



# 1 Hour Going Green VREB Approval #: 58072

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## Instructions for the 1 Hour Going Green Correspondence Course

You have chosen to take the 1 hour Going Green course by correspondence. You may either read it online or print it. After you complete the course, take the quiz. A blank answer sheet is provided for you to record your answers. The Virginia Real Estate Board requires a passing grade of 75% or higher.

Complete the Certification Sheet. **Have the Student Declaration notarized.** The Virginia Real Estate Board has given you the option of either sending the notarized affidavit to us or keeping it with your records.

Mail, fax, or scan and email the completed answer sheet, certification sheet and Student Declaration to us. Our mailing address is Box 494, Oakton, Virginia 22124. Our fax number is 703-758-0044. Our email address is [info@PotomacRESchool.com](mailto:info@PotomacRESchool.com).

Your information will be held in the strictest of confidence.

You will not be charged unless you pass the exam. If you do not pass, you will be notified immediately.

Once we have received the required paperwork from you and you have been charged, we will report your hours to DPOR and email your certificate to you. The Real Estate Board requires that we report your hours to DPOR within 5 days of receipt of your paperwork. If you need reporting in less than 5 days, please let us know.

If you have any questions, please call or email us. Our phone number is 703-758-0034. For questions of a general nature, you can call or email us at [info@PotomacRESchool.com](mailto:info@PotomacRESchool.com). If you have questions about the content of the course, you can call or email me at [patti@PotomacRESchool.com](mailto:patti@PotomacRESchool.com).

Thank you.

*Patti Chapell*

Patti Chapell  
Director

*Linking Learning To Success®*

# Going Green

## Part 1 - Background

- What is green building?
  - Green or sustainable building is the practice of creating healthier and more resource-efficient models of construction, renovation, operation, maintenance, and demolition.
- Following are some of the reasons that so many people are interested in buying "green":
  - Consumers like the idea that they can help the planet by making smarter purchases and lifestyle decisions.
  - Al Gore's documentary, *An Inconvenient Truth*
  - A growing body of green building standards, advocated by the *National Association of Home Builders* and the *U.S. Green Building Council*
  - Rapidly rising energy prices
  - The improvement in healthier indoor air quality that green buildings offer
  - Homes are growing in size and high ceilings are popular.
  - 100% of green home buyers surveyed by McGraw Hill identified lower utility, maintenance and operating costs as an incentive for purchasing a green home.
- Who is interested in buying "green"?
  - This trend is not limited to one demographic group or geographic area.
- Examples of Green Buildings
  - Time Equities, Inc.'s condo-hotel in New York City with
    - Solar panels on roof
    - Windows that help to keep out the heat
    - Energy-efficient HVAC system that will automatically adjust cold or hot air

## Part 2 - Green Building

- *The National Association of Home Builders' Voluntary Model of Green Home Building Guidelines*
  - Established in 2005
  - Helped move environmentally friendly home building concepts further into the mainstream marketplace
  - The guidelines contain six primary sections as follows:
    - Lot Preparation and Design
      - Careful planning can reduce the home's impact on the environment.
    - Resource Efficiency
      - The guidelines address the optimization of the use of building materials, the reduction in the amount of time and money needed for home maintenance, and waste management concepts.
    - Energy Efficiency
      - The guidelines address energy efficient mechanical systems, appliances, and lighting with resulting savings in long-term utility bills.

- Water Efficiency/Conservation
  - The guidelines help to reduce water bills.
- Occupancy Comfort and Indoor Environmental Quality
  - The guidelines help promote healthier indoor air quality by addressing moisture and ventilation.
- Operation, Maintenance and Education
  - This section aids the home builder in educating the homeowner on how to best operate and maintain the home.
- By the end of 2007, more than half of *NAHB's* members, who build more than 80 percent of the homes in the United States, were incorporating green practices into the development, design and construction of new homes.
- Types of Green Building Materials for the Home
  - Green flooring materials are usually made from recycled or renewable products. They can be installed in an eco-friendly manner without harmful gas emissions.
  - The following are some green flooring materials:
    - Cork Floors
      - Cork floors are made from stripped tree bark and leave the trees intact.
    - Bamboo Flooring
      - Bamboo flooring, which is made from a grass, renews itself every three to five years.
    - Recycled Carpeting
      - Besides being stain resistant and shock-free, recycled carpeting does not emit volatile organic compounds (VOC), which irritate the lungs.
    - Linoleum Flooring
      - Linoleum floors are made from natural raw materials and are stain resistant. They do not absorb water and are biodegradable at the end of their useful life, which is approximately 40 years.
    - Eco-Friendly Wood Flooring
      - Eco-friendly wood flooring is harvested from well-managed forests with renewable resources. It is manufactured using formaldehyde-free adhesives.
  - Other Green Building Materials and Options:
    - Recycled building materials from homes about to be torn down
    - Hand-hewn wood beams
    - Rough sawn lumber
    - Copper roofs
    - Timber framing
    - Rainwater holding tanks
    - Chemical-free lighting
    - Green toilets
    - Induction cook tops
    - Geothermal heating and cooling
    - Attic heat blocker
    - Reclaimed wood countertops
    - Nontoxic paint
    - Formaldehyde-free insulation
    - Smart irrigation systems
    - Green furniture
    - Construction materials and interior finish products with zero or low emissions
    - Adequate ventilation and high-efficiency in-duct filtration systems
    - Materials resistant to microbial growth
    - Building systems that control humidity
- Solar Energy

- Passive
  - Heating water in swimming pools
- Direct
  - Converting to electricity using photovoltaic cells
- Large, flat panels with grids of solar cells are installed on top of roofs.
- Many utility companies offer rebates and credits to home owners who install solar panels.
- Energy-Efficient Windows
  - Infrared and ultraviolet light, light that is not visible to us, fades furniture and floors.
  - Low-e is a hard glaze coating on windows.
    - It blocks some of the harmful rays
    - It reduces heat loss in the winter
    - It keeps homes cooler in the summer.
  - Dual pane windows offer insulation against the elements and aid in soundproofing.
  - Many energy-efficient windows qualify for rebates and credits.
- Energy-Efficient Products
  - *Energy Star* is a government-backed program that identifies energy efficient products.
    - According to *Energy Star*, compact fluorescent light bulbs use 75% less energy and last ten times longer than regular light bulbs. They cost more than regular light bulbs but are actually less in the long run.
    - Consumers have many appliances from which to pick that carry the *Energy Star* label.
- Building Green
  - "Research by the *U.S. Department of Energy* and the *U.S. Green Building Council* shows that energy-efficient construction compliant with *Leadership in Energy and Environmental Design (LEED)* and *Energy Star* standards produces annual energy savings of twenty to fifty percent.
    - Commercial developers can recoup a project's cost in as few as two years, while residential builders earn their payback within five years.
    - *LEED* certified buildings offer other benefits as well, such as lower operating costs and higher asset values.
    - In addition, better indoor air quality and natural light boost worker productivity, improve employee attendance, and even drive up sales." *"Building Green" sub-section is reprinted from Realtor® Magazine Online (<http://www.realtor.org/realtormag>) with permission of the National Association of Realtors®. Copyright 2008. All rights reserved.*
- Green remodeling
  - Green remodeling promotes healthier indoor air quality through
    - Properly sized and vented exhaust fans
    - Addition of fans to laundry rooms
    - Zero or low-VOC paint
    - Formaldehyde-free carpet and plywood
  - Better energy efficiency is gained through the use of
    - Dual-flush toilets
    - Tankless water heaters
    - HVAC systems with at least a 17 SEER rating
    - Furnaces with a 90+ rating
    - Fluorescent lighting and *Energy Star-rated appliances*
    - Sealing ducts with mastic, not tape
    - Radiant barrier decking
    - Double-pane, low-E windows
    - Balanced attic air intake
    - Exhaust and spray foam insulation

- Lower exterior maintenance is achieved through the use of
  - Fiber cement siding
  - 40-year shingles
  - Engineered wood framing
  - Physical termite barriers

## Part 3 – Advantages of Green Building

- Economic Advantages
  - When owners make improvements to their homes, they may qualify for federal income-tax credits and local-government or utility assistance with the cost of the work.
  - States are jumping on the bandwagon by subsidizing loans for energy-efficient improvements.
    - Pennsylvania has a program that offers low interest, unsecured financing for energy-related home improvements such as windows, doors, insulation and air conditioning systems that meet certain criteria.
    - Kansas has a similar program.
    - New York started a loan program several years ago that allows families to qualify for reduced interest-rate loans for up to \$20,000. Participation in this program grew 20% in 2007.
  - Energy costs are lower.
- In a buyer's market
  - Simple energy upgrades can make one home stand out.
  - The agent should ensure that the appraiser sees receipts for work done.
- Higher resale values often result.
  - Based on evidence from the commercial market, green homes will have higher resale values in the future.
- Improved Health
  - Better indoor air quality improves occupants' health and increases productivity.
- Green Home Buyer Satisfaction is phenomenal
  - There is an 85% satisfaction level among green home buyers.
- The Environment
  - Green buildings and green improvements have profound and long-lasting positive effects on the environment.

## Part 4 – “Green” Mortgages

- Purchasers interested in buying a green home or existing owners wishing to refinance a green home can reap rewards with green mortgages, also known as *Energy Efficient Mortgages (EEM)*.
  - In a mortgage crisis climate, energy-efficient mortgages can be a more secure way to qualify marginal borrowers because these purchasers will be saving money on utility bills.
- Some major mortgage lenders are attracting “green-minded” homeowners with discounts for upgrades that make a home more eco-friendly.
  - Citigroup Inc., Bank of America, and JP Morgan Chase and Co. are among a group of lenders touting special programs for what are being called “green mortgages.”

- Citigroup and Bank of America are both offering \$1,000 off closing costs for meeting certain standards.
- JP Morgan Chase is offering \$500 when spray foam insulation is used in a home.
- The Fannie Mae Energy Efficient Mortgage
  - Allows the buyers to upgrade the house they are purchasing in energy efficient ways
  - Finances the improvements into the loan
  - Improves cash flow each month
  - Allows the savings to count as added income for qualifying ratios
  - The building may cost more up front but saves through lower operating costs over the life of the building.
- Steps to obtain a “green mortgage”:
  - The first step is to find a lender familiar with the loan product.
  - The second step is an energy audit. An energy audit must be performed by a trained professional acceptable to the lender.
    - The utility company should be contacted to see if it offers free or discounted energy audits to its customers. If not, a home energy professional can be hired, such as a certified Home Energy Rater, to evaluate the home's energy efficiency. The company performing the energy audit will need to be certified in the *Home Energy Rating System (HERS)*.
    - To find a Home Energy Rater, an Energy Star Partner can be found by going to [http://www.energystar.gov/index.cfm?fuseaction=new\\_homes\\_partners.showHomesSearch](http://www.energystar.gov/index.cfm?fuseaction=new_homes_partners.showHomesSearch)
    - A professional auditor uses a variety of techniques and equipment to determine the energy efficiency of a home. Thorough audits often involve the use of equipment such as blower doors, which measure the extent of leaks in the building and infrared cameras, which reveal hard-to-detect areas of air infiltration and missing insulation.
    - The company will provide the following information:
      - A list of recommended improvements
      - An estimate of the cost of the improvements in the local market
      - The energy cost savings based on local utility rates
    - Rating scores are between 1 and 100 with higher scores indicating better efficiency.
    - The exam typically costs between \$100 and \$300.
    - EEM loans are available through various sources, such as the Federal Housing Authority (FHA), Veterans Affairs (VA) Fannie Mae and Freddie Mac.
  - The third step is to shop for bids among contractors.
  - Fourth, a contractor is chosen to perform the work.
  - The lender then adds the cost of the work to the loan amount.
    - The lender places the extra improvement money in an escrow account and pays the contractors directly when the work is completed.
  - The buyers’ monthly payment will be slightly higher. However, the savings in utility bills will more than offset the higher monthly mortgage payments.
- Unfortunately, these mortgages haven’t generated much interest for the following reasons:
  - The products are not marketed as they should be.
  - Many consumers do not know that these mortgage products are available.
  - Some lenders claim that the monthly savings aren’t enough to get buyers interested.

- For this reason, some banks have been adding incentives like the \$1,000 in closing cost savings.

## Part 5 – The Agent and Green Building

- Real estate agents need to understand green building and the associated terms in order to help their “green-minded” clients.
- Home Energy Audit
  - This is easy and inexpensive. For purchasers concerned with green building, a home energy audit can be written into a sales contract, or a contract can be contingent upon an energy audit much in the same way that contracts are written contingent upon home inspections.
- For sellers
  - The listing agent can show sellers how to appeal to buyers by reducing energy costs.
    - The easiest and least expensive energy saver is caulking and weather-stripping windows.
    - Another is increasing the insulation in the attic.
    - A very effective, but more expensive, energy improvement is installing dual-zone heating and air conditioning systems.
    - A home can be sheltered from the wind and sun by planting trees and tall shrubs.
  - The listing agent should mention all energy savers in the marketing pieces.
  - Appliances can be looked up at [www.energystar.gov](http://www.energystar.gov) to determine whether or not they are energy efficient.
- For buyers
  - The buyer agent should point out high-efficiency products and discuss material enhancements that would make potential purchases more environmentally friendly.
- For past customers and clients
  - It would be advantageous to provide former customers and clients with energy-saving information, such as
    - How much money they could save by replacing light bulbs with CFL bulbs (compact fluorescent lights).
    - How they can economize through energy-saving discounts
  - The agent can tell these past buyers and sellers about refinancing with an energy-efficient mortgage.

## Part 6 – Eco Friendly Terms and References

- EcoBroker
  - This real estate certification program helps practitioners become experts in helping consumers and communities use energy efficiency and sustainable design. Through EcoBroker educational courses, you acquire knowledge and resources to become a Certified EcoBroker, which gives you a leg up in assisting home owners in purchasing and marketing properties with green features. Classes are available online, and may count as continuing education credits in your state.
- FSC-certified wood

- A key component of green building is using sustainable wood. Quickly renewable woods like bamboo are inherently sustainable. In selecting other types of hardwoods, it's important that the wood be grown and harvested in a sustainable manner. The Forest Stewardship Council (FSC) maintains standards and certifies woods for sustainability.
- Geothermal
  - Geothermal power uses heat from the earth to generate electricity. This is a clean, renewable power source. Geothermal energy is harnessed with a Ground Source Heat Pump (GSHP) to tap the stored energy beneath the planet's surface. These pumps can be used to provide heating, cooling and hot water for residential and commercial buildings.
- LEED
  - LEED is an abbreviation for Leadership in Energy and Environmental Design. The LEED rating system was designed by the U.S. Green Building Council and is the standard for the design, construction and operation of green buildings. LEED started in the commercial building sector, and a rating system for residential construction is in the works. Architects and builders often refer to themselves as LEED AP; the AP stands for Accredited Professional. This means they have passed the LEED exam and are well-versed in the program's standards.
- Native landscaping
  - Selecting plants indigenous to your area means they're better adapted to the local climate, use appropriate amounts of water, resist local pests and provide food for area wildlife.
- Runoff
  - The waste water that flows from our gardens, lawns, driveways and streets into our sewer systems carries various pollutants, including fertilizers and pesticides from our yards. The water eventually travels into rivers and oceans where they degrade water quality for humans and animals. To reduce runoff, home owners can make sure they don't over-water their lawns or accidentally water their sidewalks and driveways. Permeable stone pavers in driveways also help curb runoff.
- Solar PV/Solar Water Heaters
  - Solar PV stands for Solar Photovoltaic, which are the panels used to create electricity. PV cells are comprised of semi-conductors, most often made of silicon, which convert sun power into electricity. These are different from (and more expensive than) solar water-heating systems. A solar water-heating system is fairly simple with the solar panels typically installed on a roof. The sun then heats the panels; the solar collectors heat a fluid in pipes held in the interior of the panel boxes, and the fluid is transported into the house where it heats water in a storage tank.
- Sustainable/Sustainability
  - Sustainability refers to meeting present needs without compromising the ability of future generations to meet their needs. This involves using, re-using, and conserving natural resources to do the least harm to the natural environment. It's now used almost interchangeably with "green" and "eco-friendly."
- VOC
  - An abbreviation for Volatile Organic Compounds, VOCs are emitted as gases from various solids and liquids like wall paint, furniture and household cleaning supplies. Many chemicals are harmful to human health; some are carcinogenic. But no- or low-VOC products now available represent good non-toxic replacements.

*Information in this section on terms is copyrighted by the National Association of Realtors® and reprinted with permission.*

- For more information
  - *Sustainable Building Technical Manual*,  
<http://www.sustainable.doe.gov/freshstart/articles/ptipub.htm>

- U.S. Department of Energy Web site: [www.sustainable.doe.gov/buildings/gbintro.shtml](http://www.sustainable.doe.gov/buildings/gbintro.shtml)
- Environmental Building News: [www.buildinggreen.com/](http://www.buildinggreen.com/)
- U.S. Green Building Council Web site: [www.usgbc.org](http://www.usgbc.org)

## Going Green Final Quiz

1. All measures below might make a home more desirable to “green-minded” buyers except
  - a. Hook-ups in the garage for electric cars
  - b. Appliances with the *Energy Star* label
  - c. Cork floors
  - d. All of the above would make a home more desirable to “green-minded” buyers
2. Why might a “green mortgage” help a marginal buyer?
  - a. Qualifying will be easier since the utility bill savings will be factored into the qualifying ratios.
  - b. It will not help a marginal buyer.
  - c. The marginal buyers need to first change employment.
  - d. None of the above
3. Geothermal power
  - a. Comes from the sun
  - b. Uses heat from the earth to generate electricity
  - c. Can provide heating, cooling, and hot water for residential and commercial buildings
  - d. b and c
4. A real estate agent can differentiate himself by
  - a. Earning the EcoBroker designation
  - b. Referring “green-minded” buyers to other agents
  - c. Both a and b
  - d. Neither a nor b
5. Which of the following is not a reason that people are buying green homes?
  - a. Energy prices are rapidly rising
  - b. Green homes’ healthier indoor air quality
  - c. Al Gore’s film, *An Inconvenient Truth*
  - d. The movie, *Breach*
6. *The National Association of Home Builders’ Voluntary Model of Green Home Building Guidelines*
  - a. Were established in 2005
  - b. Promote green building
  - c. Are mandatory for builders
  - d. Both a and b
7. Energy Efficient Windows
  - a. Have a hard glaze coating on windows
  - b. Blocks harmful rays from the sun
  - c. Reduces heat loss in winter
  - d. All of the above

8. *Energy Star* is
  - a. A new program of green mortgages
  - b. A government-backed program that identifies energy efficient products
  - c. A refrigerator that is battery operated
  - d. None of the above
  
9. Economic advantages of green building and remodeling include
  - a. A reduction in the cost of energy
  - b. Special consumer friendly loans for upgrading homes in energy efficient manners
  - c. Tax credits for energy saving improvements
  - d. All of the above
  
10. Other advantages for green building and remodeling include
  - a. Probable increase in value of the building
  - b. Positive effects on the environment
  - c. Both a and b
  - d. Neither a nor b
  
11. *Energy Efficient Mortgages or EEMs*
  - a. Finance energy-efficient improvements into the loans
  - b. May qualify borrowers adding utility bill savings into the qualifying equation
  - c. Both a and b
  - d. Neither a nor b
  
12. An important step in obtaining a "green mortgage" is
  - a. Hiring a contractor to make the energy-saving improvements
  - b. Paying off all outstanding credit cards
  - c. Hiring a professional to conduct an energy audit
  - d. Both a and c
  
13. Improvements to the home are paid for by
  - a. The mortgage company, which has the funds held in an escrow account
  - b. The purchaser directly
  - c. The loan officer
  - d. None of the above
  
14. How can the real estate agent be helpful to past customer and clients?
  - a. By sending them information about "going green."
  - b. By giving them information about "green" refinances.
  - c. By giving them energy useful websites.
  - d. All of the above
  
15. How can the agent help a seller take advantage of energy savers in the selling of the house?
  - a. By encouraging the sellers to add insulation in the attic.
  - b. By asking the sellers to use less water.
  - c. By asking the sellers to heat the house with the fireplace.
  - d. None of the above

Name \_\_\_\_\_ Date \_\_\_\_\_

## GOING GREEN FINAL QUIZ

Please circle the correct answer for each question.

1. A B C D
2. A B C D
3. A B C D
4. A B C D
5. A B C D
6. A B C D
7. A B C D
8. A B C D
9. A B C D
10. A B C D
11. A B C D
12. A B C D
13. A B C D
14. A B C D
15. A B C D

# Potomac Real Estate School Certification Sheet for Correspondence Course

Please fax to (703) 758-0044, scan and email to [info@PotomacRESchool.com](mailto:info@PotomacRESchool.com) , or mail to Potomac Real Estate School, Box 494, Oakton, Virginia 22124

Print Name \_\_\_\_\_ **Course: 1 Hour**

Billing Address \_\_\_\_\_ **Going Green CE**  
 \_\_\_\_\_ (VREB Approval #58072)  
 \_\_\_\_\_

RE License # \_\_\_\_\_ (10 digits)

Expires \_\_\_\_\_

Phone # \_\_\_\_\_

Email \_\_\_\_\_

Company Affiliation \_\_\_\_\_

**Payment by Check**

\_\_\_\_\_I enclose a check payable to Potomac Real Estate School LLC in the amount of \$15.00  
**OR**

**Payment by Credit Card**

\_\_\_\_\_Please charge \$15.00 to my \_\_\_Visa\_\_\_Master Card\_\_\_American Express\_\_\_Discover  
**OR**

Card # \_\_\_\_\_ Expiration Date \_\_\_\_\_

Security Code \_\_\_\_\_ Signature \_\_\_\_\_

Did you find the material well organized?	Yes	No
Was the material well written?	Yes	No
Was the course material relevant?	Yes	No

Suggestions \_\_\_\_\_

**How did you find us?** Please circle

Internet    Postcard    Referred by \_\_\_\_\_    Email

Personal Note/Letter    Ad    VREB    NVAR    L&F

Other



**Student Declaration: I hereby certify that I completed this continuing education course (1 Hour Going Green) on my own without assistance.**

**Signed** \_\_\_\_\_

**Date** \_\_\_\_\_

**Name (Print)** \_\_\_\_\_

**Notary Public Declaration: Taken, subscribed, and sworn before me this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_**  
**In the City/County/Town of \_\_\_\_\_**  
**In the State/Commonwealth of \_\_\_\_\_**  
**My commission expires \_\_\_\_/\_\_\_\_/\_\_\_\_\_**

**Notary Public** \_\_\_\_\_

**Notary Signature Required**

**But Seal NOT Required**