2008 EnergyValue Housing Award

WINNER Magazine

A snapshot of design features from the nation's elite energy-efficient home builders

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Building America

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The *EVHA Winner Magazine* is a snapshot of the best practices from the 2008 EnergyValue Housing Award (EVHA) winners. Now in its 13th year, the EVHA is the nation's preeminent energy-efficiency award honoring builders who voluntarily incorporate energy efficiency into all aspects of new home construction. Builders across the nation submit detailed applications in any of five categories (Affordable, Custom, Factory-Built, Multifamily, and Production) in one of three climate regions (Cold, Moderate, Hot). A panel of industry experts evaluates the applications and selects winners based on Energy Value, Design, Construction, Marketing and Customer Relations, and Participation in Energy Programs.

Each year the EVHA winners are unveiled at the EVHA Dinner Ceremony held during the International Builders' Show (IBS)—the world's largest annual construction tradeshow. The ceremony is a semi-formal affair that includes a presentation about the winners' building practices, addresses from key industry leaders, and industry networking with EVHA judges, winners, and sponsors. EVHA winners also participate in EVHA educational outreach programs during the IBS.

The EVHA is funded primarily through the U.S. Department of Energy's Building America program and the National Renewable Energy Laboratory with additional support from private-sector sponsors.

NREL/ADJ-5-55044-01

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The EnergyValue Housing Award program is managed and coordinated by Dr. Kevin Mo as part of the Building America Program. Building America is funded by the U.S. Department of Energy. The following NAHB Research Center staff and consultants made significant contributions to the success of the 2008 EVHA program: Edith Crane, Jacquita Ellis, Anne Holtz, Thomas Kenney, Rita Knab, Sally McGee, Rebecca Ibrahim, Kevin Mo, Jeannie Sikora, Kimberly Warren, William Watkins, and Joseph Wiehagen.

On the Cover: Fireside Home Construction, 2008 EVHA Gold Award Winner

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Awards Banquet

Wednesday, February 13, 2008, 7:00 – 10:00 p.m.
Rosen Plaza Hotel, Ballroom C, Orlando, Fla.

Keynote Presenters

Bob Jones
Vice President/Secretary, National Association of Home Builders (NAHB)

Bob Jones, a home builder in Bloomfield Hills, Mich., is the 2007 Vice President/Secretary of the 235,000-member National Association of Home Builders (NAHB). Jones, president of Robert R. Jones Homes, specializes in land development and the design and construction of single-family luxury homes throughout metropolitan Detroit. During his 35-year career, he has earned a reputation for excellence and established a continuing commitment to the home building industry at the local, state, and national levels.

Alexander Karsner
Assistant Secretary for Energy Efficiency and Renewable Energy (EERE),
U.S. Department of Energy

Managing America's $1.74 billion applied science, research, development, and deployment portfolio, Assistant Secretary Karsner implements Presidential energy initiatives to confront "America's addiction to oil" and "the serious challenge of climate change." Successes lead *BusinessWeek* to call him "The Point Man for Bush's Green Push." Karsner bears primary responsibility for education, conservation, regulation, and efficient use of energy, including building codes, appliance standards, and ENERGY STAR®, amongst others.

Special Guests

David Rodgers — EVHA Master of Ceremonies
Deputy Assistant Secretary for Energy Efficiency, Office of Energy Efficiency and Renewable Energy (EERE), U.S. Department of Energy, Washington, D.C.

Michael Luzier — President, NAHB Research Center, Upper Marlboro, Md.

2008 IBS Educational Session

Maximizing the EnergyValue of Your Homes
Thursday, February 14, 2008
1:00 p.m. – 2:30 p.m.

Orange County Convention Center, West, Room 311, E–H

2008 EVHA award winners will offer some of their innovative approaches to energy efficiency.

Moderator:

Dr. Kevin Mo
EVHA Program Manager,
NAHB Research Center

Speakers:

Edward Pollock
Residential Team Leader, Building Technologies Program,
U.S. Department of Energy

Jammie Sabin
President, Aspen Homes of Colorado, Inc.

Craig Dudley
Division President, Wilshire Homes

Charles Durrett
Principal, The Cohousing Company

Making a difference... 1 or 1,000 homes at a time

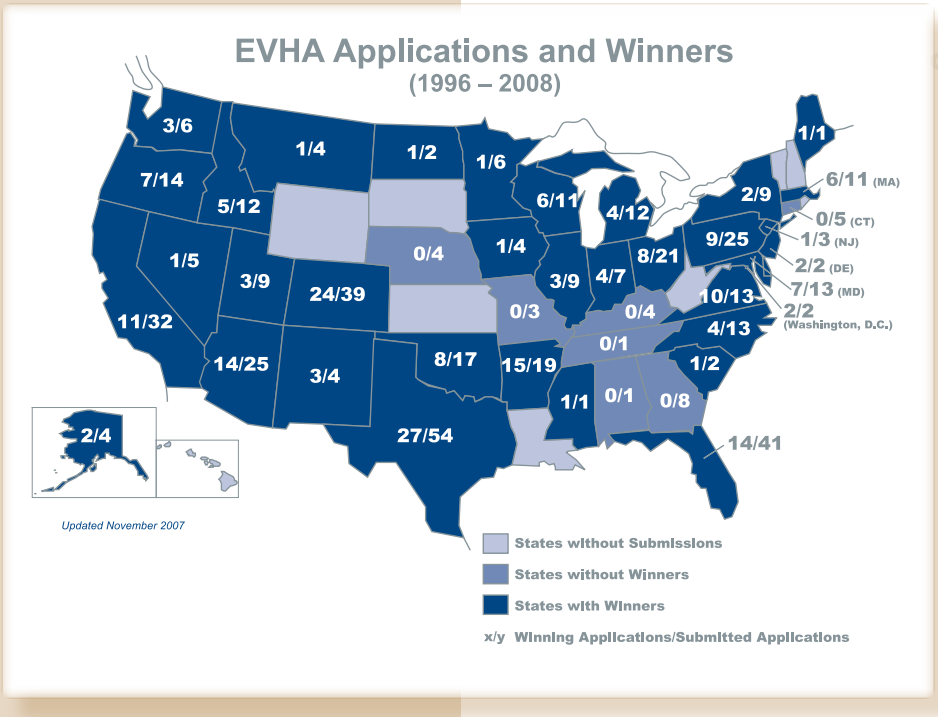
EVHA Standings (1996-2008)		
State	Winning Applications	Total Applications
TX	27	54
CO	24	39
AR	15	19
FL	14	41
AZ	14	25
CA	11	32
VA	10	13
PA	9	25
OH	8	21
OK	8	17

EnergyValue Housing Award winning builders have been the gold standard for energy-efficient home construction for well over a decade. This year's EVHA winners, which represent all facets of the industry and all types of buildings—from affordable cottages to grand demonstration homes; from hot climate in Texas to cold weather in Wisconsin—are no different.

Winners in each category are influencing their local markets and educating homebuyers who expect excellence. Custom home builders are setting the bar for what production builders can do five or 10 years from now; affordable builders are making energy efficiency possible for the homeowners who most need it; and multifamily builders are bringing recognition about efficiency issues to a growing market segment.

Due to their large market share, production builders in particular are not only making a big impact by building a lot of homes at a high level of efficiency, they also have tremendous influence in the marketplace. They set standards of construction that other builders must follow to maintain pace with the local market. By bringing a lot of potential customers through their doors and promoting energy efficiency in their marketing efforts, EVHA-winning production builders serve to create better educated buyers who, in turn, bring their knowledge about efficiency to the competition.

For all types of homes, the EVHA builders are making a terrific contribution toward reducing the environmental impact of homes for this and future generations.



Demographic information of EVHA applications and winners in the program's 13 years.

Aspen Homes of Colorado, Inc.

The 2008 EVHA Builder of the Year, Aspen Homes of Colorado, Inc., accomplished a challenging feat by winning three Gold Awards, one each in the production, custom, and affordable home categories. The company, which builds more than 100 homes each year, is a production builder that is versatile enough to create homes that exceed the expectations of a wide variety of customers.

Aspen Homes of Colorado impressed the EVHA judges in many respects. The judges described the company as an "outstanding builder" whose homes were "phenomenal," and "highly consistent across categories." Further, the judges noted that its applications discussed "all the right stuff … all the way through." As one discerning EVHA judge described, "My first thought for Aspen Homes was, 'I'd like this builder to build me a house' … and, I am not easy to get along with when it comes to builders I work with."

Besides the efficiency of Aspen Homes of Colorado's homes, the judges were impressed by the company's guaranteed energy bills, its "sweat equity" program for skilled homeowners, and its new homeowner gift of one year of wind energy for each homeowner.

Sincerely believing in "building better homes for a better life," Aspen Homes of Colorado has been building 100 percent ENERGY STAR- and Built Green-labeled homes since it was founded in 2002. Moreover, every home is tested by an independent third-party energy rater, including a final blower door test. The company has won three EVHA Gold Awards in the past two years.

Aspen Homes of Colorado
Cold Climate, Affordable Home
2008 EVHA Gold Award Winner

Aspen Homes of Colorado
Cold Climate, Custom Home
2008 EVHA Gold Award Winner

Aspen Homes of Colorado
Cold Climate, Production Home
2008 EVHA Gold Award Winner

ENERGY VALUE SM
HOUSING AWARD
2008
Gold Winner

Aspen Homes of Colorado, Inc.

Cold Climate, Affordable Home

Years in business: 7
Average homes built per year: 113
Member: HBA of Northern Colorado

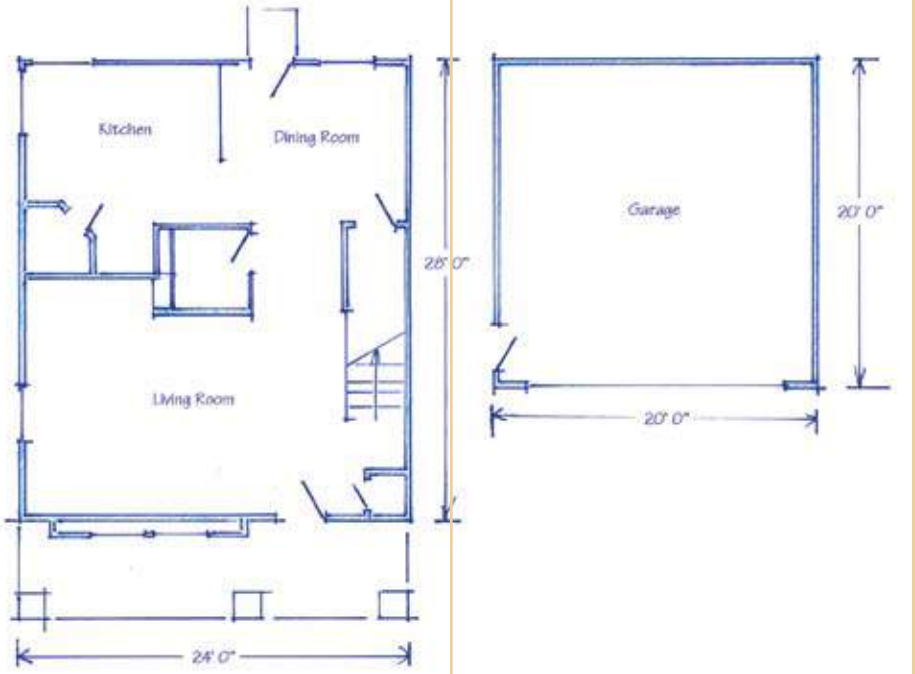
House Description

Size: 1,416 s.f.
Location: Fort Collins, Colorado
Construction cost: $99 per s.f.
Date completed: November 2006

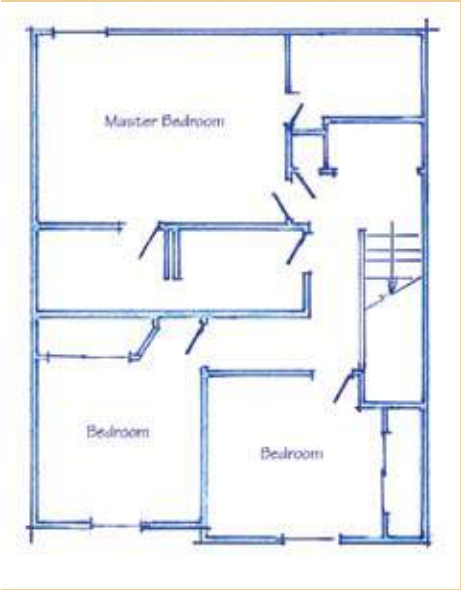
It is often difficult to incorporate the latest building science and energy efficiency features into affordable homes, but Aspen Homes of Colorado has proven that it can work seamlessly. According to one EVHA judge, "They can build an affordable home that is up to my standards. To me, that's great. They were able to do an excellent job at an affordable [price]."

Aspen Homes of Colorado engages homeowners with multiple walk-throughs at each stage of construction so that the buyer is aware of what is done for energy efficiency and why. Guaranteed energy bills and Aspen's new homeowner gift of a year's worth of wind energy credits help keep the buyer aware of energy use and its affect on the affordability of their homes.

Floor Plan



Main Floor



Upper Floor

Energy Features

Foundation: Conditioned crawlspace with R-13 fiberglass batt insulation
Wall Construction: 2x4 @ 16" o.c.
Wall Insulation: R-15 blown fiberglass cavity insulation plus R-5 foam board sheathing
Rim Joist Insulation: R-13 fiberglass batt plus R-5 foam sheathing
Roof Construction: Trusses @ 24" o.c.
Ceiling Insulation: R-38 blown cellulose
Windows: Low-e, argon-filled vinyl; U-0.32; SHGC 0.25
HVAC: 92 AFUE gas furnace; no mechanical cooling
Ducts: All supply ducts in conditioned space; 95% return ducts in conditioned space
Water Heating: 82 AFUE tankless gas
Lighting: 45% fluorescent (3% dedicated fluorescent fixtures)
Appliances: ENERGY STAR dishwasher
Duct Leakage Test: 10 CFM to exterior at 25 Pa; 58 CFM total at 25 Pa
Blower Door Test: 3.1 ACH50
HERS Index: 60
Innovative Features: Programmable thermostat; PEX manifold plumbing system

ENERGY VALUE SM
HOUSING AWARD
2008
Gold Winner

Aspen Homes of Colorado, Inc.

Cold Climate, Custom Home

Years in business: 7
Average homes built per year: 113
Member: HBA of Northern Colorado

House Description

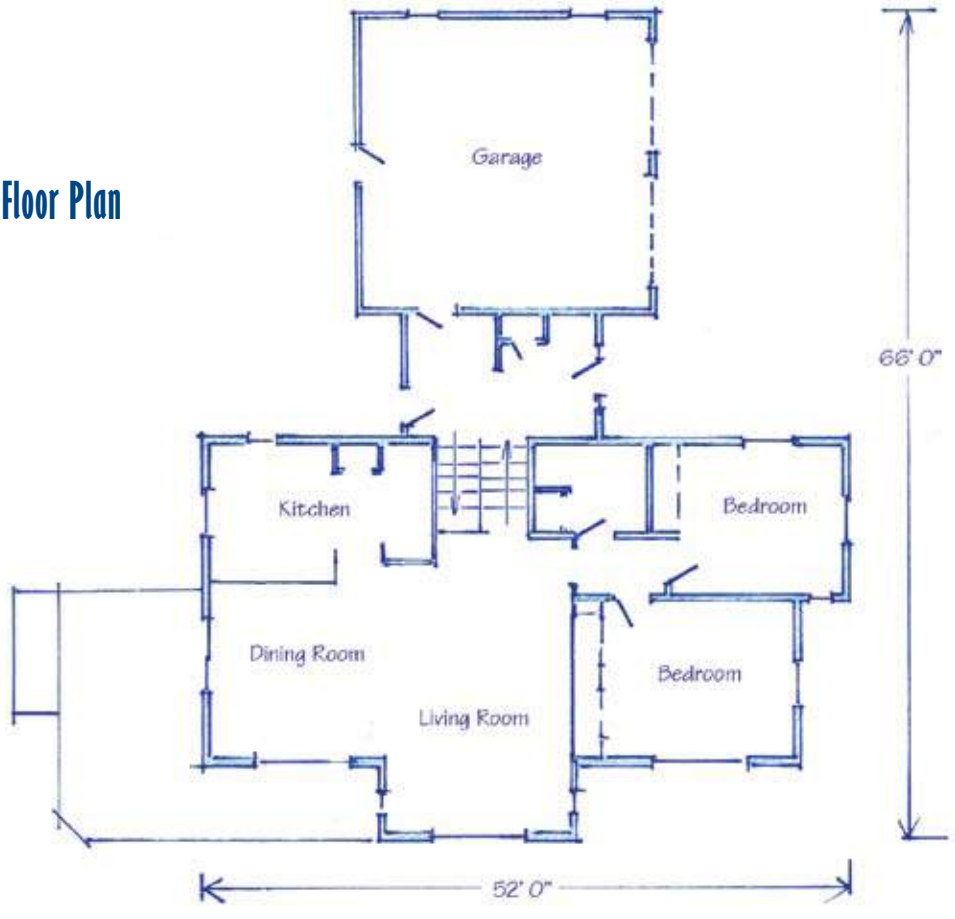
Size: 2,902 s.f.
Location: Fort Collins, Colorado
Construction cost: $85 per s.f.
Date completed: August 2006

As a relatively young company, Aspen Homes of Colorado seems to have attained wisdom beyond its years. The company believes that taking a comprehensive approach to quality control is essential for constructing an energy-efficient home. To this end, it hires knowledgeable and thorough employees and subcontractors who install and enforce precise quality control measures to check "every single step in the process." This high level of attention to detail is what allows Aspen Homes of Colorado to meet its own high standards, the standards of ENERGY STAR and the local green building program, and, most importantly, the expectations of the homeowner. This custom home, designed to use near-zero energy, was described as "phenomenal" by the EVHA judges.

Energy Features

Foundation: R-10 exterior rigid foam on concrete wall (lower); R-15 to R-28 blown fiberglass in framed cavity (upper)
Wall Construction: 2x6 @ 24" o.c.
Wall Insulation: R-23 blown fiberglass plus R-5 foam sheathing
Rim Joist Insulation: R-19 blown fiberglass plus R-5 foam sheathing
Roof Construction: Trusses @ 24" o.c.
Ceiling Insulation: R-42 blown cellulose
Windows: Low-e, gas-filled vinyl; U-0.30 to 0.39; SHGC 0.27 to 0.55 (South-facing glass has high SHGC for passive solar heat gain)
HVAC: Geothermal heat pump with variable speed air handler; up to 90% efficient heat recovery ventilator
Ducts: All ducts in conditioned space
Water Heating: Provided by geothermal system (COP 3.0) with electric tankless back-up
Lighting: 100% dedicated fluorescent fixtures
Appliances: ENERGY STAR refrigerator, dishwasher, and washer
Duct Leakage Test: 0 CFM to exterior at 25 Pa; 16 CFM total at 25 Pa
Blower Door Test: 1.63 ACH50
HERS Index: 10 (with photovoltaic)
Innovative Features: Tubular skylights; 5.85 kW photovoltaic system; PEX manifold plumbing; programmable thermostat

Floor Plan



Main Floor

ENERGY VALUE SM
HOUSING AWARD
2008
Gold Winner

Fireside Home Construction

Cold Climate, Custom Home

Years in business: 11
Average homes built per year: 7
Member: HBA of Washtenaw County

House Description

Size: 4,010 s.f.
Location: Dexter, Michigan
Construction cost: $238 per s.f.
Date completed: June 2007

According to the EVHA judges, Fireside Home Construction, "did everything right." To maintain its strong reputation as a quality builder of timber-framed homes, the company strives to provide "personal attention to each client, achieve complete customer satisfaction, and provide enduring value to the homeowner."

The company's air sealing practices provide a glimpse into the level of attention it gives during construction. To create a tight home, everything is sealed as it is built. Fireside's own framing crew is trained by an energy rater and attends one or more blower door tests to observe typical leakage hot spots. Mechanical and electrical trades are also trained about air leakage and given air sealing equipment to seal holes after rough-in. Even the trim carpenter has a foam gun to seal any gaps as he trims windows and doors.

Fireside Home Construction would like to thank the following companies & individuals for their help in completing our award-winning model home:

- Riverbend Tiimber Framing/Insulspan, Inc. – Frank & Brenda Baker
- Chelsea Lumber – Dave Pilsner
- Michigan Energy Services – Rob Derksen
- Roberts Plumbing – Bob Morgan
- RKB Design – Mike Segar
- Sherwin Williams
- Big George's Appliances – Patrick Redman
- Complete Trim Services – Roy Crites
- LaFave Decorators – Randy LaFave
- Great Ideas – Julie Rhora

Insulated concrete forms

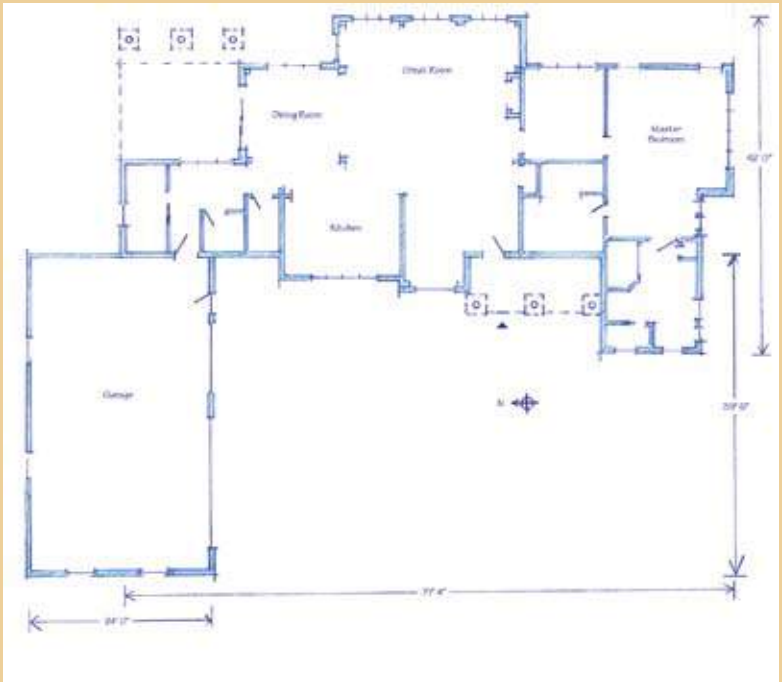
Radiant floor

Rim joist sealed and insulated with spray foam

Energy Features

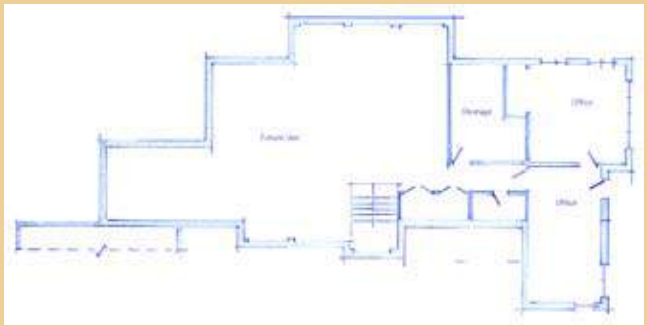
Foundation: R-25 insulated concrete forms; R-13 foam edge insulation and R-10 foam under basement slab
Wall Construction: R-27 structural insulated panels (SIPs)
Rim Joist Insulation: R-28 spray foam
Roof Construction: R-45 SIPs
Windows: Low-e, gas-filled clad wood windows; U-0.30; SHGC 0.34
HVAC: 30 SEER, 5.0 COP geothermal heat pump; 85% efficient heat recovery ventilator
Ducts: All ducts in conditioned space
Water Heating: Primary water heating by geothermal; 0.91 EF electric tank back-up; all hot water lines insulated
Lighting: 88% fluorescent; 78% dedicated fluorescent fixtures
Appliances: ENERGY STAR refrigerator, dishwasher, and washer
Duct Leakage Test: 0 CFM total at 25 Pa; 0 CFM to exterior at 25 Pa
Blower Door Test: 0.86 ACH50
HERS Index: 37 (with photovoltaic)
Innovative Features: 2 kW photovoltaic system; lighting controls; frost protected shallow foundation; multi-zone HVAC; advanced framing on interior walls; dual-flush toilets

Floor Plan



First Floor

Second Floor (above) and Basement (below)



ENERGY VALUE SM
HOUSING AWARD
2008
Gold Winner

Veridian Homes

To achieve a high level of quality and consistency in each home, Veridian Homes instills "a great level of training and organization to a project," according to the EVHA judges, in which the process of building and design is "exceptional."

Veridian Homes credits its Even Flow production schedule and its National Housing Quality (NHQ) Builder Certification as key to the consistent and effective application of ENERGY STAR and Green Built standards to all of its homes. The company has developed detailed scopes of work for all of its trade partners, each of which contains measures to ensure energy-efficiency details are implemented properly. The majority of the company's trade partners have completed the NHQ Trade Certification training at Veridian Homes' expense. Finally, the company's construction managers conduct 22 inspections and complete a 314-point final inspection checklist to ensure continuous improvement.

Cold Climate, Multifamily Home

Years in business: 50+
Average homes built per year: 526
Member: Madison Area BA

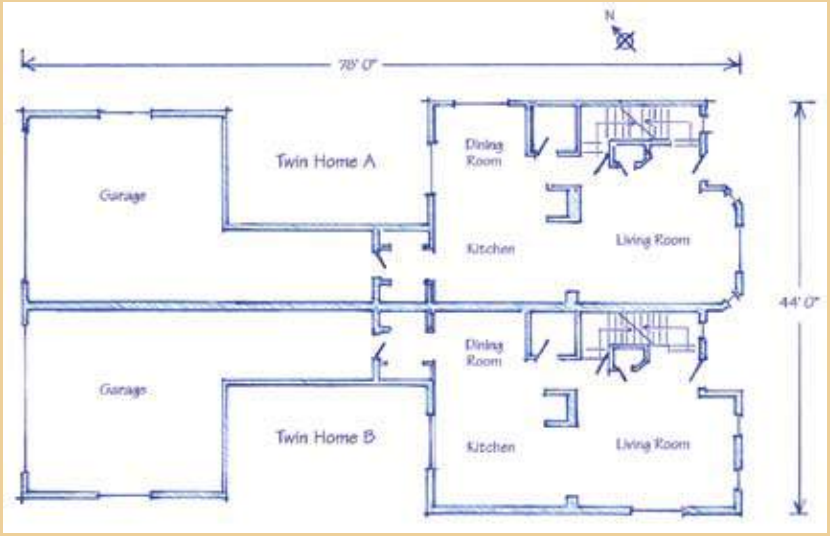
House Description

Size: 2,312 s.f.
Location: Dane, Wisconsin
Construction cost: $53 per s.f.
Date completed: July 2006

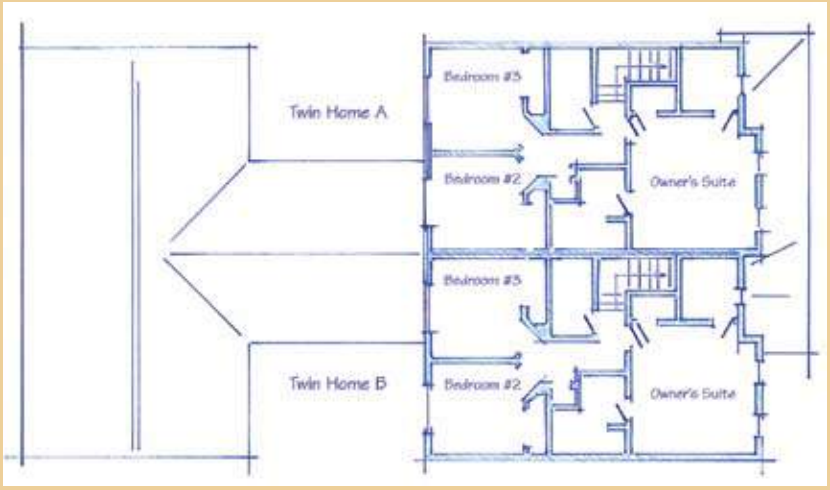
Energy Features

Foundation: Poured concrete basement with R-5 exterior foam insulation
Wall Construction: 2x6 @ 24" o.c.
Wall Insulation: R-19 sprayed cellulose
Rim Joist Insulation: R-19 sprayed cellulose
Roof Construction: Trusses @ 24" o.c.
Ceiling Insulation: R-40 blown cellulose
Windows: Low-e vinyl; U-0.29 to 0.31; SHGC 0.29 to 0.34
HVAC: 93 AFUE gas furnace; 13 SEER air conditioner; spot ventilation
Ducts: All ducts in conditioned space and sealed with UL-listed foil tape
Water Heating: 40-gallon, 0.62 EF gas water heater
Lighting: 10% dedicated fluorescent fixtures
Appliances: ENERGY STAR refrigerator
Duct Leakage Test: 0 CFM to exterior at 25 Pascals (total leakage not reported)
Blower Door Test: 2.8 ACH50
HERS Index: 64
Innovative Features: Programmable thermostat

Floor Plan



First Floor



Second Floor

ENERGY VALUE SM
HOUSING AWARD
2008
Gold Winner

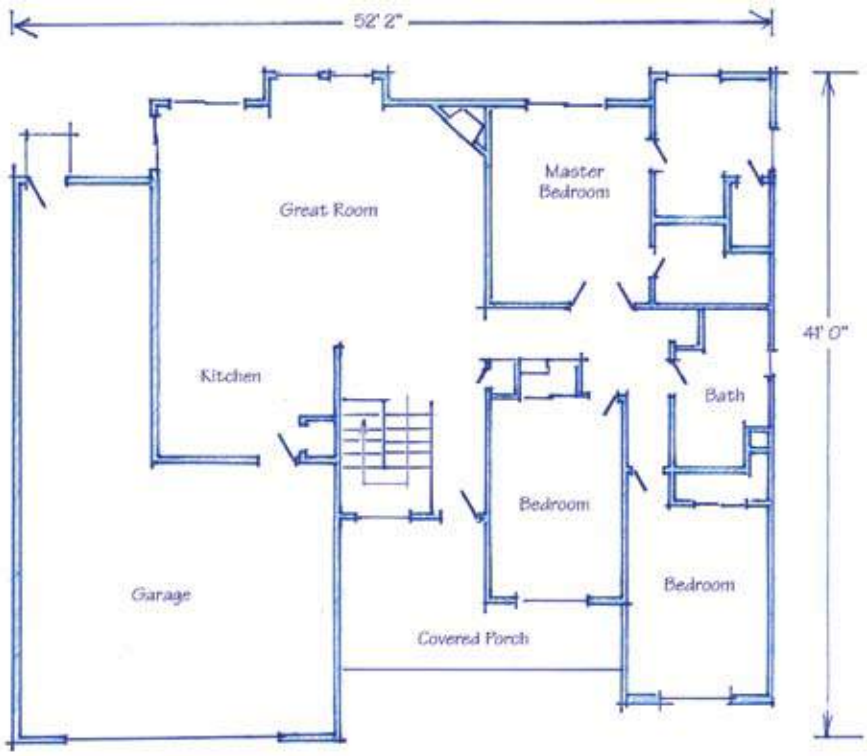
Aspen Homes of Colorado, Inc.

Aspen Homes of Colorado's winning home in the production category includes several efficiency details that garner an "impressive" HERS index. Contributing to this level of efficiency are numerous features which are especially unique to a production home such as a tankless gas water heater and Manual D designed duct systems. For the tightly-constructed home, several features ensure high indoor air quality including: 100 percent hard-ducted air distribution system; fresh air circulated throughout the house by the central air handler; motion sensor-activated garage exhaust fan; sealed combustion equipment; passive radon system; MERV 12 air filter; and a moisture management plan. In fact, due to these air quality measures, the home received one of the nation's first ENERGY STAR Indoor Air Package (IAP) labels.

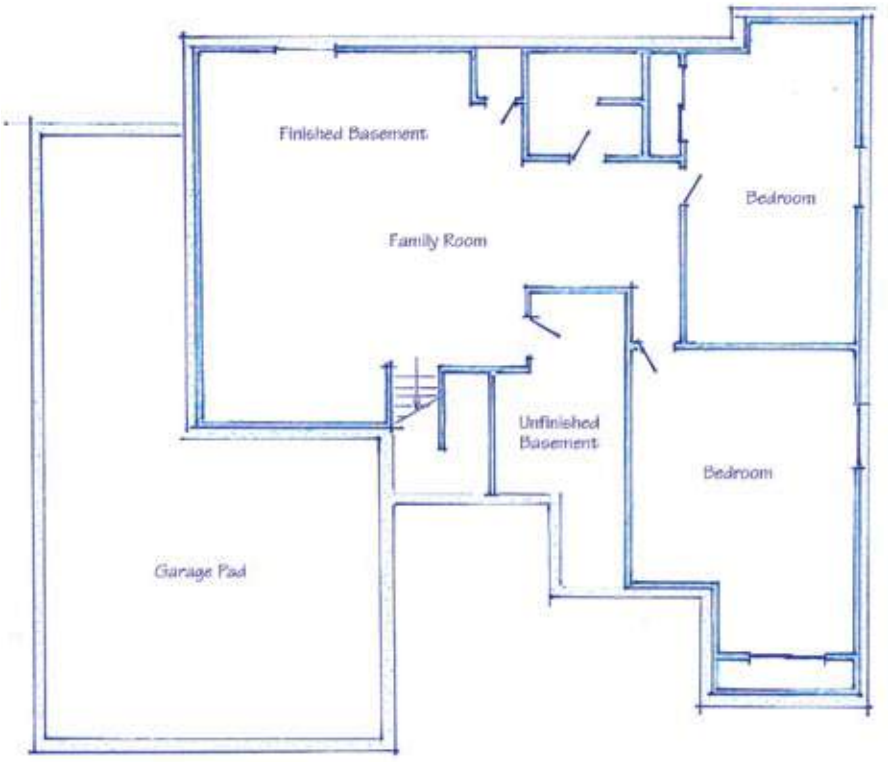
Energy Features

Foundation: Poured concrete basement with R-15 to R-28 interior insulation
Wall Construction: 2x4 @ 16" o.c.
Wall Insulation: R-15 blown fiberglass plus R-5 exterior foam
Rim Joist Insulation: R-13 fiberglass batt plus R-5 exterior foam
Roof Construction: Trusses @ 24" o.c.
Ceiling Insulation: R-38 blown fiberglass
Windows: Low-e, gas filled vinyl; U-0.32; SHGC 0.28
HVAC: 92 AFUE gas furnace; 13 SEER air conditioner; central-fan integrated ventilation
Ducts: All ducts in conditioned space and sealed with mastic
Water Heating: 0.82 EF tankless gas
Lighting: 32% fluorescent (2% dedicated fluorescent fixtures)
Appliances: ENERGY STAR dishwasher
Duct Leakage Test: 0 CFM to exterior at 25 Pa; 102 CFM total at 25 Pa
Blower Door Test: 2.4 ACH50
HERS Index: 69
Innovative Features: Programmable thermostat; advanced framing

Floor Plan



Main Floor



Basement

Cold Climate, Production Home

Years in business: 7
Average homes built per year: 113
Member: HBA of Northern Colorado

House Description

Size: 2,818 s.f.
Location: Loveland, Colorado
Construction cost: $98 per s.f.
Date completed: February 2007

Aspen Homes would like to thank:

- The employees of Aspen Homes for their care and diligent efforts to make our goals in energy-efficient building a reality.
- EnergyLogic Inc., our independent energy rating firm who ensures our standard of quality by inspecting 100% of our homes.
- The following programs for helping to create a local market of buyers who are educated to the true benefits of energy-efficient homes: - Energy Star, Built Green Colorado, and E-Star of Colorado.

Veridian Homes

Cold Climate, Production Home

Years in business: 50+
Average homes built per year: 526
Member: Madison Area BA

House Description

Size: 4,660 s.f.
Location: Verona, Wisconsin
Construction cost: $71 per s.f.
Date completed: April 2007

Veridian Homes' participation in local and national programs has led to the company's implementation of exemplary practices in all facets of its home construction. And, as Wisconsin's largest home builder, Veridian Homes is making a big impact. For example, their award-winning quality control process includes detailed trade contractor scopes of work and multiple field inspections that help ensure what the EVHA judges describe as "very tight construction."

Yet, the company's influence goes beyond simply the impact of the home itself. For example, Veridian Homes' award-winning recycling program resulted in more than half of all its construction waste (50% by volume; 60% by weight) diverted from the landfill in 2007. Most recently, the company has entered into a voluntary "Clean Lakes" charter with state and local government to exceed existing water standards and to continuously improve erosion and stormwater control measures.

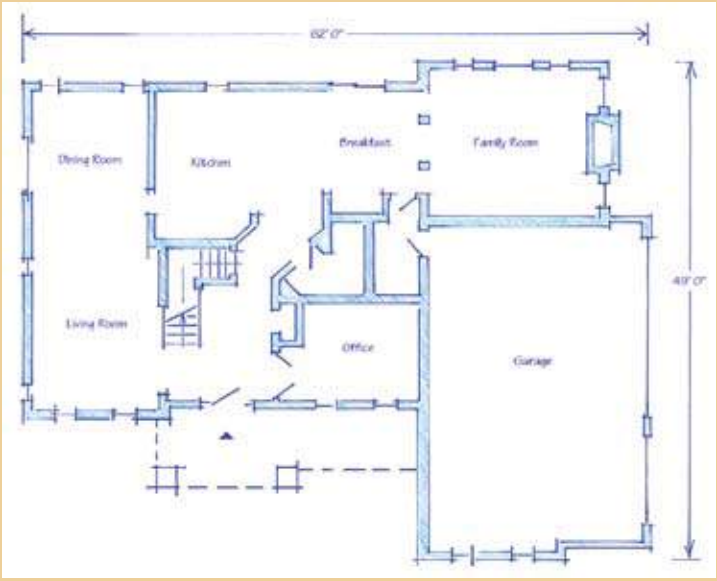
Veridian Homes would like to thank:

- Hans Hofmann – Hofmann Energy Consultants
- Jason Jeffers – Alpine Insulation
- Greg Raasch – Weather Shied/Visions
- Susan Buchanan – WasteCap WI
- Rachel Goodell – Administrative Assistant
- Dave Alberts – Production Mananger
- Claire Hanschke – Administrative Assistant
- Gary Zajicek – VP of Construction

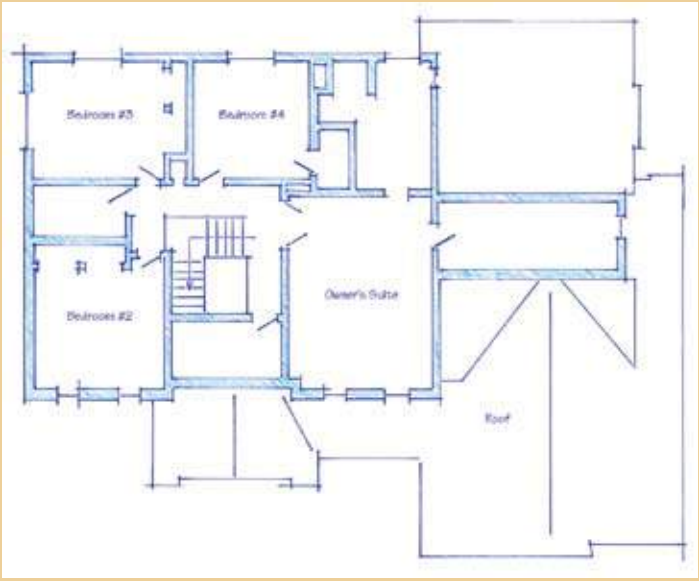
Energy Features

Foundation: Poured concrete basement with R-5 exterior foam insulation
Wall Construction: 2x6 @ 24" o.c.
Wall Insulation: R-19 spray cellulose
Rim Joist Insulation: R-19 spray cellulose
Roof Construction: Trusses @ 24" o.c.
Ceiling Insulation: R-40 blown cellulose
Windows: Low-e vinyl; U-0.29; SHGC 0.30 to 0.34
HVAC: 93 AFUE gas furnace; 13 SEER air conditioner; spot ventilation
Ducts: All ducts in conditioned space and sealed with UL-listed foil tape
Water Heating: 0.62 EF tank-type water heater
Lighting: 11% dedicated fluorescent fixtures
Appliances: ENERGY STAR washer and dishwasher
Duct Leakage Test: 15 CFM to exterior at 25 Pa; 475 CFM total at 25 Pa
Blower Door Test: 1.8 ACH50
HERS Index: 57
Innovative Features: Programmable thermostat; multi-zone HVAC

Floor Plan



First Floor



Second Floor

ENERGY VALUE HOUSING AWARD 2008 Gold Winner

Cherokee Investment Partners, LLC

Moderate Climate, Custom Home

Years in business: 14
Member: HBA of Durham, Orange, and Chatham Counties

House Description

Size: 4,300 s.f.
Location: Wake, North Carolina
Construction cost: $188 per s.f.
Date completed: July 2007

As the "world's largest investment firm specializing in the acquisition, remediation and sustainable redevelopment of brownfields," Cherokee Investment Partners, LLC, isn't your typical builder—and this winning entry is not your typical home. According to the EVHA judges, it is an "exceptional demonstration" home that is a showcase of high-tech energy- and resource-efficient building that features, "just about everything you can imagine." The company is using this demonstration home—occupied by one of the company's executives—as a learning tool to guide future development.

Cherokee Investment Partners describes building its "Mainstream GreenHome" in an established neighborhood as part of an effort to "convince the building community and homeowners that green homes are economically attractive, environmentally beneficial, comfortable, and beautiful."

Installation of solar photovoltaic shingles

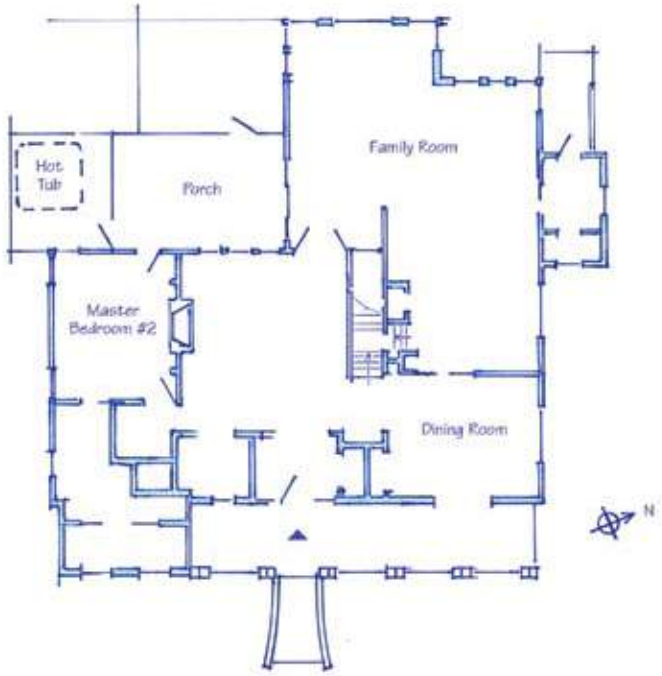
Energy Features

Foundation: Combination of unconditioned basement, unconditioned crawlspace and conditioned crawlspace; R-10 exterior foam and R-5 basement slab edge insulation
Wall Construction: 2x4 @ 16" o.c.
Wall Insulation: R-23 spray foam plus R-3 sheathing
Rim Joist Insulation: R-23 spray foam
Roof Construction: Engineered wood framing
Ceiling Insulation: R-39 spray foam
Windows: Low-e, gas-filled wood; U-0.32 to 0.36; SHGC 0.19 to 0.31 (south-facing glass tinted)
HVAC: Geothermal heat pump; radiant heat delivery; 82% efficient heat recovery ventilator
Ducts: 80% of ductwork in conditioned space and 20% in insulated crawl and unvented attic; R-6 duct insulation
Water Heating: Desuperheater (fueled by geothermal heat pump waste heat in cooling mode) and solar water heating panels preheating 105-gallon, 0.91 EF electric water heating tank
Lighting: 89% fluorescent and LED lighting (54% dedicated fluorescent and LED lighting)
Appliances: ENERGY STAR refrigerator, dishwasher, washer, garage freezer
Duct Leakage Test: 135 CFM to exterior at 25 Pa; 298 CFM total at 25 Pa
Blower Door Test: 4.5 CFM50
HERS Index: 28 (with photovoltaic)
Innovative Features: 10 kW photovoltaic system; programmable thermostat; advanced lighting controls; geothermal heat pump; multi-zone HVAC; drainwater heat recovery; reflective roofing material; translucent roof

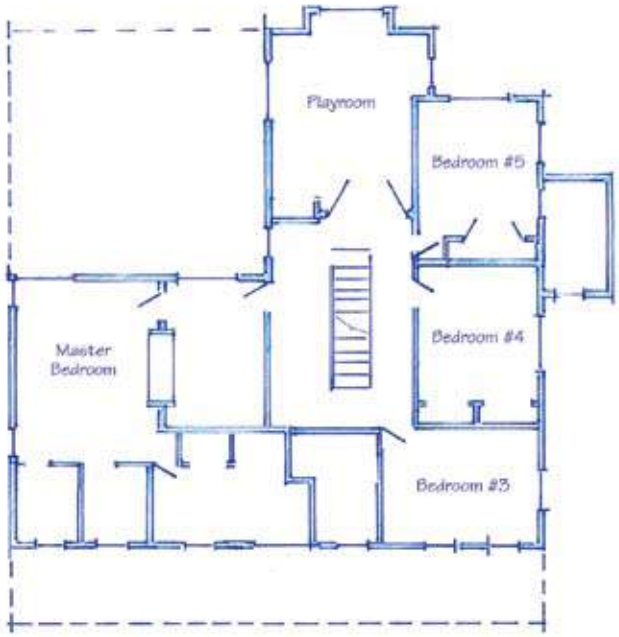
Companies the National Homebuilder Mainstream GreenHome™ would like to thank:

- NAHB
- Bill McDonough
- HUD P.A.T.H.
- ENERGY STAR
- Department of Energy
- HVAC Team: TRC Energy Solutions/FHP/Charlie Elks
- Fixtures Team: Whirlpool/Kohler
- Solar Team: Atlantis/Dawn Solar/SEM
- Building Envelope Team: BASF/Anderson Windows
- Lighting Shading Team: Progress Lighting/Lutron

Floor Plan



First Floor



Second Floor

U.S. Department of Energy

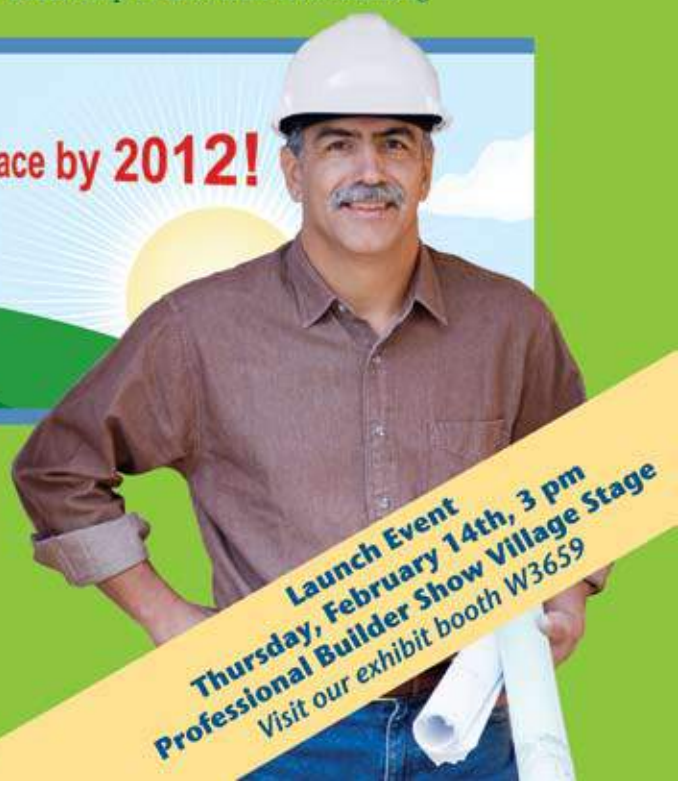
Builders Challenge

Recognizing Energy Leadership in American Homebuilding

Building America
U.S. Department of Energy
Research Toward Zero Energy Homes

220,000 high-performance Homes into the marketplace by 2012!

The challenge to builders is to construct homes that rate 70 or lower on the EnergySmart Home Scale and that deliver comfort, quality, durability, and a healthy indoor environment.



Launch Event
Thursday, February 14th, 3 pm
Professional Builder Show Village Stage
Visit our exhibit booth W3659

ENERGY VALUE SM
HOUSING AWARD
2009
Sponsor

2009 EVHA Sponsorships

Opportunities for Highlighting Your Commitment to Energy Efficiency and a Sustainable Environment

The NAHB Research Center is accepting sponsors for the 2009 EnergyValue Housing Award (EVHA) Program. Supported by U.S. Department of Energy (DOE) through its Building America Program, the National Association of Home Builders (NAHB), and the National Renewable Energy Laboratory (NREL), the EVHA challenges builders to elevate standards for energy-efficient construction, provides educational opportunities for home builders, and fosters the adoption of energy-efficiency principles.

The 2009 EVHA winners will be recognized in Las Vegas, Nev., during the 2009 International Builders' Show—the world's largest annual construction show. Sponsors will be acknowledged during the awards banquet and their ads will be included in the *2009 EVHA Winner Magazine*.

Sponsor Benefits

- Ad in 2009 EVHA Winner Magazine, well circulated in national green building conferences and energy efficiency seminars, workshops
- VIP tickets for the 2009 EVHA Banquet
- Permission to use the EVHA sponsor logo for one year
- Company logo on the EVHA website
- Prominent display of logo during the 2009 EVHA Banquet
- Recognition on the cover of the 2009 EVHA Winner Magazine
- Company listing and acknowledgement in the Sponsor section of 2009 EVHA Winner Magazine
- Recognition in marketing, public relations, and outreach materials

For more information contact:

Kevin Mo, Ph.D.
EVHA Program Manager
NAHB Research Center
400 Prince George's Blvd.
Upper Marlboro, MD 20774
☎ (800) 638-8556, ext. 6210
Fax: (301) 430-6180
kmo@nahbrc.org
www.nahbrc.org/evha

Stitt Energy Systems, Inc.

ENERGY VALUE SM
HOUSING AWARD
2008
Gold Winner

Stitt Energy Systems isn t new to energy efficient home building or the EnergyValue Housing Award. After nearly 30 years of building homes, Stitt Energy Systems has an unwavering commitment to energy efficiency. Its mission, which hasn t changed since the company s inception, is "to provide energy efficient homes that are environmentally responsible for the health, welfare, and happiness of our customers, our employees, our investors, and future generations.

According to the judges, Stitt Energy Systems has demonstrated "exceptional practice" with this custom home. Passive and active solar systems, combined with state of the art efficiency features, contribute to the $67 monthly energy bills accrued on average during the first year of occupancy. The company has won 14 EVHA awards in the past 12 years, including a Builder of the Year award in 1999.

Moderate Climate, Custom Home

Years in business: 29
Average homes built per year: 24
Member: Northwest Arkansas HBA

House Description

Size: 3,718 s.f.
Location: Springfield, Missouri
Construction cost: $167 per s.f.
Date completed: September 2006

Energy Features

Foundation: R-22 Insulating Concrete Form basement
Exterior Wall Construction: 2x4 @ 16" o.c. with 2x2 cross-wise
Wall Insulation: R-20 soy-based spray foam
Rim Joist Insulation: R-20 soy-based spray foam
Roof Construction: Raised-heel trusses @ 24" o.c.
Ceiling Insulation: R-30 soy-based spray foam at roofline
Windows: Low-e, argon-filled vinyl; U-0.29 to 0.31; SHGC 0.22 to 0.30
HVAC: 78% efficient wood fireplace system; 17.5 SEER, 8.4 HSPF air source heat pump; energy recovery ventilator
Ducts: All ducts in conditioned space and sealed with mastic and foil tape
Water Heating: 40 s.f. flat plate solar collector with electric tank auxiliary and PV-powered pump
Lighting: 100% fluorescent (43% dedicated fluorescent fixtures)
Appliances: ENERGY STAR refrigerator, dishwasher, chest freezer, and washer
Duct Leakage Test: 0 CFM to exterior at 25 Pa; 0 CFM total at 25 pa
Blower Door Test: 1.17 ACH50
HERS Index: 38 (with photovoltaic)
Innovative Features: 3.1 kW photovoltaic system; radiant barrier roof decking; tubular skylights; programmable thermostat; advanced framing techniques including 2-stud corners, ladder blocking, and cross bracing; passive solar design

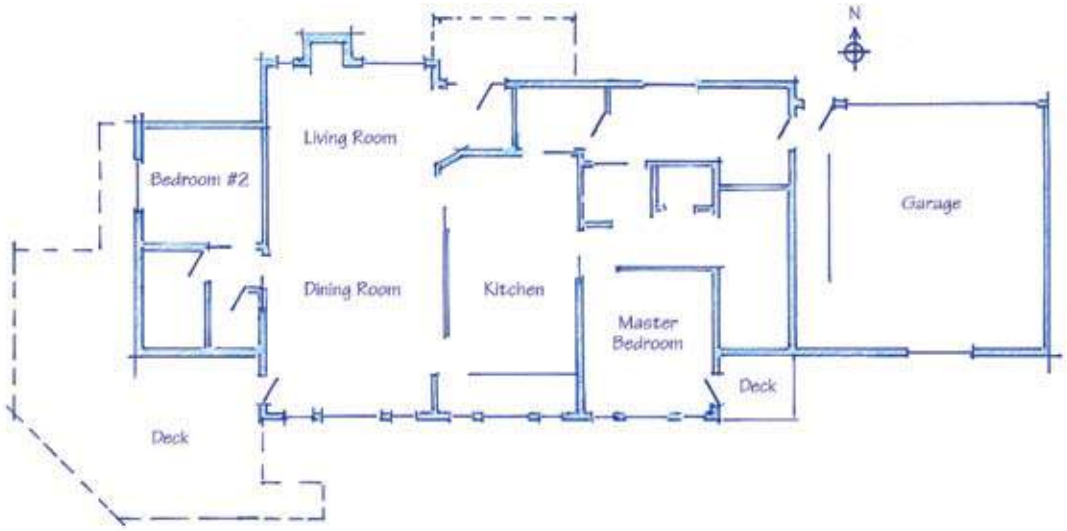
Solar panels on roof

Stitt Energy Systems would like to thank the following:

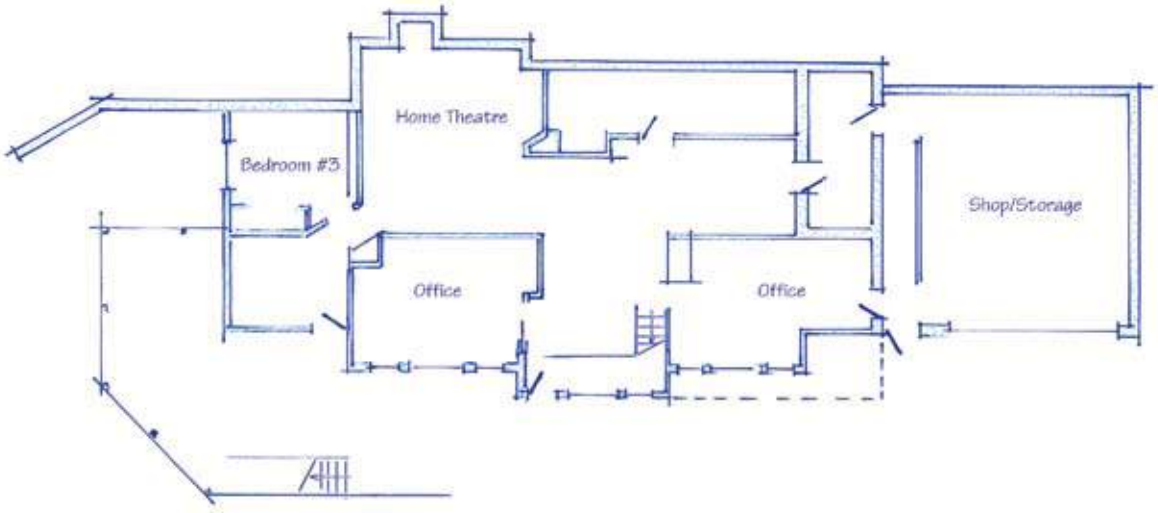
- Homeowners: Mitch Ross and Cheryl Marcum
- General Contractor: Ted Anderson, Anderson Construction, LLC
- Designer: Suzanne Lantz, Stitt Energy Systems, Inc.
- Project Manager: Mac Winningham, Stitt Energy Systems, Inc.

Floor Plan

Heat recovery ventilator



Main Level



Lower Level

Ferrier Builders, Inc.

Hot Climate, Custom Home

Years in business: 23
Average homes built per year: 7
Member: BA of Greater Fort Worth, HBA of Greater Dallas

House Description

Size: 2,990 s.f.
Location: Fort Worth, Texas
Construction cost: $140 per s.f.
Date completed: March 2007

Ferrier Builders would like to thank:
- Damian Pataluna with Fischer SIPs
- Bill Peck with William Peck & Associates
- Worth National Bank
- Guaranteed Watt Savers

Ferrier Builders, along with the homeowner, set a goal for this project of creating a home that was "extremely energy efficient, comfortable, durable, made of sustainable products, and which uses nearly zero energy." Ferrier Builders is witnessing a "huge increase" in the number of customers who want extremely energy-efficient homes. The company has found that its high performance home building niche, earned over more than 25 years, is attracting new customers.

Interestingly, many of these new customers are Baby Boomers, who are convinced that investing in energy and environmental features is a very wise investment for their retirement years. The EVHA judges couldn't agree more, and found that Ferrier Builders presented an "excellent package of features and a really good envelope," using an "energetic and holistic approach."

Foam insulation on crawlspace wall

Energy Features

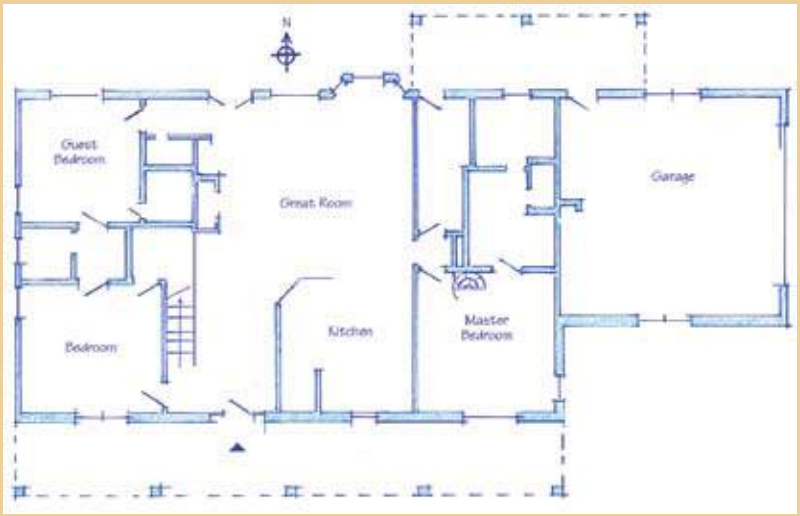
Foundation: Conditioned crawlspace; R-15 to R-24 rigid foam insulation
Wall Construction: R-24 structural insulated panels (SIPs)
Rim Joist Insulation: R-24 SIPs
Roof Construction: R-34 SIPs with exposed beams
Windows: Low-e, gas-filled fiberglass; U-0.31; SHGC 0.32
HVAC: 19 SEER air source heat pump with multi-zone control; central-fan integrated whole-house ventilation
Ducts: All ducts in conditioned space and fiber-mastic sealed
Water Heating: 574 s.f. concentrating solar water heating panels with 80-gallon storage and 50-gallon propane auxiliary; all hot water lines insulated
Lighting: 100% fluorescent (15% dedicated fluorescent fixtures)
Appliances: ENERGY STAR refrigerator, dishwasher, washer
Duct Leakage Test: 25 CFM to exterior at 25 Pa; 27 CFM total at 25 Pa
Blower Door Test: 3.35 ACH50
HERS Index: 47
Innovative Features: Tubular skylights; programmable thermostat; lighting controls; PEX manifold plumbing system; drainwater heat recovery; multi-zone HVAC; passive solar design

Structural insulated panel

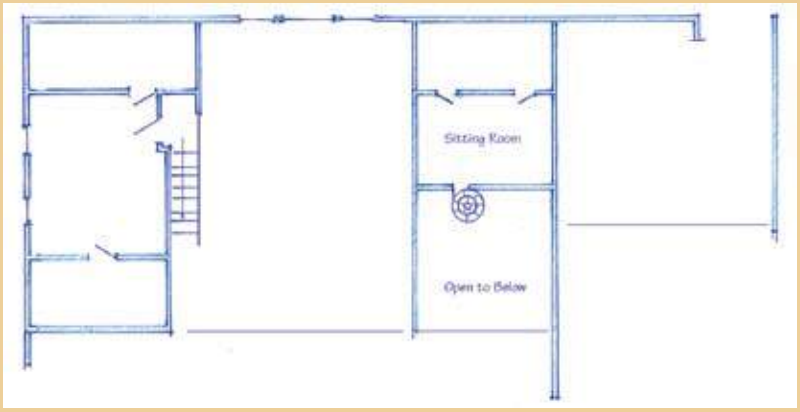
ENERGY STAR washer/dryer

Overhang for shading

Floor Plan



First Floor



Second Floor

ENERGY VALUE SM
HOUSING AWARD
2008
Gold Winner

Wilshire Homes

Hot Climate, Production Home

Years in business: 16
Average homes built per year: 700
Member: Greater Houston BA

House Description

Size: 3,659 s.f.
Location: Houston, Texas
Construction cost: $67 per s.f.
Date completed: March 2007

A large production builder, Wilshire Homes has used its status as an energy-efficient home builder to differentiate its brand in the Houston market. Yet, its commitment of energy efficiency is not just a marketing strategy—the company was established with a commitment to building not only the most energy-efficient production homes in Houston, but also the most environmentally friendly. Apparently, the strategy is working. "Wilshire Homes has an overall package of energy-efficiency measures that is quite good," according to the EVHA judges.

Wilshire Homes proves that it is possible to remain price competitive while offering a highly-efficient home. To keep costs low, it incorporates resource-efficiency measures which not only cut costs, but are also good for the environment.

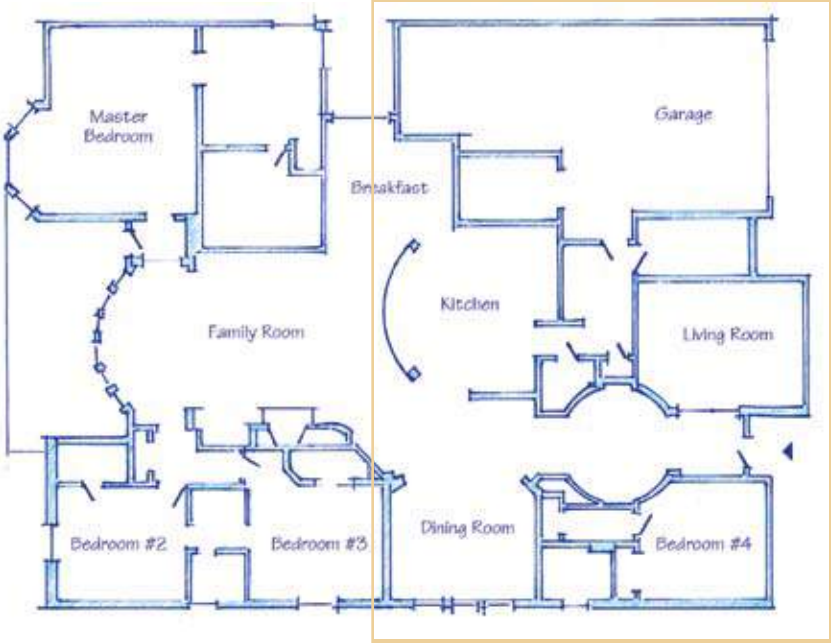
Energy Features

Foundation: Slab-on-grade
Wall Construction: 2x4 @ 16" o.c. and 2x6 @ 24" o.c.
Wall Insulation: R-13 to R-15 fiberglass batt insulation; R-3 and R-5 foam tongue-and-groove sheathing
Rim Joist Insulation: R-5 rigid foam tongue-and-groove insulation
Roof Construction: I-joist
Ceiling Insulation: R-30 blown fiberglass
Windows: Low-E2 vinyl; U-0.37 to 0.88; SHGC 0.30 to 0.55
HVAC: 96 AFUE gas furnace; 14 SEER variable speed air conditioner; energy recovery ventilator
Ducts: 50% ducts in conditioned space; ducts insulated to R-6 and mastic sealed
Water Heating: 0.85 EF gas tankless water heater
Lighting: 50% fluorescent (10% dedicated fluorescent fixtures)
Appliances: ENERGY STAR dishwasher
Duct Leakage Test: 47 CFM to exterior at 25 Pa; 110 CFM total at 25 Pa
Blower Door Test: 3.6 ACH50
HERS Index: 66
Innovative Features: Radiant barrier roof decking; programmable thermostat; humidistat; PEX manifold plumbing; advanced framing; whole-house HEPA filtration system; physical termite barrier; formaldehyde-free insulation; airtight recessed can lights

Wilshire Homes would like to thank:
- Capital Air and Heat – Larry and John Romeo
- Builders First Source – Ian Fisher and Frank Mannion
- Amana Heating and Cooling – Craig Caffey
- Energy Sense – Kathy Howard
- Burciaga and Johnston – James Burciaga, Kathy Johnston and Lilly Supplee
- Dow – Frank Aranza
- LP Tech Shield

Water supply manifold

Floor Plan



First Floor

Attic blown-in fiberglass insulation

Tankless water heater

96 AFUE gas furnace

Energy recovery ventilator

Community Housing Partners

It's not surprising that Community Housing Partners, an unconventional builder, has produced a home that is not your typical home. Built on a city infill site, this home is not only energy efficient, but it is also environmentally sustainable. Through an integrated design process, Community Housing Partners worked to optimize building performance while creating a livable and functional space within the available budget. Through this design process, energy efficiency, durability, and sustainability were considered during every step—from architectural design through mechanical system design and materials selection. The result was a home with a "very nice package" of energy features, according to the EVHA judges.

Cold Climate, Affordable Home

Years in business: 32
Average homes built per year: 24
Member: New River Valley HBA

House Description

Size: 1,138 s.f.
Location: Blacksburg, Virginia
Construction cost: $82 per s.f.
Date completed: June 2006

Energy Features

Foundation: Slab-on-grade; R-7.5 slab edge and under slab insulation
Exterior Wall Construction: 2x6 @ 24" o.c.
Wall Insulation: R-21 cellulose cavity insulation; R-8 insulated headers
Rim Joist Insulation: R-5.5 polyurethane foam plus R-19 fiberglass batt
Roof Construction: Raised-heel roof trusses @ 24" o.c.
Ceiling Insulation: R-38 blown cellulose
Windows: Low-e, argon-filled vinyl-clad wood; U-0.32 to 0.34; SHGC 0.20 to 0.33
HVAC: 15 SEER, 8.1 HSPF air source heat pump
Ducts: All ducts in conditioned space and mastic sealed
Water Heating: 50-gallon, 0.91 EF electric water heater
Lighting: 78% fluorescent lighting (43% dedicated fluorescent fixtures)
Appliances: ENERGY STAR refrigerator, washer, and dishwasher
Duct Leakage Test: 40 CFM to exterior at 25 pa (total duct leakage not reported)
Blower Door Test: 5.67 ACH50
HERS Index: 73
Innovative Features: Advanced framing techniques including two-stud corners, in-line framing, right-sized headers, and design on 2-foot modules; lighting controls; dual-flush toilets; 65-gallon rain barrels for rainwater harvesting

Floor Plan

First Floor

Second Floor

Community Housing Partners would like to thank:
- Town of Blacksburg
- Virginia Department of Housing and Community Development
- Virginia Housing Development Authority
- Housing Assistance Council
- Federation of Appalachian Housing Enterprises

Veridian Homes

Veridian's grassroots marketing approach has truly set the company apart as a builder of high-quality, energy-efficient homes. In fact, more than three-quarters of Veridian's customers state that a key reason for selecting the company was its reputation for building energy-efficient homes with high indoor air quality.

Veridian's "Are You Seeing Stars?" campaign is raising awareness of the company's status as a 100 percent Wisconsin ENERGY STAR builder—with decals in all the home's windows, displays in furnished models, a billboard, and star-shaped giveaways. Through the local Green Built Home program, all homeowners are given a Green Built plaque for display.

ENERGY VALUE SM
HOUSING AWARD
2008
Silver Winner

Cold Climate, Affordable Home

Years in business: 50+
Average homes built per year: 526
Member: Madison Area BA

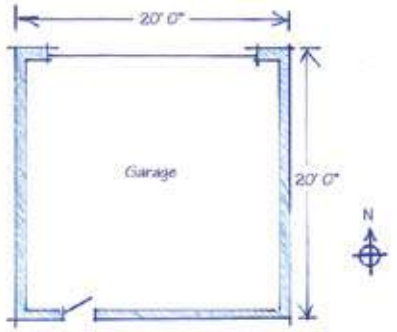
House Description

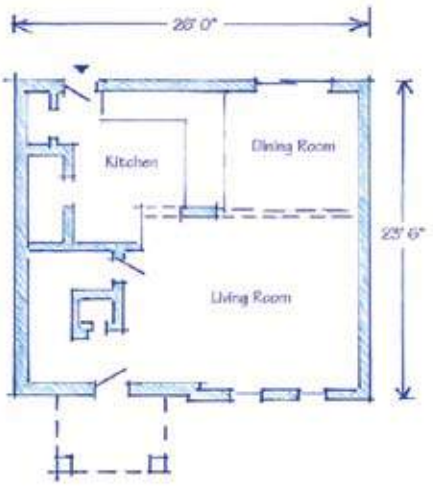
Size: 1,846 s.f.
Location: Madison, Wisconsin
Construction cost: $57 per s.f.
Date completed: November 2005

Energy Features

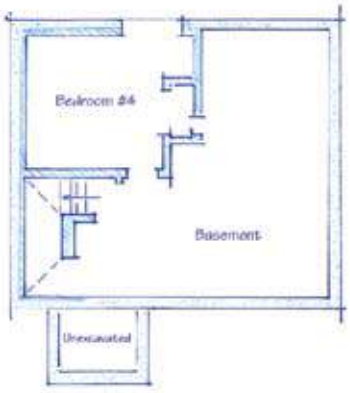
Foundation: R-5 exterior rigid foam on 8" concrete wall
Exterior Wall Construction: 2x6 @ 24" o.c.
Wall Insulation: R-19 cellulose
Rim Joist Insulation: R-19 cellulose
Roof Construction: Trusses @ 24" o.c.
Ceiling Insulation: R-40 blown cellulose
Windows: Low-e, gas-filled; U-0.31 to 0.32; SHGC 0.29 to 0.33
HVAC: 93 AFUE gas furnace; 10 SEER air conditioner; spot ventilation
Ducts: All ducts in conditioned space and sealed with foil tape
Water Heating: 40-gallon, 0.52 EF gas water heater
Lighting: 12% fluorescent (12% dedicated fluorescent fixtures)
Appliances: ENERGY STAR refrigerator and dishwasher
Duct Leakage Test: 10 CFM to exterior at 25 pa; 250 CFM total at 25 Pa
Blower Door Test: 3.6 ACH50
HERS Index: 69
Innovative Features: Programmable thermostat

Floor Plan

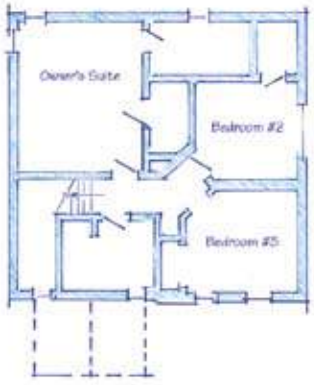




First Floor



Basement



Second Floor

ENERGY VALUE SM
HOUSING AWARD
2008
Silver Winner

The Cohousing Company

In the Cohousing Company's multifamily units, described by one EVHA judge as having an "incredibly energy-efficient structure," homeowners are enjoying utility bills in the range of $20 to $30 per month. The inherent efficiency of multifamily units, combined with energy-efficient construction details, whole-house fans, and passive solar design, result in homes that don't need any mechanical cooling.

The company has hosted several energy efficiency workshops with residents to discuss seasonal strategies for reducing energy use. According to the Cohousing Company, "It doesn't pay to create an organ if no one knows how to play it." Yet, the company credits the residents for energy conservation and states, "The community facilitates environmental stewardship … the sharing of information between community members has a huge impact on energy savings."

The Cohousing Company would like to thank:

- All of the architects and designers at McCamant & Durrett Architects in the Nevada City and Berkeley offices: Matt, Brad, and many more, plus all of our support staff
- CoHousing Partners
- Wonderland Hill Development
- Melas Engineering, the mechanical engineers
- MBC Engineering, the structural engineers
- Nevada County Engineering, the civil engineers
- Joe McProud, the landscape architect
- Russ Dupree, the acoustic engineer
- Peter Clyde at Greystone Industries, the construction consultant
- Tintle Construction, the builders, and BP Landscape, the talented subcontractor
- The Redbud Way cohousing residents and the community of Nevada City, who came forth to support the project

Moderate Climate, Multifamily Home

Years in business: 22
Average homes built per year: 80

House Description

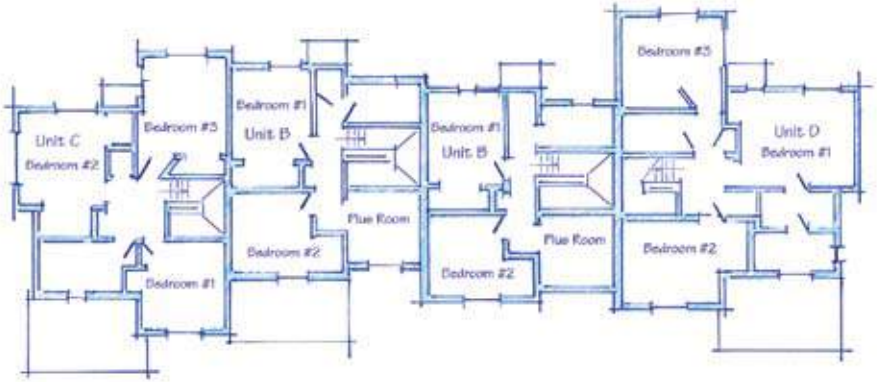
Size: 1,684 s.f.
Location: Nevada City, California
Construction cost: $95 per s.f.
Date completed: December 2005

Energy Features

Foundation: Unconditioned crawlspace with R-22 interior insulation
Wall Construction: 2x6, 2x8, and 2x10 @ 24" o.c.
Wall Insulation: R-22, R-28, R-34 wall spray cellulose
Rim Joist Insulation: R-22 spray cellulose
Roof Construction: Raised-heel truss
Ceiling Insulation: R-38 blown cellulose
Windows: Low-e vinyl windows; U-0.35; SHGC 0.27
HVAC: 98 AFUE boiler, whole-house fan
Ducts: No ductwork
Water Heating: 40 s.f. solar water heating preplumbed; 98 AFUE boiler auxiliary
Lighting: 100% fluorescent lighting (66% dedicated fluorescent fixtures)
Appliances: ENERGY STAR refrigerator, dishwasher, washer and dryer
Duct Leakage Test: No ductwork
Innovative Features: 1.32 kW photovoltaic system; radiant barrier; programmable thermostat; PEX plumbing manifold; advanced framing; passive solar design

Floor Plan

First Floor (above), Second Floor (below)



Energy Features

Foundation: Slab-on-grade
Wall Construction: 2x4 @ 16" o.c.
Wall Insulation: R-13 fiberglass batt plus R-4 foam sheathing
Roof Construction: Trusses @ 16" o.c.
Ceiling Insulation: R-38 fiberglass batt
Windows: Low-e vinyl; U-0.32 to 0.35; SHGC 0.33 to 0.34
HVAC: 80 AFUE gas furnace; 13 SEER air conditioner
Ducts: Less than 10% of ductwork in conditioned space; ducts sealed according to energy-efficiency program protocols
Water Heating: 0.82 EF tankless gas water heater
Lighting: 72% fluorescent (32% dedicated fluorescent fixtures)
Appliances: ENERGY STAR refrigerator, dishwasher, and washer
Duct Leakage Test: 60 CFM total at 25 Pa (leakage to exterior not reported)
Blower Door Test: 2.60 ACH50
Innovative Features: 2.3 kW photovoltaic system; radiant barrier; programmable thermostat; lighting controls

Moderate Climate, Production Home

Years in business: 86
Average homes built per year: 2,172
Member: Antelope Valley Chapter of the BIA of Southern California

House Description

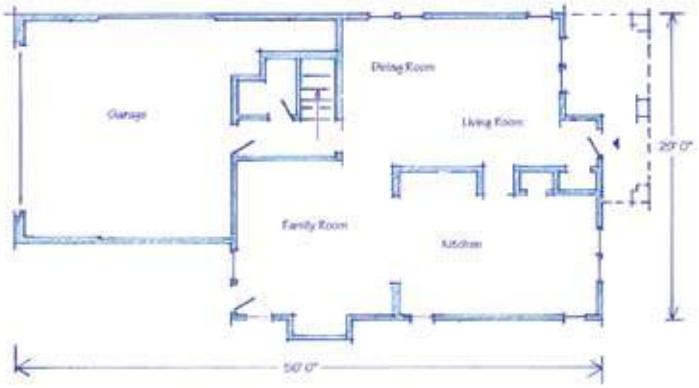
Size: 2,264 s.f.
Location: Sacramento, California
Construction cost: $58 per s.f.
Date completed: June 2007

Pardee Homes

Pardee Homes, a large regional production builder, has participated in the ComfortWise program since 1998. Through ComfortWise's turnkey program, Pardee and its subcontractors must adhere to strict guidelines and formal scopes of work developed by the program. For example, the ComfortWise program requires that a registered mechanical engineer design HVAC systems according to ACCA's Manuals J, D, and S and that installed ducts must pass the California Energy Commission's "Tight Duct" criteria of no more than 6 percent leakage. To further ensure quality installations, Pardee Homes applies the "Six Sigma" methodology—a series of practices designed to improve any process by eliminating defects—to continuously improve the construction process.

Pardee Homes would like to thank:
Consol; SunPower; Johns Manville; Western Insulation; Callander Associates landscaping; Carrier Bryant high efficiency HVAC & electronic air filtration; Buetler Corporation; iLevel by Weyerhaeuser; Jensen Framing; Rinnai tankless water heaters; Ferrari Plumbing; Zukor Design; Whirlpool; Kitchler and Juno lighting; Hunter low-flow sprinklers & rain sensor timers; Ad Land Venture; Performance Water Products; Environmental Aqua, Inc.; Pass & Seymour dimmers and timers; Cutler-Hammer PV compatible electrical panel; Marticus Electric; Beam central vacuum; Mohawk carpet made from recycled soda bottles; Builders Showcase Interiors; KTGY Architecture & Planning

Floor Plan



First Floor

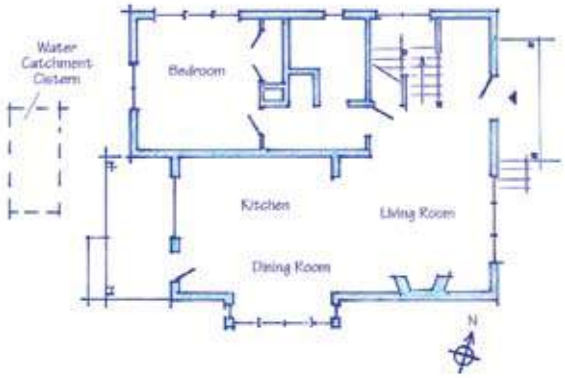
Second Floor

ENERGY VALUE SM
HOUSING AWARD
2008
Silver Winner

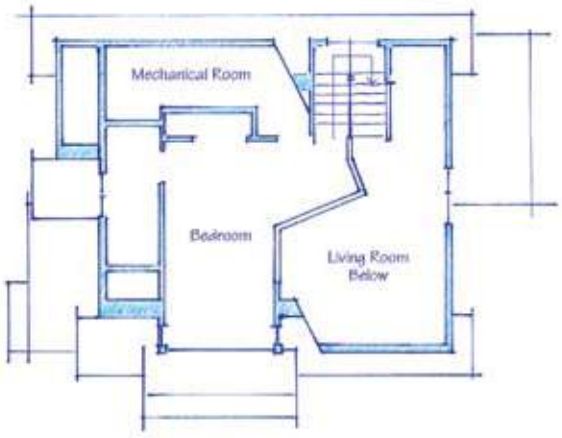
Sustainable Development, Inc.

This home, in the Pringle Creek development of Salem, Ore., is the culmination of extensive planning and careful consideration of energy- and resource-efficiency features. Working with the architect and experts from the Oregon Department of Energy, the builder designed a cottage which, according to the EVHA judges, incorporates "significant energy savings measures." Not only is the home energy efficient, but it incorporates resource efficiency and green building design with the same level of rigor. For example, all materials were sourced within 500 miles, streets are constructed of permeable asphalt, and a rainwater harvesting system supplies water to a drip-irrigation system for the drought-tolerant landscaping.

Floor Plan



First Floor



Second Floor

Moderate Climate, Production Home

Years in business: 2
Average homes built per year: 11 planned for 2007
Member: HBA of Marion and Polk Counties

House Description

Size: 1,346 s.f.
Location: Salem, Oregon
Construction cost: $233 per s.f.
Date completed: June 2007

Sustainable Development would like to thank:

- Owner/developer – Sustainable Development Inc.
- Design architecture – Opsis Architecture and Studio D
- Structural engineer – Catena Consulting Engineers
- Interiors – Jessica Helgerson Interior Design
- Energy consultants – Oregon Department of Energy
- Builder – Bilyeu Homes
- Framing – Pectra Construction
- Eco-landscape – DeSantis Landscaping
- Windows – Jeld-Wen Window + Doors

Energy Features

Foundation: R-15 insulated conditioned crawlspace
Exterior Wall Construction: 2x6 @ 24" o.c.
Wall Insulation: R-20 cellulose cavity insulation plus R-6 foam sheathing
Rim Joist Insulation: R-21 spray foam (1st floor) and R-21 wall spray cellulose (2nd floor)
Roof Construction: I-joists @ 24" o.c.
Ceiling Insulation: R-36 spray foam
Windows: Low-e, argon-filled custom clad-wood; U-0.31 to 0.33; SHGC 0.25 to 0.27
HVAC: 22 EER geothermal heat pump; energy recovery ventilator
Ducts: All ducts in conditioned space
Water Heating: 66 s.f. concentrating solar water heater; 120-gallon electric tank auxiliary
Lighting: 50% fluorescent
Appliances: ENERGY STAR refrigerator and dishwasher
Duct Leakage Test: 31 CFM total at 25 Pa (leakage to exterior not reported)
Blower Door Test: 0.13 ACH50
HERS Index: 34
Innovative Features: Advanced framing including two-stud corners and single top plate; rainscreen approach to siding attachment; 2.5 kW PV system; radiant barrier; programmable thermostat; passive solar design; 1,500-gallon rainwater harvesting system

R Godfrey Homes

R Godfrey Homes delivers what it calls the "most cost-effective home possible" by performing a pre-construction analysis with an energy rater and then ensuring those design details are implemented effectively by giving each home "a lot of individual attention" during construction. The builder works closely with material suppliers, insulators, HVAC contractors, and others to deliver what it calls "real value." Features unique to affordable homes, such as an unvented attic, are just part of the builder's strategy to keep costs low while providing what an EVHA judge described as an "excellent energy package." Yet, the builder recognizes that not everything is practical for the affordable homebuyer—for example, the builder has not yet implemented photovoltaic systems. They have considered the technology, but realize that it needs to wait until more systems are installed and the price declines before PV is suited to its affordable homebuyers.

R Godfrey Homes would like to thank:

- Airco Limited – HVAC contractor
- Russell Stauffer – framing contractor
- James Hardie – siding manufacturer
- Croft Insulation – foam insulation contractor
- TJ Miller Plumbing – plumbing contractor
- Roper Electric – electrical contractor
- Fort Worth Lumber – building material supplier
- Doug Garret, Joe Istiburek, Jim Sargent and all of the other folks that have conducted energy saving seminars that I have attended
- My lovely wife for her support, building my web page, designing brochures, DVDs, just generally keeping things running smoothly

Hot Climate, Affordable Home

Years in business: 30
Average homes built per year: 5 – 10
Member: Greater Fort Worth BA

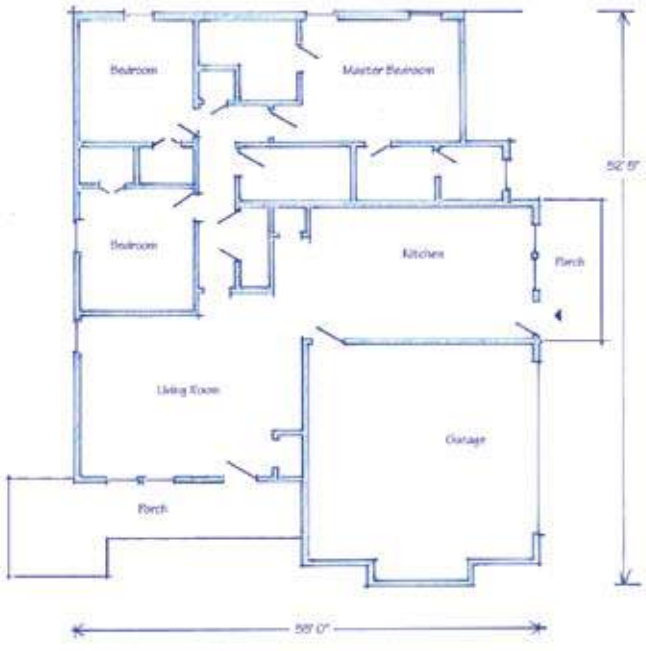
House Description

Size: 1,474 s.f.
Location: Glen Rose, Texas
Construction cost: $76 per s.f.
Date completed: May 2007

Energy Features

Foundation: Slab-on-grade
Wall Construction: 2x4 @ 16" o.c.
Wall Insulation: R-18 spray foam
Roof Construction: Unvented attic
Ceiling Insulation: R-38 spray polyurethane foam
Windows: Low-e, gas-filled vinyl; U-0.32; SHGC 0.32
HVAC: 14 SEER, 8.0 HSPF air source heat pump
Ducts: All ducts in conditioned space
Water Heating: 50-gallon, 0.95 EF electric water heater
Lighting: 100% fluorescent (no dedicated fluorescent fixtures)
Appliances: ENERGY STAR refrigerator, washer, and dishwasher
Duct Leakage Testing: 0 CFM to exterior at 25 Pa; 80 CFM total at 25 Pa
Blower Door Test: 5.28 ACH50
HERS Index: 72
Innovative Features: Advanced framing techniques including two-stud corners and ladder blocking; PEX manifold plumbing; programmable thermostat

Floor Plan



First Floor

John Wesley Miller Companies

As the downtown Tucson development Armory Park del Sol nears completion, it is a shining example of energy efficiency on the community scale. Not only is the location and neighborhood layout conducive to reducing car travel, each home is extremely energy efficient and includes solar hot water and photovoltaic systems for renewable energy production. This home, the second net-zero energy home in the development, received accolades from the judges for having "consistently good features" that contribute to a noteworthy 17 HERS index—indicating that almost all the energy used in the home is expected to be offset by the renewable energy production systems.

Energy Features

Foundation: Slab-on-grade with R-13 slab edge insulation
Wall Construction: 8" solid-grout CMU
Wall Insulation: R-13 exterior foam insulation
Roof Construction: I-joist framing
Ceiling Insulation: R-38 fiberglass batt plus R-6 rigid foam
Windows: Low-e, argon-filled vinyl; U-0.31 to 0.34; SHGC 0.19 to 0.30
HVAC: Air source heat pump; 17.9 SEER; 8.9 HSPF
Ducts: All ducts in conditioned space and sealed with mastic
Water Heating: 40 s.f. solar water heating collector with 80-gallon storage tank and tankless electric auxiliary
Lighting: 80% dedicated fluorescent fixtures
Appliances: ENERGY STAR refrigerator, dishwasher, washer
Duct Leakage Test: 0 CFM to exterior at 25 Pa; 22 CFM total at 25 Pa
Blower Door Test: 1.95 ACH50
HERS Index: 17 (with photovoltaic)
Innovative Features: 9.63 kW photovoltaic system; radiant barrier; tubular skylight; programmable thermostat; PEX manifold plumbing system; thermal mass wall system

Hot Climate, Custom Home

Years in business: 50+
Average homes built per year: 20
Member: Southern Arizona HBA

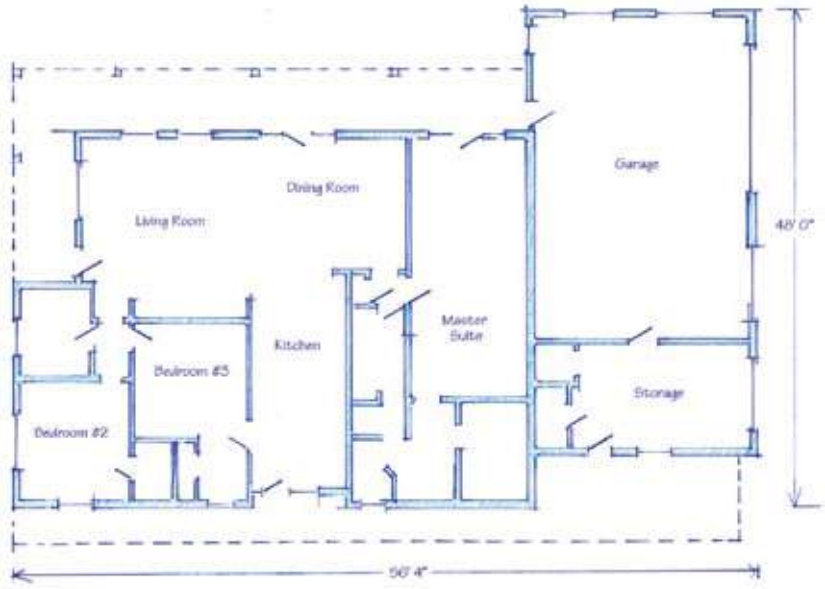
House Description

Size: 2,168 s.f.
Location: Tucson, Arizona
Construction cost: $186 per s.f.
Date completed: January 2007

John Wesley Miller Companies would like to thank:

- The Whirlpool Corporation
- Tucson Electric Power
- The Solar Store
- Breezeways, Inc.
- Trane
- Arizona Proscapes
- Oasis Water Harvesting

Floor Plan



First Floor

JUDGES

EVHA applications are reviewed by a six-member judging panel, which includes a mix of new and returning judges in the fields of engineering, construction, design, and marketing. The feedback that applicants receive from the EVHA judges is the most beneficial part of the application review process. Simply applying for the EVHA provides companies with unequalled access to the judges' expertise.

Being an EVHA judge is a major commitment. It takes about 20 to 40 hours for judges to conduct an independent preliminary evaluation of the applications, plus a one-day trip to the NAHB Research Center for the final judging. EVHA judges also volunteer their time and knowledge through speaking engagements at EVHA educational sessions and workshops.

A special thank you is extended to this year's judges for sharing their expertise and for their dedication to advancing energy efficiency through the EVHA.

Walt Auburn is a long-standing EVHA judge who currently serves as assistant director of the Maryland Energy Administration (MEA), and is responsible for the development and implementation of energy-efficiency programs in the residential, commercial, and industrial sectors. With MEA since July 2001, he has secured numerous federal Department of Energy and Environmental Protection Agency grants to educate Maryland consumers, businesses, and builders about energy efficiency. Auburn is certified as a RESNET Energy Rater and has been active in the energy arena for over 30 years through his work in a wide variety of energy, housing, and environmental management positions.

Judith Fosdick, president of Tierra Concrete Homes, Inc., returned to judge the competition for a second year. An active voice for renewable energy and sustainable building practices, Fosdick educates the public on green building principles, particularly passive solar design and high thermal mass construction, and participates in many industry associations including the Southeastern Colorado Renewable Energy Society. Fosdick also leads workshops on designing low-energy buildings using Energy 10, an analysis tool that illustrates the energy advantage of passive solar strategies. Fosdick's company is a former EVHA Gold and Silver winner, including Builder of the Year in 2002.

Amy E. Gardner, AIA, is a first-time EVHA judge who brings over 20 years experience in architecture to the panel. A founding member of Maryland-based Gardner Mohr Architects, Gardner is also an associate professor at the University of Maryland School of Architecture and a faculty advisor for the university's Solar Decathlon team. Through her many industry affiliations and architectural work, Gardner promotes planning and building with sustainable, integrated design processes; and changing the way buildings are invented, designed and built to inspire communities to live synchronistically with the environment.

David G. Hales is a returning EVHA judge who brings over 25 years experience in building science and construction. In his current role as a building systems specialist with the Washington State University Energy Program, Hales provides technical assistance, curriculum development, training, and demonstrations for utilities and the construction industry supporting energy-efficient design and construction. Hales' distinguished background in energy education includes a broad range of expertise in residential energy codes, home diagnostics, and sustainable construction.

Dr. Ali A. Jalalzadeh is a senior engineer at the National Renewable Energy Laboratory (NREL) where he currently supports the NREL Building America Program as a researcher and technical monitor. Since joining NREL in 2001, he has led the combined heat and power (CHP) research efforts and initiated and conducted numerous analytical and field studies on CHP and HVAC systems. Dr. Jalalzadeh is a veteran EVHA judge who brings continuity, an extensive engineering background, and knowledge of building energy performance to the program.

Barb Yankie is President of Homes +, Inc., an Ohio based company established in 2000. This first-time EVHA judge provides energy efficiency audits, ENERGY STAR ratings, infrared diagnostic surveys, residential LEED certifications, and other testing services for residential and commercial structures. Yankie is a Certified HERS Rater, LEED Green Rater, and a Level II Thermographer, with more than 15 years experience in the building science/construction field. She has conducted training sessions for builders; insulation, HVAC, and framing contractors; realtors; and others.

PARTNERS

The **NAHB Research Center's** mission is to promote innovation in housing technology to improve the quality, durability, affordability, and environmental performance of homes and home building products. The Research Center was created in 1964 as a subsidiary of NAHB, and has established itself as *the* source for reliable, objective information and research on housing construction and development issues.

The **U.S. Department of Energy (DOE) Building America Program** is re engineering new and existing American homes for energy efficiency, energy security, and affordability. Building America works with the residential building industry to develop and implement innovative building energy systems innovations that save builders and home owners millions of dollars in construction and energy costs. This industry led, cost shared partnership program has the following goals:

- Reduce whole house energy use by 40 70% and reduce construction time and waste
- Encourage a systems engineering approach for design and construction of new homes
- Improve indoor air quality and comfort
- Integrate clean on site power systems
- Accelerate the development and adoption of high performance residential energy systems

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The **National Renewable Energy Laboratory** is the U.S. Department of Energy's premier laboratory for renewable energy research and development, and a lead lab for energy-efficiency research and development.

The **National Association of Home Builders (NAHB) Energy Subcommittee** is a branch of the NAHB Construction, Codes, and Standards standing committee and addresses energy related issues among that group.

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Additionally, Whirlpool Corporation received the ENERGY STAR® Sustained Excellence Award from the U.S. Department of Energy and the U.S. Environmental Protection Agency in both 2006 and 2007. The award was extended to Whirlpool Corporation for exhibiting outstanding environmental leadership year after year, while sustaining product and marketing excellence. This honor represents the company's eighth ENERGY STAR® Award in the nine years it has been awarded.

For more information on Whirlpool Corporation and its offerings for building professionals, please visit www.insideadvantage.com or call (800) 253-3977.

Broan-NuTone® is committed to making the indoor environment of our nation's homes more comfortable and healthy by developing technologically advanced products that improve environmental performance and overall air quality. Broan-NuTone is the world's leading manufacturer of residential ventilation and build-in convenience products—designing and engineering over 75 years of award-winning experience and technology into every product before it earns the Broan®, NuTone®, or Best by Broan® brand.

BuildingGreen, Inc., is committed to advancing environmentally responsible design and construction in buildings of all types. The EnergyValue Housing Awards provide a superb vehicle for increasing awareness about green design. We applaud the U.S. Department of Energy and the NAHB Research Center for hosting this awards program.

SEISCO International is the manufacturer of the Seisco tankless water heater, the only tankless water heater specifically designed for use in hard water applications. Seisco's patented PowerShare control technology utilizes a computer chip that fully modulates power equally to each of the heating elements ensuring that all elements operate at the lowest possible temperature. This virtually eliminates mineral build-up on the heating elements and prolongs element life. PowerShare technology also prevents disturbances (flicker) in lighting circuits. SEISCO has been associated with the National Association of Home Builders for many years and is dedicated to promoting efficient electric water heating.

Founded in 1982, **the Vinyl Institute (VI)** is a national, independent trade association representing the leading manufacturers of vinyl plastic resin, as well as makers of vinyl film and sheet products. VI's education and outreach program, "Vinyl in Design," is a comprehensive information resource for building design professionals on the attributes of vinyl in numerous applications in the built environment. Vinyl in Design promotes the versatility, durability, and energy efficiency of vinyl as a sustainable building material.

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GLOSSARY

Air Changes per Hour (ACH) Measurement of the air leakage rate of a building, specifically, the number of times each hour the total volume of air in a building is replaced by outdoor air. Typically expressed as a rate experienced under normal, atmospheric pressures or under some higher test pressure.

Annual Fuel Utilization Efficiency (AFUE) Seasonal efficiency of a gas-fired furnace or boiler. Takes into account cyclic operation. The higher the number, the more efficient the heating equipment.

Backdrafting Potentially hazardous condition in which the exhaust from combustion appliances does not properly exit the building. This can be due to a number of factors including a blocked flue or a pressure difference within the home.

Blower Door A large fan placed in an exterior doorway to pressurize or depressurize a building to determine its air leakage rate expressed in air changes per hour or cubic feet per minute.

Building America Program Building America Program is a private/public partnership sponsored by the U.S. Department of Energy that conducts research to find energy-efficient solutions for new and existing housing that can be implemented on a production basis. The program uses a systems engineering approach to home building and unites segments of the building industry that traditionally work independently of one another.

California Corner An Optimum Value Engineering technique that uses two studs (instead of the usual three or four) to make an exterior corner. The result is better insulation and use of fewer resources, in addition to cost savings. Several variations are possible.

Coefficient of Performance (COP) Measurement of the steady-state performance of electrically operated systems, including ground-source heat pumps. It is the ratio of useful energy output to purchased-energy input. Can also refer to gas-fired systems.

Combination System Heating system that uses the domestic water heater for both water and space heating. Hot water is typically piped to a heat exchanger (coil), where a fan blows air over the coil to produce heated air.

Condensing Furnace or Boiler High-efficiency systems that extract such a high percentage of the available energy from gas combustion that the water vapor in the burned gas (combustion products) condenses to liquid water before leaving the furnace.

Conditioned Space Area within a house that is heated and/or cooled. Conditioned space is separated from unconditioned space by a thermal envelope.

Desuperheater Device that takes waste heat extracted by heat pumps or air conditioners and uses it to heat domestic hot water.

Energy Efficiency Mortgage (EEM) EEMs recognize that the monthly energy bill savings from improved energy efficiency can more than offset the increased monthly mortgage cost attributed to energy-efficiency upgrades. Some products allow a higher loan-to-income or debt-to-income ratio while other newer, more innovative products finance 100 percent of all cost-effective, energy-efficiency upgrades in the mortgage, thereby eliminating any increased downpayment and requalification requirements.

Energy Efficiency Ratio (EER) Instantaneous efficiency of air conditioners measured at standard test conditions. The amount of cooling provided per unit of electricity purchased. The higher the EER, the more efficient the air conditioner.

Energy Factor (EF) Overall efficiency of a water heater or other appliance. The amount of hot water produced per unit of gas or electricity purchased. The higher the energy factor number, the more efficient the water heater.

ENERGY STAR Home ENERGY STAR qualified homes must achieve a minimum HERS Index score of 85 in climate zones 1–5, and 80 in climate zones 6–8. The ENERGY STAR Home Program is a program of the U.S. Environmental Protection Agency and the U.S. Department of Energy.

Envelope (Thermal or Building Envelope) The protective shell of a building that separates the inside environment from the outside environment; includes both an insulation layer and an air infiltration layer.

Flex-Duct Flexible ductwork made with an inner liner, a layer of insulation, and an outer covering of plastic.

Frost-Protected Shallow Foundation (FPSF) Foundation system in which foam insulation is placed around the perimeter of a foundation to reduce heat loss through the slab and/or below-grade walls, subsequently raising the frost depth of a building and allowing foundations to be as shallow as 16 inches below grade.

Geothermal System A heat pump that uses the ground or water as a heat source or sink. Efficiency is improved over air source heat pumps as the temperature of the ground or water is more constant and moderate than that of the air. Geothermal systems typically incorporate some method to contribute heat to the domestic hot water system.

Heat Pump Similar to an air conditioner but can operate in reverse to heat as well as cool. Transfers heat (usually from the air) from one location to another.

Heating Seasonal Performance Factor (HSPF) Efficiency of a heat pump in the heating mode, taking cycling into account; the amount of heating provided per unit of electricity purchased. The higher the HSPF number, the more efficient the heat pump.

High Efficiency Particle Accumulator (HEPA) An air filter that captures a high percent of all particles, including very small particles not captured by other types of filters.

Home Energy Rating System (HERS) Index HERS Index is a scoring system established by the Residential Energy Services Network (RESNET) in which a home built to the specifications of the HERS Reference Home (based on the 2006 International Energy Conservation Code) scores a HERS Index of 100, while a net zero energy home scores a HERS Index of 0. The lower a home's HERS Index, the more energy efficient it is in comparison to the HERS Reference Home. Each 1 point decrease in the HERS Index corresponds to a 1% reduction in energy consumption compared to the HERS Reference Home.

Insulating Concrete Form (ICF) Concrete form-wall constructed of foam insulation that remains in place after the concrete cures.

International Energy Conservation Code (IECC) A building code that addresses the minimum requirements of an energy-efficient building design including efficiency details for building envelopes, mechanical equipment, lighting, and appliances. Minimum requirements may be met using prescriptive and performance-related compliance paths. Provisions of the IECC are generally adopted, sometimes with modifications, by a local jurisdiction or on a state level.

Low-Emittance (Low-E) Glass Low-e glass has a thin, invisible coating that reduces the flow of radiant heat through windows. The most common coating reduces solar heat gain and increases resistance to radiant heat loss through windows.

Low-E2 Glass Also called solar control glass, is a good glass for hot climates because, in addition to improving the insulating ability of windows, it also limits solar heat gain by blocking passage of infrared and some ultraviolet rays. Solar control glass allows a higher level of visible light to pass through a window with less solar heat gain reduction than tinted window coatings.

Manual D Method developed by the Air Conditioning Contractors of America to design residential duct systems.

Manual J Method developed by the Air Conditioning Contractors of America to calculate residential heating and cooling loads.

Manual S Method developed by the Air Conditioning Contractors of America to select and size heating and cooling equipment to meet Manual J loads based on local climate and ambient conditions at the building site.

Mass Effect Describes the effect of a high-mass material on heating or cooling requirements. High mass materials such as concrete, used in floors and/or walls, can absorb and store significant amounts of thermal energy, which is later released. In some climates (those with lots of sunshine, low humidity, and large daily temperature fluctuations), high-mass materials can mean a reduction in cooling and heating requirements by delaying the time at which the energy is released into the house.

Mastic Strong, flexible material, which has a thick, creamy consistency when applied, used to seal ductwork. Also used to describe a type of ceramic tile adhesive.

Model Green Home Building Guidelines Released by the NAHB with the assistance of the NAHB Research Center, the Model Green Home Building Guidelines provides a practical, nationally-recognized baseline for determining minimum thresholds for resource-efficient, cost-effective home building. The guidelines are created for

mainstream homebuilders and highlight the ways a mainstream home builder can effectively weave environmental solutions holistically into a new home. Local associations can use the guidelines to create their own green home building programs.

Optimum Value Engineering (OVE) Sometimes referred to as Advanced Framing, OVE framing techniques use less lumber and therefore improve a structure's level of insulation. Techniques include 24-inch on center stud layout, single top plates, engineered header sizes, and special corner and wall intersection configurations.

R-Value Measure of the resistance of a material to heat flow. The higher the number, the greater is the resistance to heat flow.

Radiant Barrier A material that reflects radiant heat, typically a foil-faced or foil-like material used in roof systems. Used properly in some climates, it can reduce cooling requirements but has no positive effect on heating requirements.

Sealed Combustion Furnace Furnaces or boilers that draw air for combustion from outside the home directly into the burner compartment and vent exhaust gases directly to the outside. The systems eliminate the risk of backdrafting.

Seasonal Energy Efficiency Ratio (SEER) The amount of cooling provided by a central air conditioner per unit of electricity purchased; SEER is tested over the entire cooling season, taking cycling into account. The higher the SEER number, the more efficient the air conditioner. SEER, in contrast to EER and COP, takes into account the efficiency losses resulting from system cycling.

Sizing Calculation of the heat loss and heat gain for a building at "design temperatures" (those close to the maximum and minimum temperatures anticipated for a given location) in order to select heating and cooling equipment of sufficient capacity. Installing excess equipment capacity, or oversizing, is common but leads to inefficient operation and, for air conditioners, decreases the dehumidification. Calculations are most often done according to the ACCA Manual-J (or similar) procedure.

Solar Heat Gain Coefficient (SHGC) An indicator of the amount of solar radiation admitted through and absorbed by a window and subsequently released as heat indoors. SHGC is expressed as a number between 0 and 1—the higher the number, the more solar heat the window transmits.

Structural Insulated Panel (SIP) Load-bearing wall, roof, or floor panel made of foam sandwiched between two sheets of plywood or oriented strand board (OSB).

Unconditioned Space Area within the outermost shell of a house that is not heated or cooled—the area outside of the thermal envelope. Such areas typically include crawlspaces, attics, and garages.

U-Value Measurement of the thermal conductivity of a material, or inverse of R-value. The lower the U-value, the greater resistance to heat flow (lower U-value = higher R-value).

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