -10.5 | -62.6% |
| Water heating: | 22.2 | 20.8 | -1.4 | -6.3% |
| Lights & Appliances: | 92.8 | 75.7 | -17.2 | -18.5% |
| Photovoltaics: | 0.0 | 0.0 | | |
| Total: | 206.2 | 156.2 | -50.0 | -24.2% |

Total Emissions

All Electric

| <i>Type of Emissions</i> | <i>Reference Home</i> | <i>As Designed</i> | <i>Difference</i> | <i>% Difference</i> |
|----------------------------------|-----------------------|--------------------|-------------------|---------------------|
| Carbon Dioxide (CO2) - tons/year | 13.0 | 9.8 | -3.2 | -24.5% |
| Sulfur Dioxide (SO2) - lbs/year | 123.9 | 91.8 | -32.1 | -25.9% |
| Nitrogen Oxides (NOx) - lbs/year | 42.0 | 31.6 | -10.4 | -24.8% |

Emissions By End-Use

(All Electric Reference Home versus As Designed)

| | CO2-tons/yr | | SO2-lbs/yr | | NOx-lbs/yr | |
|---------------------|-------------|------------|------------|------------|------------|------------|
| | <i>Ref</i> | <i>Des</i> | <i>Ref</i> | <i>Des</i> | <i>Ref</i> | <i>Des</i> |
| Heating | 4.1 | 3.0 | 5.9 | 4.9 | 10.8 | 7.9 |
| Cooling | 1.2 | 0.4 | 18.8 | 7.0 | 4.4 | 1.6 |
| Water Heating | 1.2 | 1.1 | 0.0 | 0.0 | 3.0 | 2.8 |
| Lights & Appliances | 6.4 | 5.2 | 99.1 | 79.8 | 23.8 | 19.3 |
| Photovoltaics | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

The energy and emission values are calculated by comparing the Rated Home to an all-electric version of the Reference Home as defined in the "Mortgage Industry National Home Energy Rating Systems Standards" as promulgated by the Residential Energy Services Network (RESNET). Site-to-source multipliers and air emission data were taken from the US EPA eGRID2007 database.



ENERGY STAR HOME REPORT

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

| | <i>ENERGY STAR</i> | <i>As Designed</i> |
|------------------------|--------------------|--------------------|
| Heating: | 33.4 | 25.2 |
| Cooling: | 11.4 | 5.6 |
| Water heating: | 10.2 | 10.9 |
| Lighting & Appliances: | 23.9 | 26.4 |
| Total: | 78.9 | 68.1 |
| HERS Index: | 85 | 70 |

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 | | Energy Cost Savings (\$/year) | |
|--------------------------------|------------------|--------------------------------------|--------------|
| <i>Type of Emissions</i> | <i>Reduction</i> | | |
| Carbon Dioxide (CO2) - tons/yr | 2.5 | Heating: | \$168 |
| Sulfur Dioxide (SO2) - lbs/yr | 19.3 | Cooling: | \$90 |
| Nitrogen Oxides (NOx) - lbs/yr | 7.6 | Water Heating: | \$10 |
| | | Lights & Appliances: | \$60 |
| | | Total: | \$329 |

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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Home Energy Rating Certificate

802 Sandal PI NE
Canton, OH 44704



**5 Stars Plus
Confirmed Rating**

Uniform Energy Rating System

| 1 Star | 1 Star Plus | 2 Stars | 2 Stars Plus | 3 Stars | 3 Stars Plus | 4 Stars | 4 Stars Plus | 5 Stars | 5 Stars Plus |
|---------|-------------|---------|--------------|---------|--------------|---------|--------------|---------|--------------|
| 500-401 | 400-301 | 300-251 | 250-201 | 200-151 | 150-101 | 100-91 | 90-86 | 85-71 | 70 or Less |

Energy Efficient

HERS Index: 70 **Efficient Home Comparison: 30% Better**

General Information

Conditioned Area: 2141 sq. ft. HouseType: Single-family detached
Conditioned Volume: 16709 cubic ft. Foundation: Conditioned basement
Bedrooms: 3

Mechanical Systems Features

Heating: Fuel-fired air distribution, Natural gas, 92.1 AFUE.
Water Heating: Conventional, Natural gas, 0.62 EF, 50.0 Gal.

Duct Leakage to Outside: RESNET/HERS default
Ventilation System: Exhaust Only: 50 cfm, 25.0 watts.
Programmable Thermostat: Heating: No Cooling: No

Building Shell Features

Ceiling Flat: R-38 Exposed Floor: R-30
Vaulted Ceiling: NA Window Type: Double - Wood
Above Grade Walls: R-13 **Infiltration:**
Foundation Walls: R-27.7 Rate: Htg: 839 Clg: 839 CFM50
Slab: R-0.0 Edge, R-0.0 Under Method: Blower door test

Lights and Appliance Features

Percent Fluorescent Pin-Based: 0.10 Clothes Dryer Fuel: Electric
Percent Fluorescent CFL: 80.00 Range/Oven Fuel: Natural gas
Refrigerator (kWh/yr): 378.00 Ceiling Fan (cfm/Watt): 70.40
Dishwasher Energy Factor: 0.46

The Home Energy Rating Standard Disclosure for this home is available from the rating provider.

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Rating Number:

Certified Energy Rater: Ralph Kilgore

Rating Date: 11/6/2009

Rating Ordered For:

Estimated Annual Energy Cost

Confirmed Rating

| Use | MMBtu | Cost | Percent |
|-------------------|-------|---------------|-------------|
| Heating | 45.9 | \$404 | 26% |
| Cooling | 0 | \$0 | 0% |
| Hot Water | 18.9 | \$155 | 10% |
| Lights/Appliances | 23.5 | \$654 | 42% |
| Photovoltaics | -0.0 | \$-0 | -0% |
| Service Charges | | \$347 | 22% |
| Total | | \$1560 | 100% |

**This home meets or exceeds the minimum
criteria for all of the following:**

EPA Energy Star Home

Cornerstone Energy Conservation

1320 McKinley Ave, Suite B

Columbus, OH 43222

Phone# 614-351-1439

Fax # 614-351-6650

Web: www.ibpcolumbus.com