

# Single Family Factsheet



EarthCraft Virginia provides a certification process for new, residential construction that serves as a blueprint for healthy, comfortable homes that reduce utility bills and protect the environment. This state-wide program is a partnership between Southface Energy Institute and the Home Builders Association of Virginia.

The EarthCraft program was created ten years ago, in Atlanta, Georgia, by collaboration of Southface Energy Institute and the Atlanta Home Builders Association. With national recognition and respect as a technically sound voluntary green building program, EarthCraft House allows builders to raise the bar in quality construction, growth management and environmental stewardship.

Throughout the southeast, EarthCraft House has certified over 4000 homes. The EarthCraft House Program was brought to Virginia in 2005 to fill the need for an established green building process. With over 200 builders here in Virginia and growing, 500 homes have been certified with an additional 150 under construction coupled with almost 40 multi-family projects representing over 2000 units.

## How It Works?

Builders are guided through a design review to identify site planning and construction decisions. A holistic, point-based worksheet is adopted addressing all aspects of energy efficiency, durability, indoor air quality, resource efficiency, waste management, and water conservation. The worksheet provides an array of options that can be combined in various formulas to make projects certifiably green. An energy analysis confirms that each home will meet a higher standard and prove a 15% reduction in energy consumption over 2004 IECC. Ongoing third-party verification ensures quality, from site preparation to final diagnostic house testing.

## Why Build EarthCraft?

EarthCraft promotes diligent air sealing of the building envelope and its mechanical systems while still allowing for fresh air intake. Air sealing at little additional cost, provides a tighter building envelope and thus homes are more energy efficient and less costly to occupy. Because homes are tight and properly balanced, pollutants are eliminated, resulting in better indoor air quality. Resource efficient materials such as concrete with fly ash, cellulose insulation, carpet pad and carpet containing recycled materials are some of the options builders and homeowners can choose to defer wastes from landfills. With windows and insulation levels that meet or exceed conventional code requirements, water conservation measures, and the use of ENERGY STAR appliances, utility bills remain low after move-in. Homeowners boast of comfort and the security of owning a durable home. Not only is the EarthCraft certification healthy for the environment, but it's healthy for the homeowner and their wallet.

# ELEMENTS OF EARTHCRAFT HOUSE VIRGINIA

EarthCraft Virginia allows builders great flexibility in achieving environmental performance. These are some of the most *common* measures builders choose to earn EarthCraft Virginia certification.

## SITE PLANNING

- Erosion control site plan
- Mill cleared logs
- Tree preservation plan
- Protected tree save area (min 25% of development or lot)
- Tree planting (min 12 trees per acre of developed land; min 2" caliper)

## ENERGY EFFICIENT BUILDING ENVELOPE AND SYSTEMS

### Air sealing measures

- Chases sealed and insulated
- Bottom plate sealed to floor or foundation
- Gaps in exterior wall sheathing sealed
- Shower and tub drains sealed
- Scuttle holes weather-stripped
- Pass blower door test

### Insulation

- Flat ceilings R38
- Foundation walls R13
- Slab insulation R10

### Windows

- Windows NFRC certified with label, and U-factor less than 0.40

### Heating and cooling equipment

- Manual J calculation for sizing heating and cooling equipment
- Ductwork and air leakage test
- Air handlers and duct systems sealed with mastic or mastic tape
- No ducts in exterior walls
- Pass duct leakage test

## ENERGY EFFICIENT LIGHTING/APPLIANCES

- ENERGY STAR dishwasher
- Indoor fluorescent fixtures

## RESOURCE EFFICIENT DESIGN

- Floor joist @ 19.2" centers
- 2-stud corner with drywall clips or alternative framing
- T-walls with drywall clips or alternative framing

## RESOURCE EFFICIENT BUILDING MATERIALS

- Insulation (min 25% recycled content)
- Engineered roof framing
- Roofing (min 30-year warranty)
- Walls covered with builder paper or housewrap (drainage plane)
- Back-primed siding and trim
- Window and door pan and sill flashing integrated with drainage plane
- Window and door head flashing integrated with drainage plane
- Roof gutters discharge water 5' away from foundation

## WASTE MANAGEMENT

- On-site grinding of wood and drywall waste
- Central cutting area for framing

## INDOOR AIR QUALITY

- Combustion water heater isolated from conditioned space
- Gravel bed beneath slab
- Vapor barrier beneath slab (above gravel) and in crawl space

- Bathroom exhaust fans ducted to outside
- Passive radon/soil gas vent system
- Outside air intake
- 2" pleated filter or thicker

## WATER-INDOOR

- High-efficiency water heater
- Tankless water heater

## WATER-OUTDOOR

- Drought-tolerant landscaping
- Efficient irrigation system with controls

## HOMEBUYER EDUCATION

- Review energy operations with homeowner
- Environmental features checklist for walk-through

## BUILDER OPERATIONS

- Environmental checklist provided to all subcontractors
- Certified Professional Home Builder Certificate

## BONUS POINTS

- Location convenient to mass transit
- Exceeds ENERGYSTAR by 30%
- Housing affordability

## EARTHCRAFT HOUSE

Certification requires 150 point total with the points derived from energy efficiency, including satisfactory test results.

## EARTHCRAFT HOUSE GOLD

Certifications requires 200 points with additional requirements

## EARTHCRAFT HOUSE PLATINUM

Certifications requires 230 points with even more additional requirements