



Building America: Introduction
July 7, 2011

Stacey Rothgeb
Stacey.rothgeb@nrel.gov



- Reduce energy use in new and existing residential buildings
- Promote building science and systems engineering / integration approach
- “Do no harm”: Ensure safety, health and durability are maintained or improved
- Accelerate adoption of high performance technologies

www.buildingamerica.gov

15 Industry Research Teams



Alliance for Residential Building Innovation (ARBI)



NorthernSTAR Building America Partnership



Building America Retrofit Alliance (BARA)



Building Solutions

Habitat Cost Effective Energy Retrofit Program



Building Energy Efficient Homes for America (BeeHa)



Today's Speakers



W. Orlo Stitt - President, Stitt Energy Systems, Inc.
Mr. Stitt is a Certified Green Professional, serves on the RESNET Board of Directors, and is a member of National Association of Homebuilders (NAHB), NWAHBA, American Solar Energy Society, Energy and Environmental Building Association (EEBA) among others. Stitt Energy Systems is a multiple EVHA winner from the years 1996 – 2008.



Don Ferrier – President, Ferrier Builders, Inc. and Ferrier Custom Homes
Mr. Ferrier has been building homes since 1984 with a focus on energy efficient construction with Structural Insulated Panels. He serves on NAHB's Green Building Subcommittee Board. Ferrier Custom Homes is the 2005, 2006, 2007, 2008 and 2009 Energy Value Housing Award recipient for the construction of the most energy efficient elite homes in a hot climate.



Amber Wood – Engineer, NAHB Research Center
Ms. Wood oversees engineering research projects focusing on the energy performance of residential construction. She assists with the Energy Value Housing Award (EVHA) program and is involved in green building through the National Green Building ANSI Standard Development, as well as work with the Building America program.



Debra Sagan – Program Coordinator, NAHB Research Center
Ms. Sagan joined the NAHB Research Center in September 2008 and serves at the program coordinator of the EVHA program. She has been involved in the design and construction of energy efficient homes since the construction of her own near zero energy home in PA in 2004 and earned Certified Green Professional Certification from NAHB in 2008.

An Introduction to the EnergyValue Housing Awards (EVHA): Everything You Should Know to Complete a Quality Application

Welcome to the Webinar! We will start at 11:00 a.m. Eastern Standard Time

Be sure that you are also dialed into the telephone conference call:

Dial-in number: 877-918-3035; Pass code: 3121857

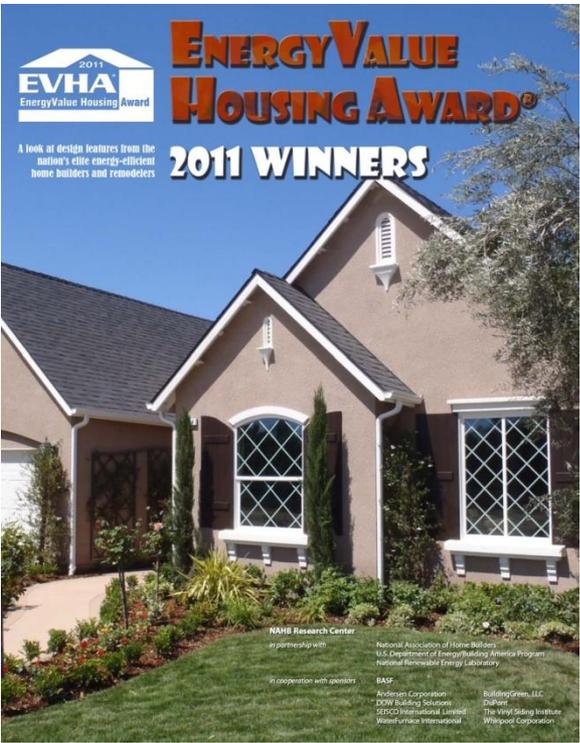
(If asked for a PIN #, press *0)

Download the presentation at <http://www.buildings.energy.gov/webinars.html>

There will be a verbal Q&A session at the end of each speaker's presentation. Submit your questions by hitting *1 on your phone, and the Operator will put you in the queue to ask your question.

7/7/2011





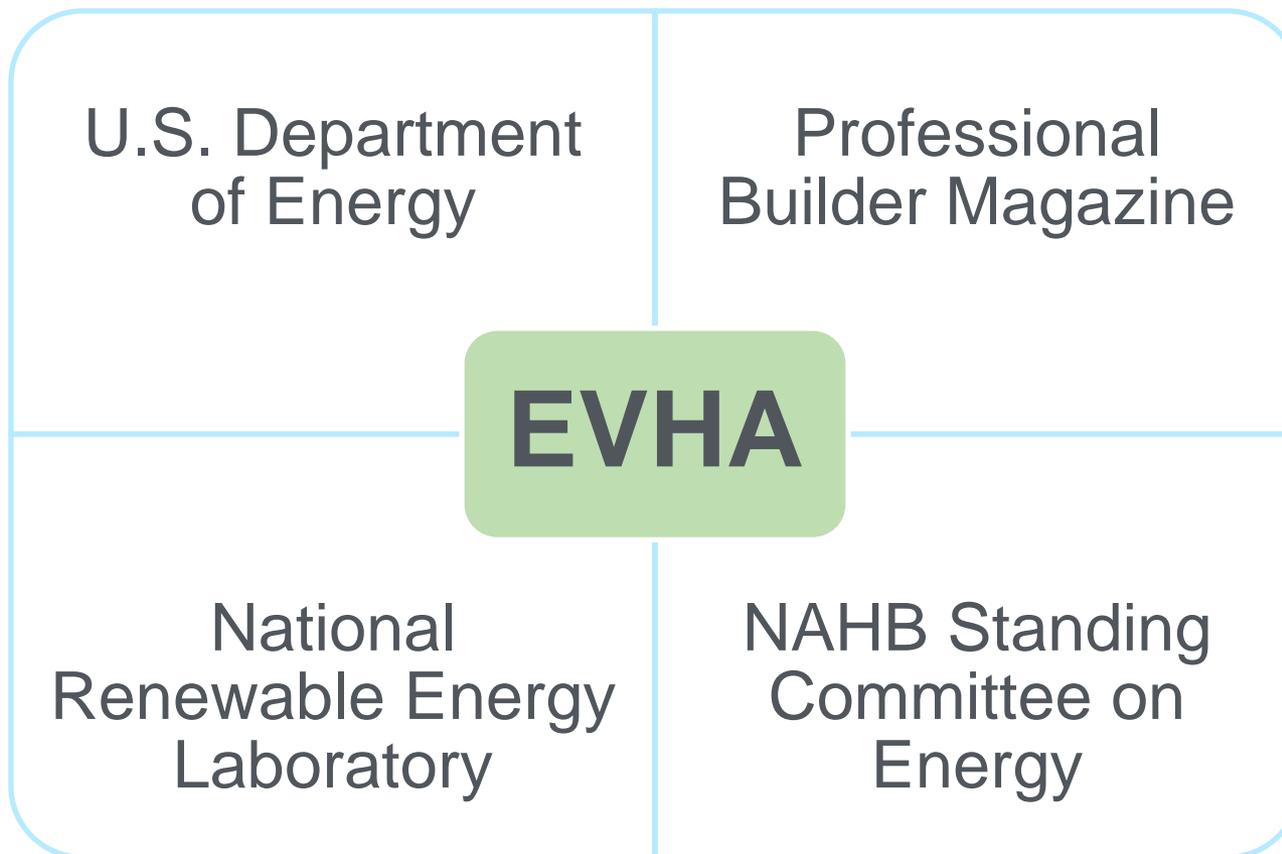
Everything You Should Know to Complete a Quality Application

Title: An Introduction to the EnergyValue Housing Awards

Date July 07, 2011



History







1996 Climate Regions

Cold

Moderate

Hot
Humid

Hot
Dry



Winner

1996 Categories

Production
Under 2000 sf

Production
Over 2001 sf

Innovative/
Advanced

Custom
Under 2000 sf

Custom
Over 2001 sf

Community



Orlo Stitt, President,
Stitt Energy Systems,
Rogers, AR

“energy efficiency is not a sideline for our company. This is what we do, what our reputation is based on, and what we are committed to do in the future.”



Assessing NREL's and NAHB Research Center's / EnergyValue Housing Awards

Stitt Energy Systems, Inc.

Orlo Stitt, President

July 7, 2011

NREL EnergyValue Competition

- Stitt Energy Systems entered 8 years
 - 1996: 1 award
 - 1997: 2 awards
 - 1998: 2 awards
 - 1999: 2 awards, plus Builder of the Year
 - 2001: 3 awards
 - 2003: 4 awards
 - 2006: 1 award, plus People's Choice
 - 2008: 1 award, plus People's Choice



1996 EnergyValue: Gold, Moderate Climate, Custom Category



1997 EnergyValue: Silver, Moderate Climate, Innovative/Advanced Category



01 15 '98

1997 EnergyValue: Gold, Moderate Climate, Custom Category

Stitt Energy Systems, Inc. | www.stittenergy.com | info@stittenergy.com | 800.367.7374



1998 EnergyValue: Silver, Moderate Climate, Custom Category



1998 EnergyValue: Gold, Moderate Climate, Affordable Category



1999 EnergyValue: Gold, Moderate Climate, Custom Category
“Builder of the Year”



1999 EnergyValue: Silver, Moderate Climate, Affordable Category



2001 EnergyValue: Silver, Moderate Climate, Custom Category



2001 EnergyValue: Silver, Moderate Climate, Affordable Category



16:38

2001 EnergyValue: Gold, Moderate Climate, Innovative/Advanced Category



2003 EnergyValue: Gold, Cold Climate, Custom Category

Stitt Energy Systems, Inc. | www.stittenergy.com | info@stittenergy.com | 800.367.7374



2003 EnergyValue: Gold, Moderate Climate, Custom Category



2003 EnergyValue: Gold, Moderate Climate, Affordable Category



2003 EnergyValue: Silver, Moderate Climate, Affordable Category

Stitt Energy Systems, Inc. | www.stittenergy.com | info@stittenergy.com | 800.367.7374



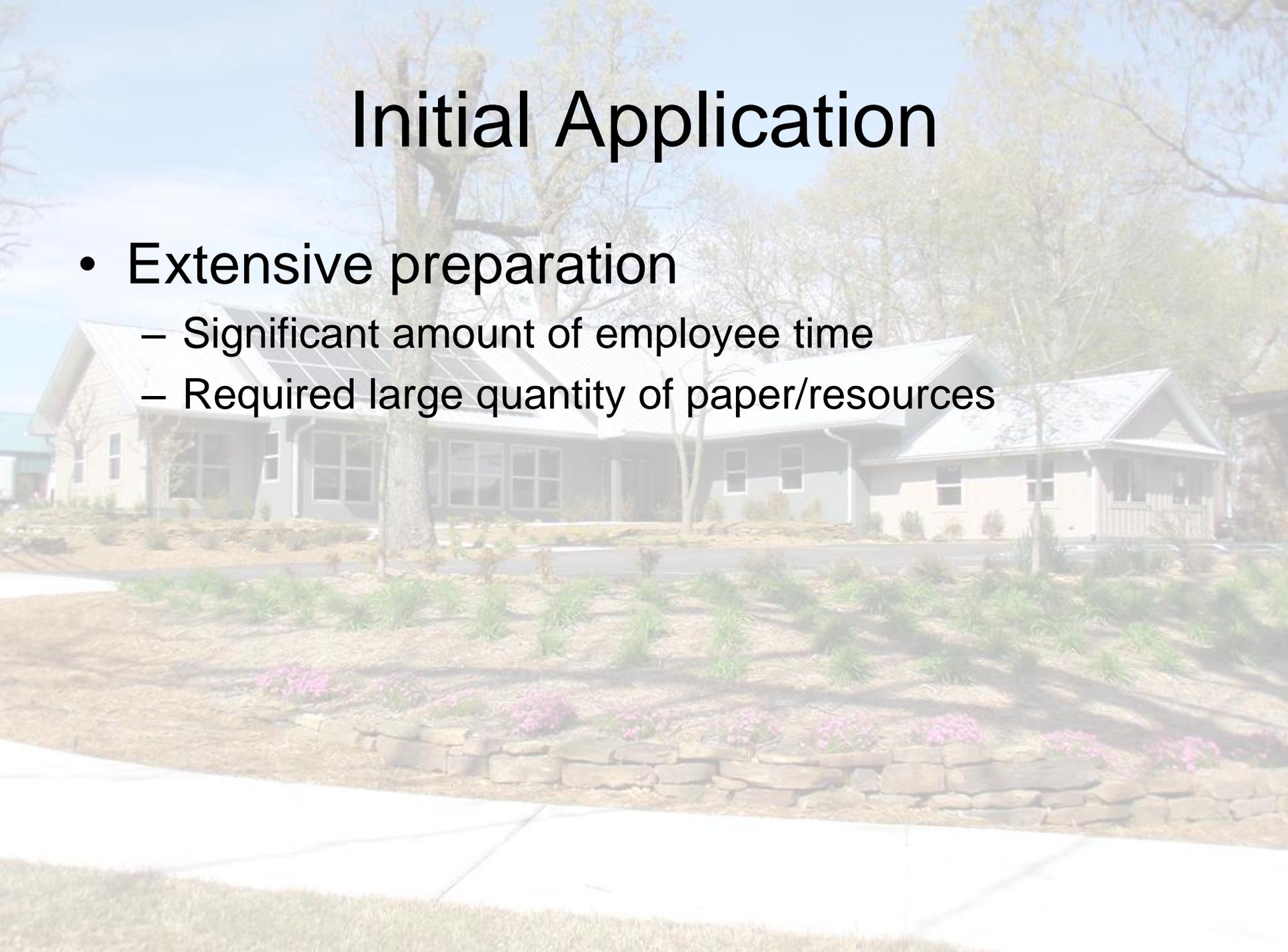
2006 EnergyValue: Gold, Moderate Climate, Custom Category
People's Choice Award



2008 EnergyValue: Gold, Moderate Climate, Custom Category
People's Choice Award

Initial Application

- Extensive preparation
 - Significant amount of employee time
 - Required large quantity of paper/resources



Later Applications

- Reduced preparation time
 - Staff familiar with guidelines
 - Still required large quantity of paper/resources



Value for Builders

- Personal and corporate confirmation that we were “doing the right things” and going in the right direction.
- Gave company management conviction to make energy efficiency the primary focus for the future.
- Opportunity for “free” publicity
- Supported marketing efforts in brochures and seminars.
- Provided 3rd party verification of home performance and value—for the customer and us.
- Substantiated/differentiated building quality between our company and other builders.
- Offered friendly competition amongst a unique group of builders.

Value For Homeowners

- Makes them feel good – they are a “winner” and it confirms their decision to “take a chance” by going for optimum energy efficiency.
- They can tell their friends, relatives and neighbors, “I told you so.”
- Homeowners truly enjoy talking to others, including prospective customers for the company, and sharing their commitment to efficiency and the features of their home.
- They look forward to receiving their utility bills and then bragging about them—rather than dreading opening the envelope—a different kind of “comfort.”

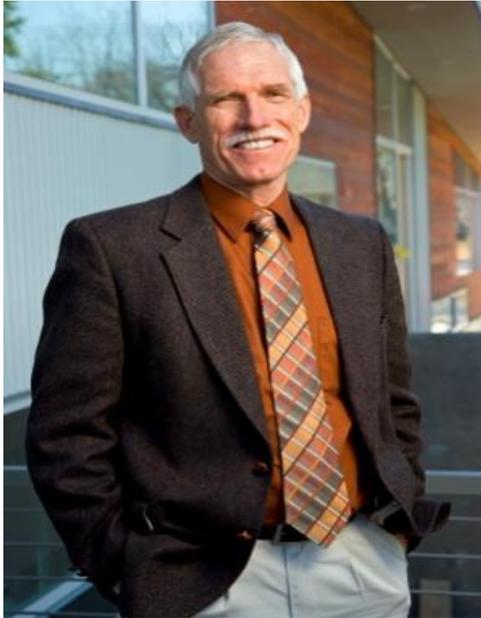


Questions for Orlo Stitt

221 Builders/Remodelers

570 Homes Entered

258 Awards



Don Ferrier, President
Ferrier Custom Homes,
Fort Worth, TX

Ferrier Custom Homes Mission...

....to advance, communicate and facilitate energy-efficient and sustainable building practices to the home building industry and into the homes and structures we build.

Simply put, we're looking to build smarter, and help others do the same.

Ferrier Custom Homes

Winner: 2005, 2006, 2007, 2008, 2009, 2010, 2011



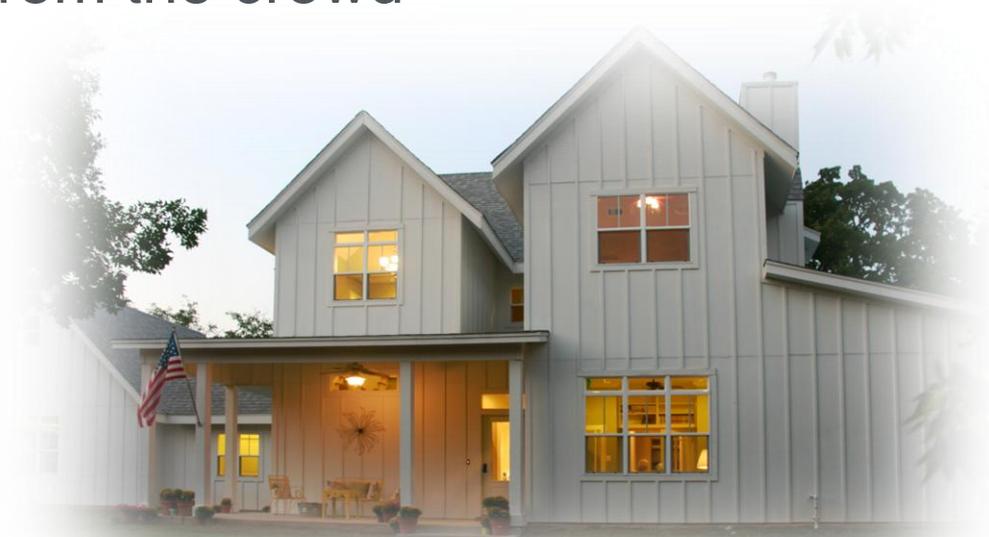
**2006 Hot Climate
Custom Home**



**2011 Hot Climate
Custom Home**

Benefits of Winning

- Distinguishes us apart from the crowd
- Third party recognition
- Homeowner benefit
- Publicity
- Judges' comments
- Systematize the way we collect info on our homes



Lessons Learned

- More detailed documentation of projects
- Judges' perspective on applications
- Learn from competition
- Application process efficiencies





- 5,125 sf
- Average monthly electric bill \$133
- All electric home











- 2,038 sf
- \$75 average monthly electric bill







- 2,990 sf
- \$125 average monthly electric bill



Questions for Don Ferrier



2012 Climate Regions

HDD less than 3,000 &
CDD greater than 2,000

Hot

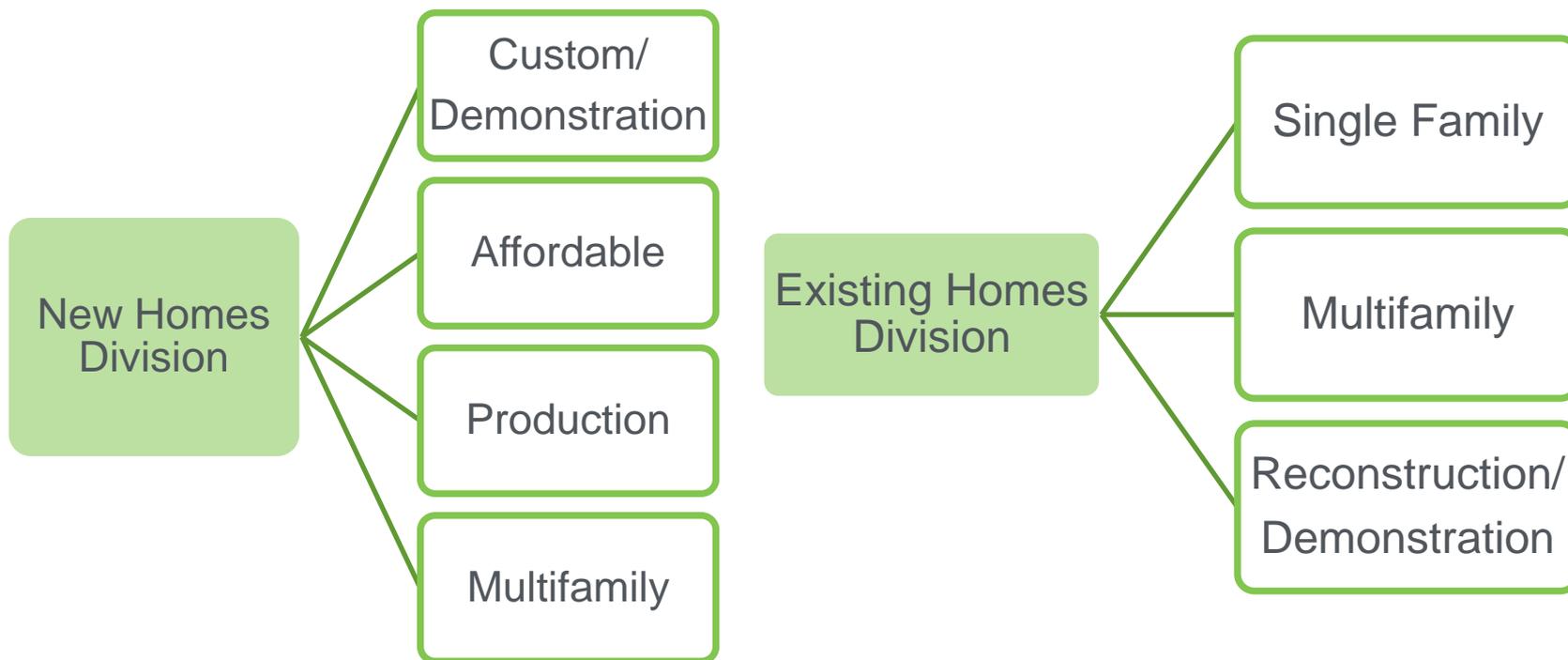
HDD greater
than 5,500

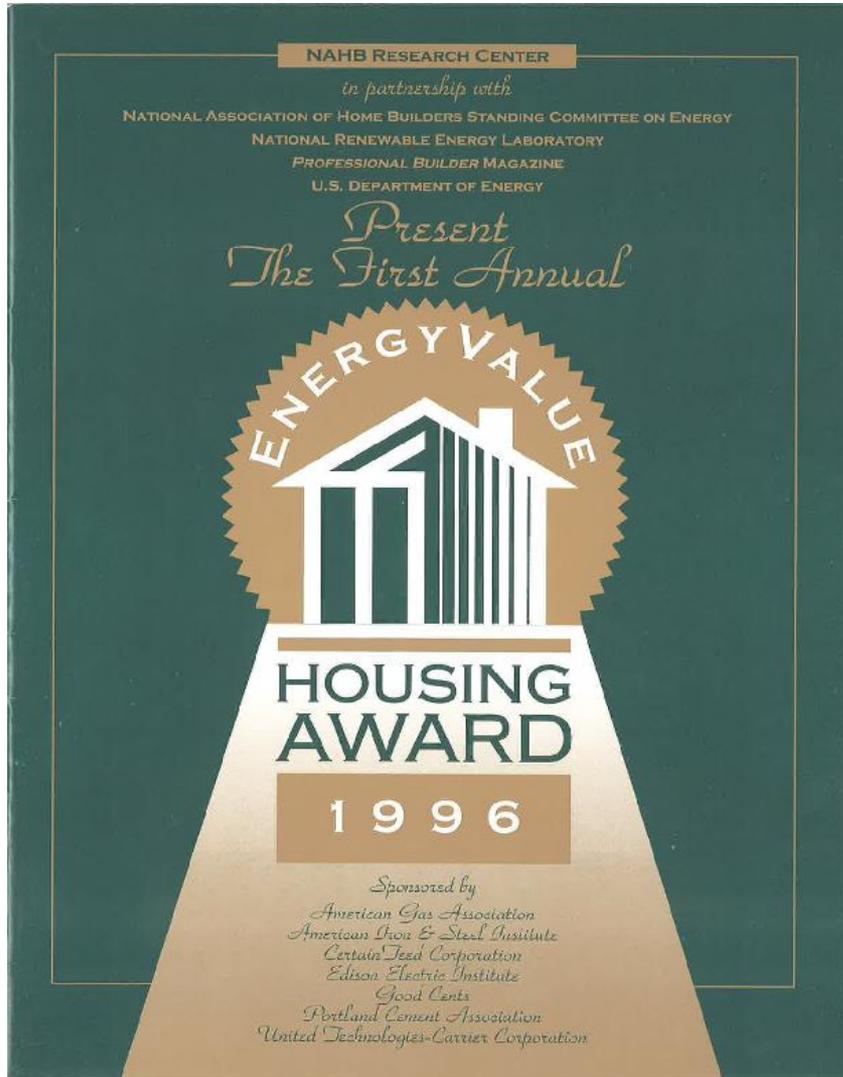
Cold

Moderate

3,000 to 5,500 HDD or
HDD less than 3,000 &
CDD less than 2,000

2012 Categories





1996



THAYER STREET ASSOCIATES, INC.

ATTACHED HOUSING in the COLD NORTH CLIMATE REGION is awarded to Thayer Street Associates, Inc. for Pine Street Chaletown in Sudbury, MA, integral to the success of the project was Bruce Goldstein, architect/president, and local utility representative, James Enright, Energy Granted Home Program Administrator for Western Massachusetts Electric Company. The six duplex units range in size from 1,350 to 1,500 square feet with 60 square foot finished basements.

BEST PRACTICES

- The Energy Granted Home (EGH) Program, sponsored by Western Massachusetts Electric Company, provides a "turn-key" approach to energy-efficient construction. Representative visits to an subject and field training. Energy modeling is performed in the construction, with inspections during construction and performance testing with a cover door upon completion. Because attention to long-term durability is ensured through effective system design.
- The project features a combination of 1,2-penetration, daylighting, and a ground-source heat pump. One judge called the design "sensitive application of innovative design and products." The critical consideration relies on simple mechanical ventilation that uses an exhaust-only system, which is easily deconstructed from ceiling-shelf parts and installed at low cost. It yields high efficiency and good indoor air quality. Knees are sized, oriented and installed to accommodate photovoltaics for the future electrical needs of such houses. The small footprints and compacted lots places require the volume to condition.
- Advanced framing had uses "value engineered" details to increase energy efficiency and systems tasks. The "staggered" wall assembly consists of 2x6 studs at 24 inches o.c., with a 2x4 stud at 12 inches o.c. installed horizontally on the sheathing. The assembly creates a 7-inch wall cavity filled with 3 1/2-blows of loose-fill insulation and little thermal bridging.
- Only 1/3 of a year of project needs was dominated. Waste was sorted into bins. Curbside and model were recycled. Drywall, gypsum, and rigid insulation were sorted for reuse and would be used on sites for some time.
- Residents designed the project through a consensus process that resulted in the following design criteria: energy efficiency, site preservation, principles of community, citizen participation, and sustainability.
- Community design concepts were used to develop more attractive and sustainable housing that requires less on-site energy, cluster site design, maximized open space and minimized infrastructure needs and costs. Parking areas were preserved for shade and shelter.

For more information, contact

Thayer Street Associates, Inc. • 16 Hayer Street
S. Dorrfield, MA 01573 • (413) 663-4318
Bruce Goldstein, Architect • 115 The Street
Architect, MA 01502 • (413) 549-5516



TIMBERS TO TRIM

HOME LESS THAN 2,000 SQUARE FEET in the COLD NORTH CLIMATE REGION is awarded to Timbers to Trim in Pitts- brookfield, MA, for the Brown residential workshop. Lynn D'Alessio, owner of Timbers to Trim, has been in business for 26 years and specializes in custom cabinets and improvements but also builds custom houses such as the winning entry.

BEST PRACTICES

- Lynn D'Alessio is a certified Energy Granted Home (EGH) builder and participant in the program, as sponsored by Massachusetts Electric. An EGH representative analyzes projected energy usage based on house plans using "Field Design." During construction, the representative performs a job check and issues a final report. After the final inspection is passed, a report of energy usage is installed.
- This 1,728-square-foot residential workshop uses 4-inch thick high-density polyisocyanurate insulation on the exterior walls and 22-inch thick rigid insulation on the interiors of the walls. Any ceiling in the attic ceiling is placed between the joists to provide a below-the-ceiling vapor barrier; thus, there are no electrical penetrations through the polyisocyanurate vapor barrier. Rafter joists are covered with 2x4s; instead, they are raised above the ceiling joists to permit the placement of extra insulation near the joists.
- All exterior wall headers are supported by 2 inches of blown-in extra rigid insulation. A geothermal heat pump supplies heating and air conditioning and helps heat the water during the summer. The hot water heater uses an electric heat pump and gains heat in winter from the ventilation exhaust air.
- From October 1996 through April 1995, the building cost \$273 to heat. Air conditioning from May through July cost only \$25.
- D'Alessio markets Timbers to Trim Carpenter and EGH by word of mouth and direct mail. He demonstrates for customers the benefits of air quality and cost savings associated with no fan filter, vermiculite, light weight concrete, houses compared to the average house. An EGH video that highlights construction techniques and other advantages of EGH homes is available for customers.

For more information, contact

Timbers to Trim • 304 Longhill Rd.
West Pittsfield, MA 01285 • (413) 435-5104

2011



New Homes - Slover



Energy Features

Foundation: 16" concrete walls - 1/2" 9 fiber glass batts w/ 1/2" foil facing
Walls: 2x6 studs - 1/2" 9 fiber glass batts w/ 1/2" foil facing
Roof: 2x6 studs - 1/2" 9 fiber glass batts w/ 1/2" foil facing
Attic: 12" rigid insulation
Floor: 2x10 joists - 1/2" 9 fiber glass batts w/ 1/2" foil facing
Ducts: All ducts are conditioned space. Minimal duct leakage.
Mechanical: High efficiency gas furnace, high efficiency gas boiler, ductless mini-split heat pump, central air conditioning.
Appliances: 14 SEER A/C, 13 SEER gas furnace, 95% efficient water heater, Energy Star dishwasher, Energy Star refrigerator, Energy Star washer/dryer.
Energy Star certified home.
GreenSource Building Certification Program, # 114946. EPA's GreenSource Building Certification Program, # 114946.



Moderate Climate, Production Home

Through its marketing efforts that focus on energy efficiency and green building, Production Builder Baldwin Homes is educating not only prospective buyers but also the community at large. In its model home, that is open for tours, customers show "behind the wall" energy features and numbered signs throughout the home correspond to an easily understood guide that explains each green feature on the self-guided tour. For buyers, the aesthetically-pleasing homeowners' manual describes the operation and maintenance of high performance homes.

Company Overview

Years in business: 11
Average homes built per year: 20
Whisper Home Builders Association of Maryland

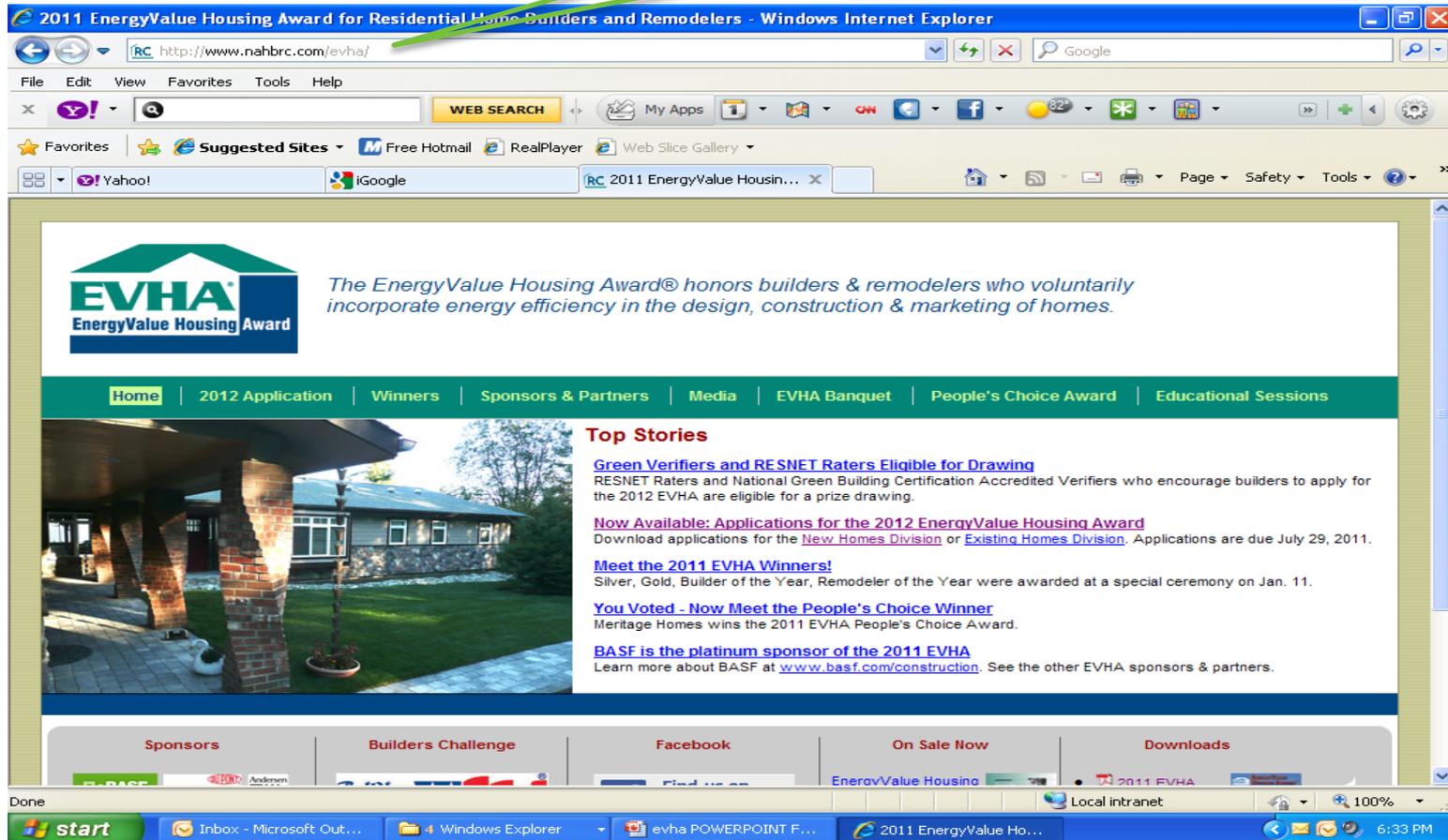
Home Overview

Size: 1,711 sq. ft. w/ air conditioning
Location: Gambrill, Maryland
Construction cost: \$112,000
Completion date: February 2010



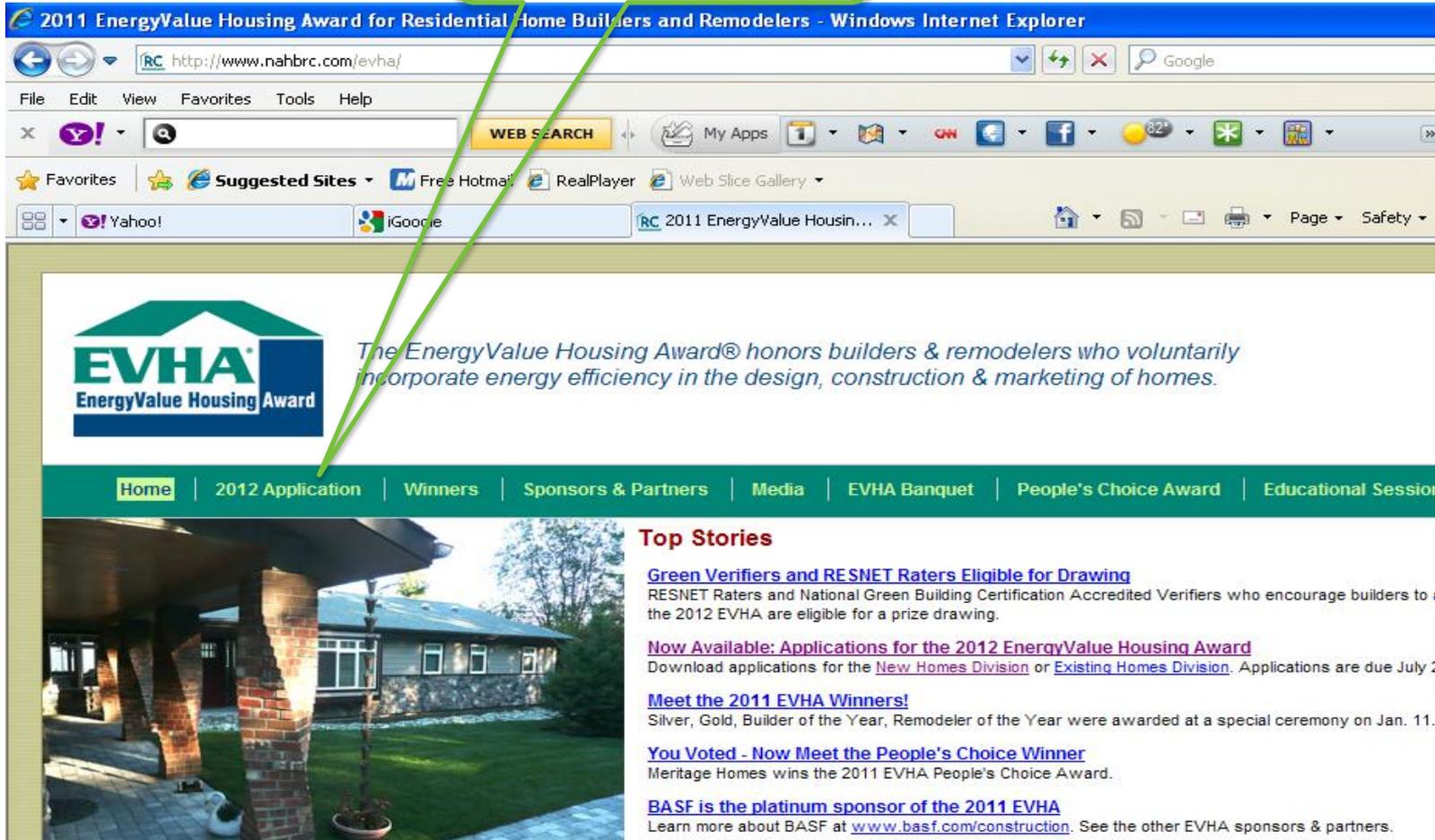
Getting Started

www.nahbrc.com/evha



The screenshot shows a Windows Internet Explorer browser window displaying the EVHA website. The address bar shows the URL <http://www.nahbrc.com/evha/>. The website header features the EVHA logo and the tagline: "The EnergyValue Housing Award® honors builders & remodelers who voluntarily incorporate energy efficiency in the design, construction & marketing of homes." Below the header is a navigation menu with links for Home, 2012 Application, Winners, Sponsors & Partners, Media, EVHA Banquet, People's Choice Award, and Educational Sessions. The main content area is titled "Top Stories" and includes several news items with blue hyperlinks: "Green Verifiers and RESNET Raters Eligible for Drawing", "Now Available: Applications for the 2012 EnergyValue Housing Award", "Meet the 2011 EVHA Winners!", "You Voted - Now Meet the People's Choice Winner", and "BASF is the platinum sponsor of the 2011 EVHA". A large photograph of a modern house is visible on the left side of the page. The browser's taskbar at the bottom shows the Start button and several open applications, including Microsoft Outlook, Windows Explorer, and a PowerPoint presentation.

2012 Application



2011 EnergyValue Housing Award for Residential Home Builders and Remodelers - Windows Internet Explorer

http://www.nahbrc.com/evha/

File Edit View Favorites Tools Help

WEB SEARCH My Apps

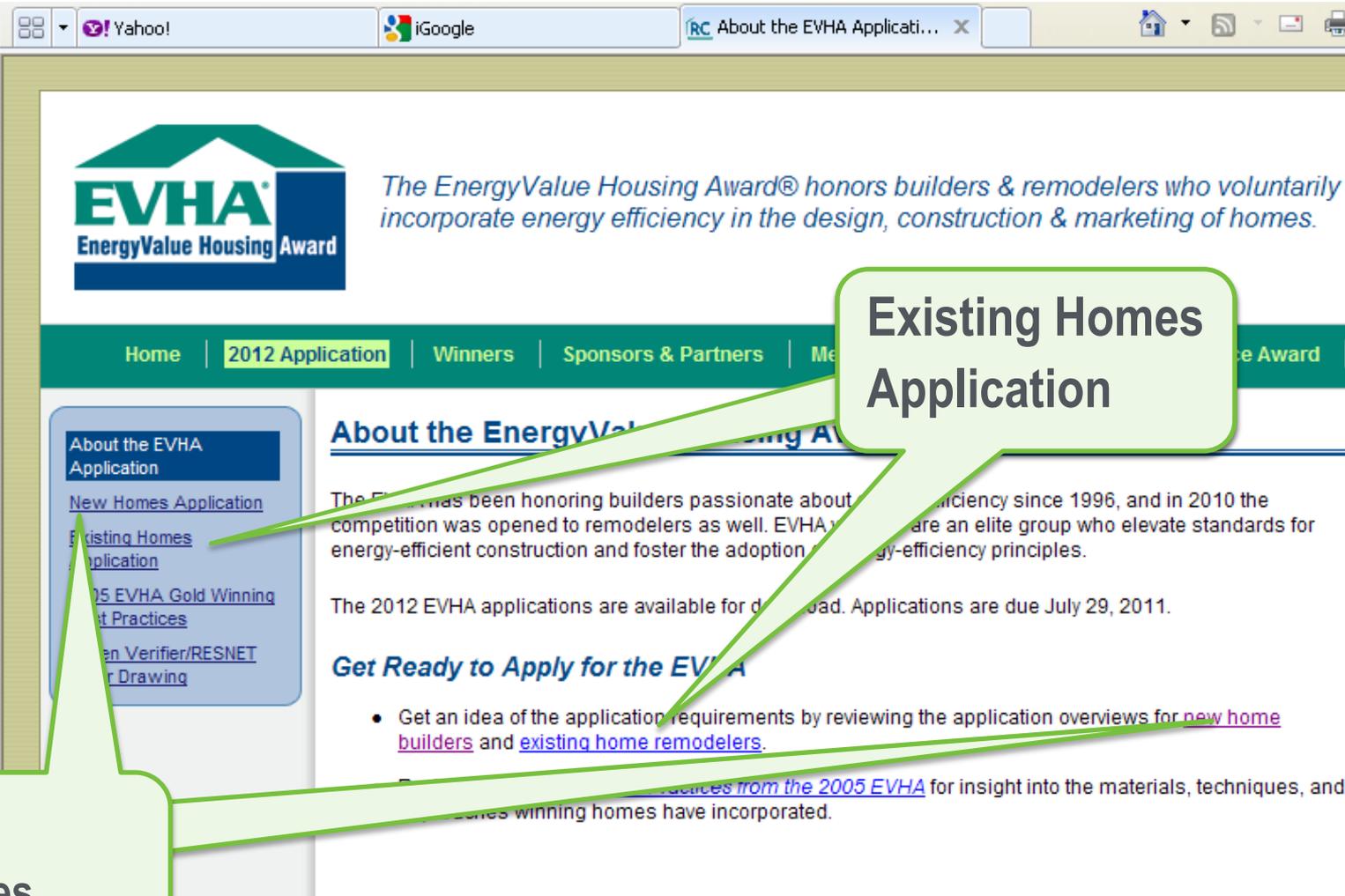
Home | 2012 Application | Winners | Sponsors & Partners | Media | EVHA Banquet | People's Choice Award | Educational Sessions

EVHA
EnergyValue Housing Award

The EnergyValue Housing Award® honors builders & remodelers who voluntarily incorporate energy efficiency in the design, construction & marketing of homes.

Top Stories

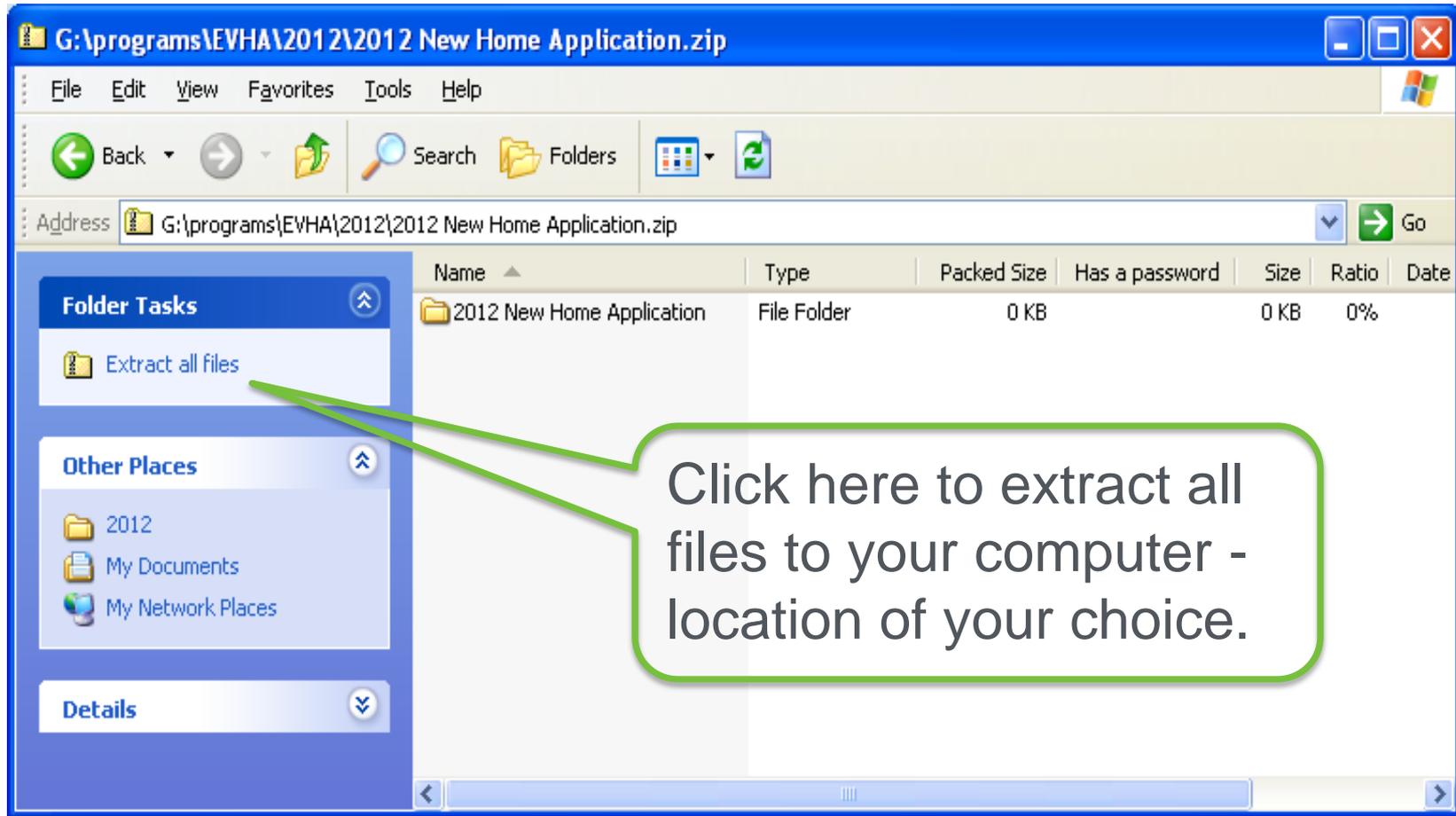
- [Green Verifiers and RESNET Raters Eligible for Drawing](#)
RESNET Raters and National Green Building Certification Accredited Verifiers who encourage builders to the 2012 EVHA are eligible for a prize drawing.
- [Now Available: Applications for the 2012 EnergyValue Housing Award](#)
Download applications for the [New Homes Division](#) or [Existing Homes Division](#). Applications are due July 2
- [Meet the 2011 EVHA Winners!](#)
Silver, Gold, Builder of the Year, Remodeler of the Year were awarded at a special ceremony on Jan. 11.
- [You Voted - Now Meet the People's Choice Winner](#)
Meritage Homes wins the 2011 EVHA People's Choice Award.
- [BASF is the platinum sponsor of the 2011 EVHA](#)
Learn more about BASF at www.basf.com/construction. See the other EVHA sponsors & partners.

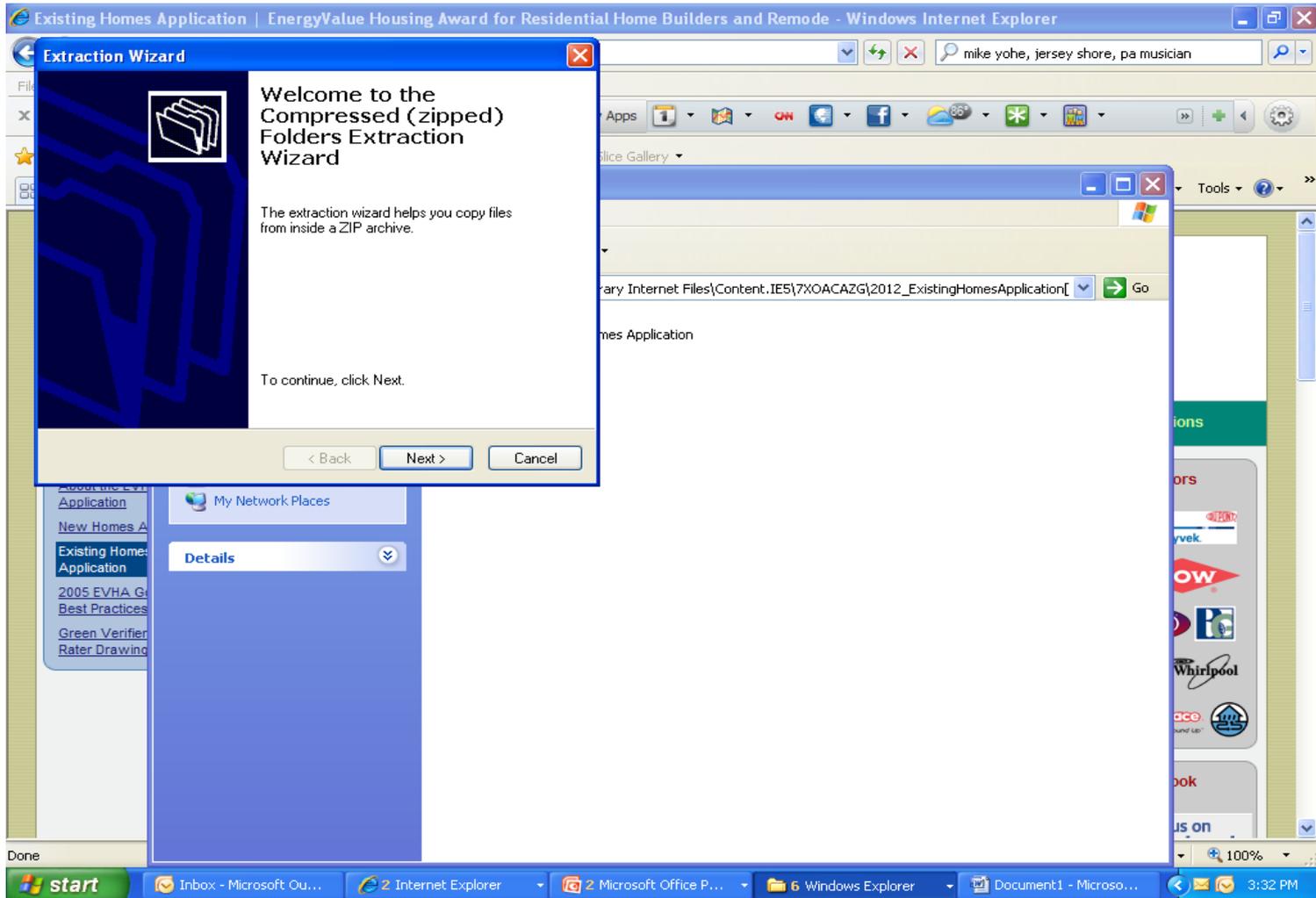


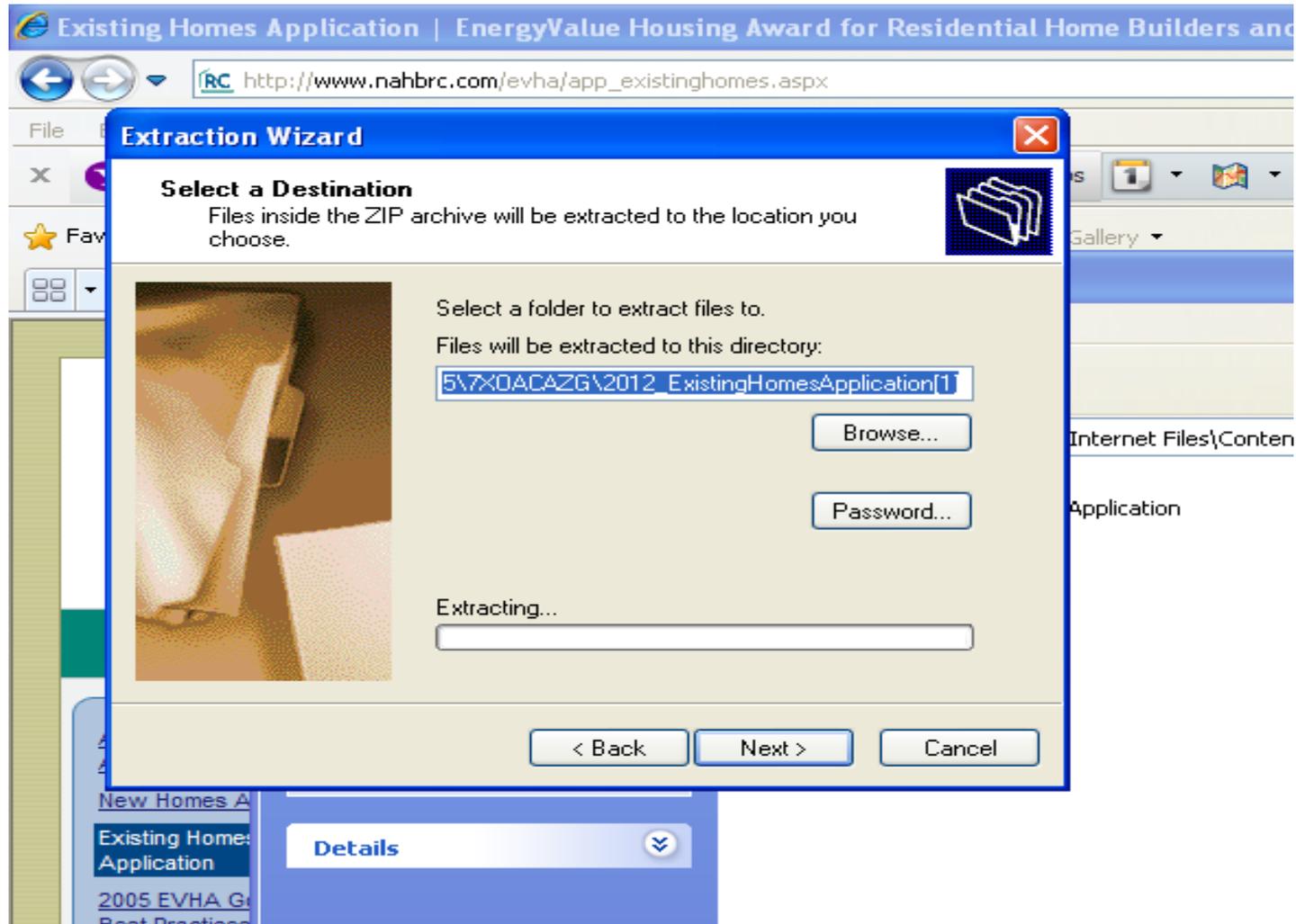
The screenshot shows a web browser window displaying the EVHA website. The browser's address bar shows 'About the EVHA Applicati...'. The website header includes the EVHA logo and a navigation menu with 'Home', '2012 Application', 'Winners', 'Sponsors & Partners', and 'Me...'. A sidebar on the left contains a menu with 'About the EVHA Application', 'New Homes Application', 'Existing Homes Application', '2005 EVHA Gold Winning Practices', and 'Open Verifier/RESNET Drawing'. The main content area features the text: 'The EnergyValue Housing Award® honors builders & remodelers who voluntarily incorporate energy efficiency in the design, construction & marketing of homes.' Below this is a section titled 'About the EnergyValue Housing Award' with a paragraph: 'The EVHA has been honoring builders passionate about energy efficiency since 1996, and in 2010 the competition was opened to remodelers as well. EVHA winners are an elite group who elevate standards for energy-efficient construction and foster the adoption of energy-efficiency principles.' Another paragraph states: 'The 2012 EVHA applications are available for download. Applications are due July 29, 2011.' A section titled 'Get Ready to Apply for the EVHA' includes a bullet point: 'Get an idea of the application requirements by reviewing the application overviews for [new home builders](#) and [existing home remodelers](#).' A final paragraph mentions: '...resources from the 2005 EVHA for insight into the materials, techniques, and... winning homes have incorporated.'

Existing Homes Application

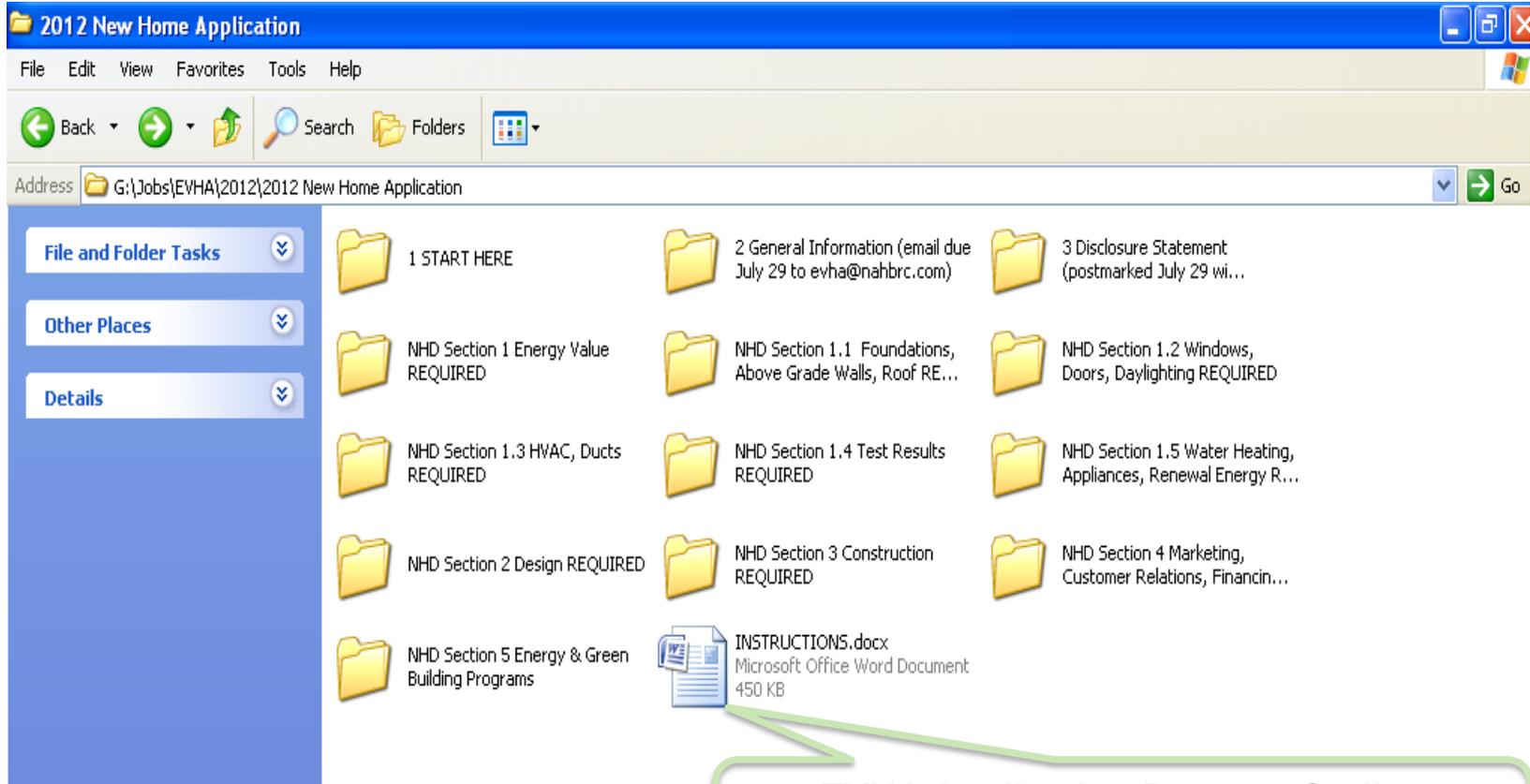
New Homes Application





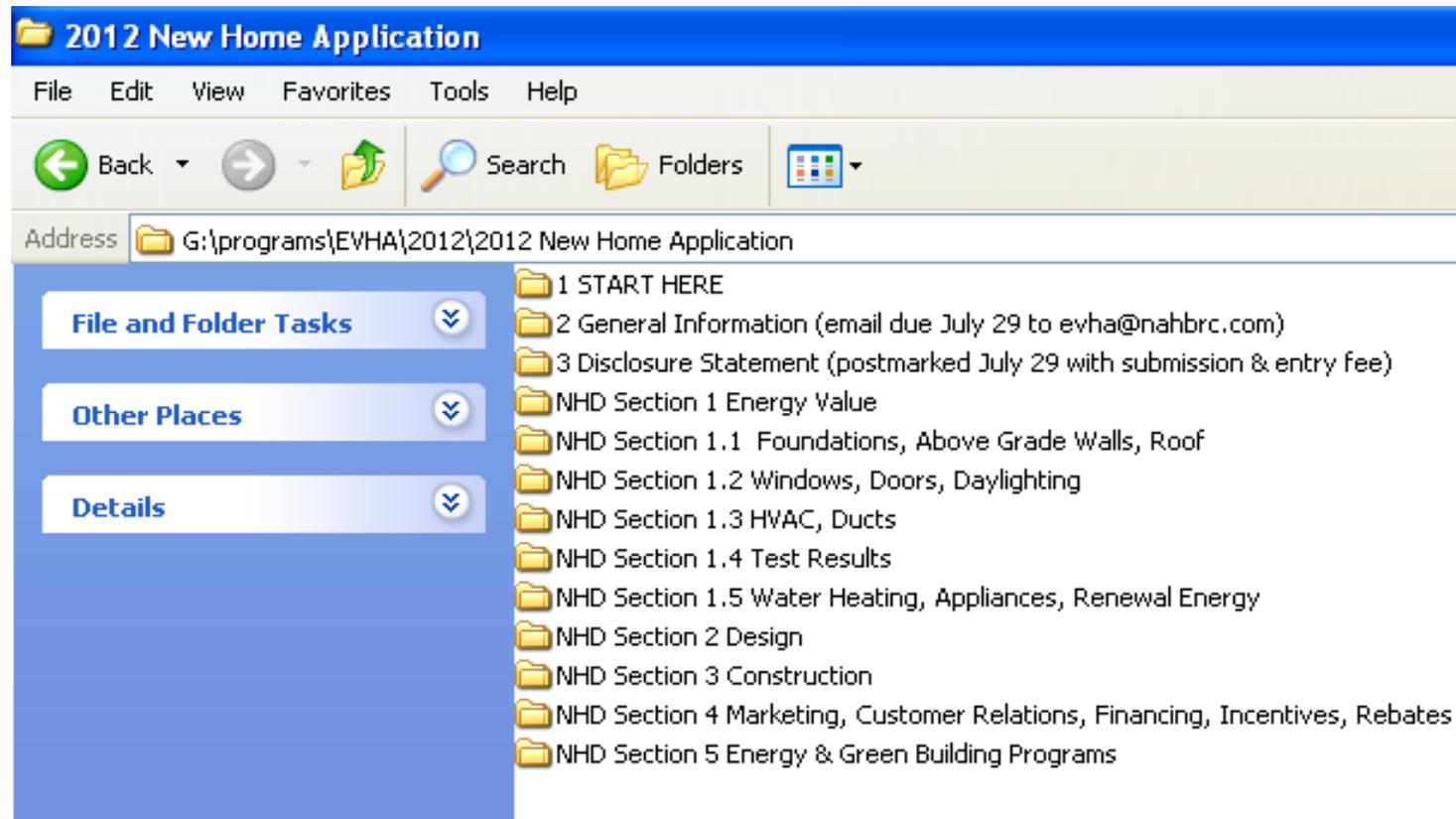


Getting Started



**EVHA Application Process Outline
A Step by Step Guide**

- New Homes Division Application



 **2012 New Home Application/NHD Section 1.3 HVAC, Ducts REQUIRED**

File Edit View Favorites Tools Help

 Back    Search  Folders 

Address  2012 New Home Application/NHD Section 1.3 HVAC, Ducts REQUIRED

Folder Tasks 

 Extract all files

Other Places 

 2012 New Home Application

 My Documents

 My Network Places

Details 

 Sub-Folder 1.3A HVAC, Ducts REQUIRED

 Sub-Folder 1.3B - Photos

 Section 1.3 HVAC, Ducts REQUIRED.docx

SECTION 1.3 HEATING, VENTILATION, AIR CONDITIONING (HVAC) & DUCTS

Describe here the design features of the heating, ventilation, air conditioning, and ducts. Include the description, efficiency, and air sealing details.

SUPPORTING MATERIAL INSTRUCTIONS

Insert in Sub-folder 1.3A

Manual J (or equivalent) heat loss report for HVAC system sizing

REQUIRED

Manual S **REQUIRED**

Manual D duct design, sizing, and layout **REQUIRED** (*if ducts are installed*)

AHRI Certificate **REQUIRED**

(All the above documents should be available from your HVAC contractor.)

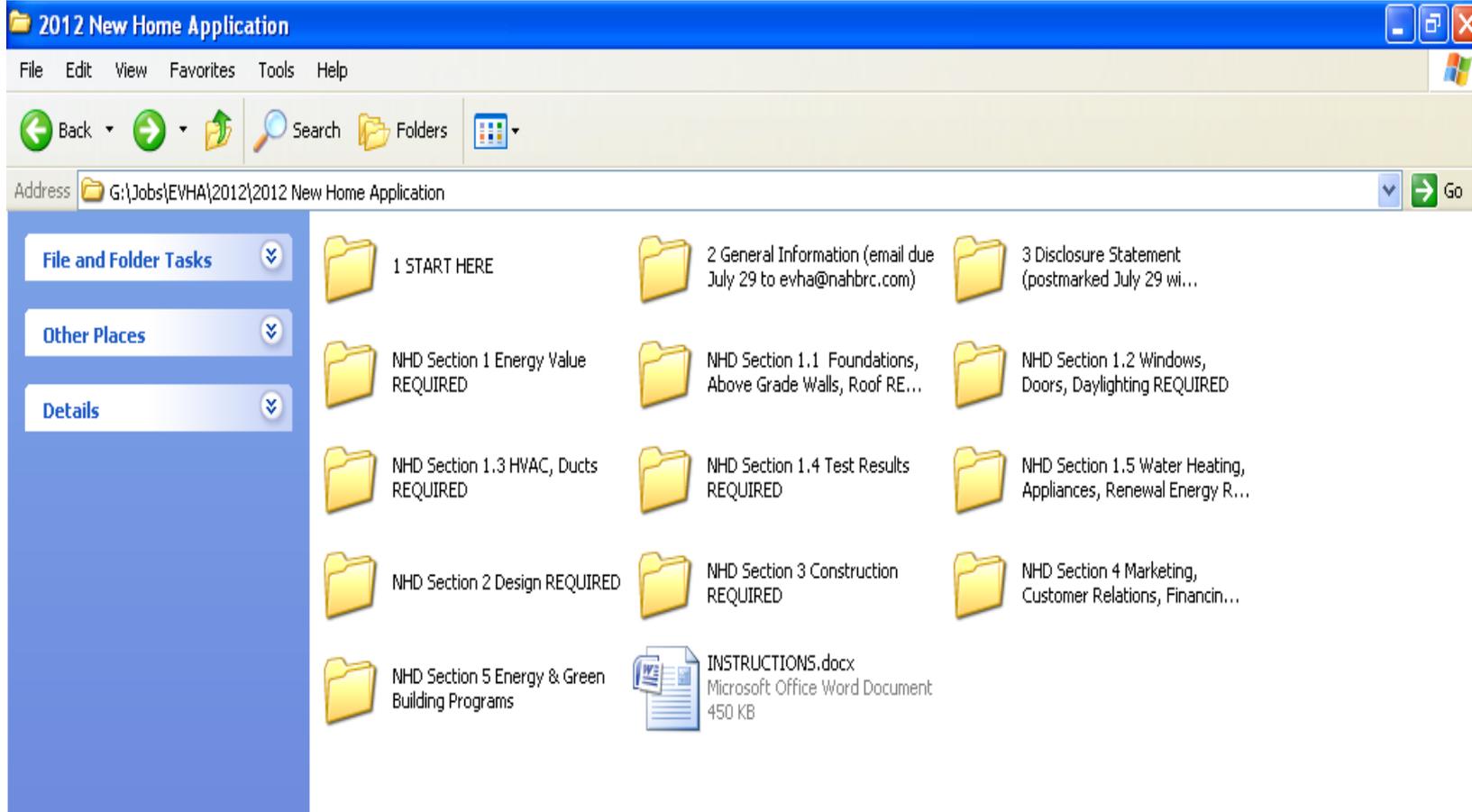
Insert Photos in Sub-Folder 1.3B

SUGGESTED PHOTOS: Unique design features, duct installation, sealing, insulation

ENERGY VALUE NARRATIVE

Complete the following tables as thoroughly as possible. Judges and NAHB Research Center staff will use this information to evaluate your home's energy performance.

Features	Brief Narrative	Page on Prints
Heating System(s) Description(s)		



2012 New Home Application

File Edit View Favorites Tools Help

Back Forward Refresh Search Folders

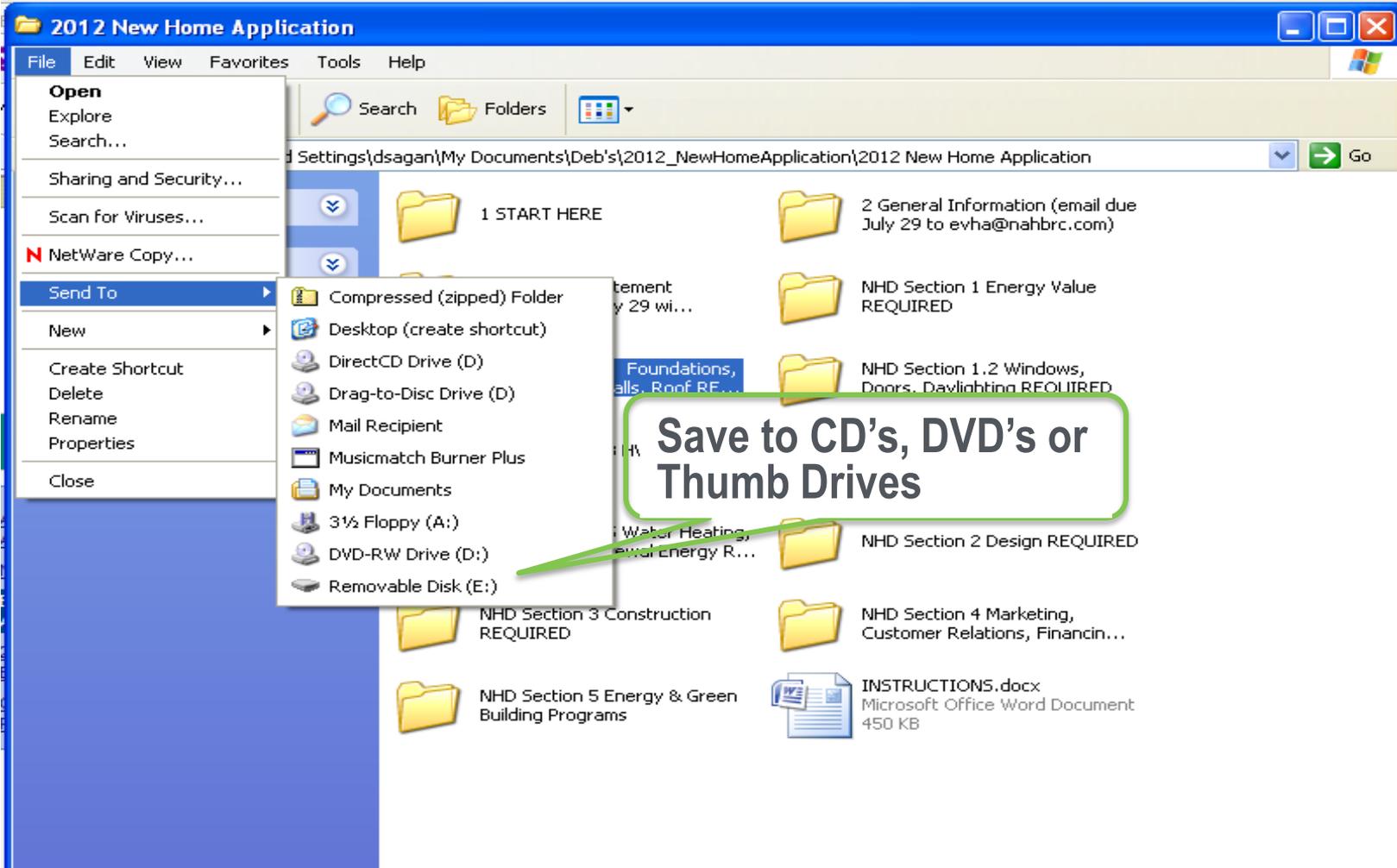
Address **G:\Jobs\EVHA\2012\2012 New Home Application** Go

File and Folder Tasks

Other Places

Details

- 1 START HERE
- 2 General Information (email due July 29 to evha@nahbrc.com)
- 3 Disclosure Statement (postmarked July 29 wi...
- NHD Section 1 Energy Value REQUIRED
 - NHD Section 1.1 Foundations, Above Grade Walls, Roof RE...
 - NHD Section 1.2 Windows, Doors, Daylighting REQUIRED
 - NHD Section 1.3 HVAC, Ducts REQUIRED
 - NHD Section 1.4 Test Results REQUIRED
 - NHD Section 1.5 Water Heating, Appliances, Renewal Energy R...
- NHD Section 2 Design REQUIRED
- NHD Section 3 Construction REQUIRED
- NHD Section 4 Marketing, Customer Relations, Financin...
- NHD Section 5 Energy & Green Building Programs
- INSTRUCTIONS.docx
Microsoft Office Word Document
450 KB



Entry
Deadline

- Applications due July 29

Judging

- Preliminary Judging August/September
- Final Judging late September

Applicant
Notification

- Finalists receive request for materials needed for awards ceremony
- Award Levels are NOT disclosed

Awards Celebration – February 08, 2012

The Coolest Place
in Orlando



Questions?

