

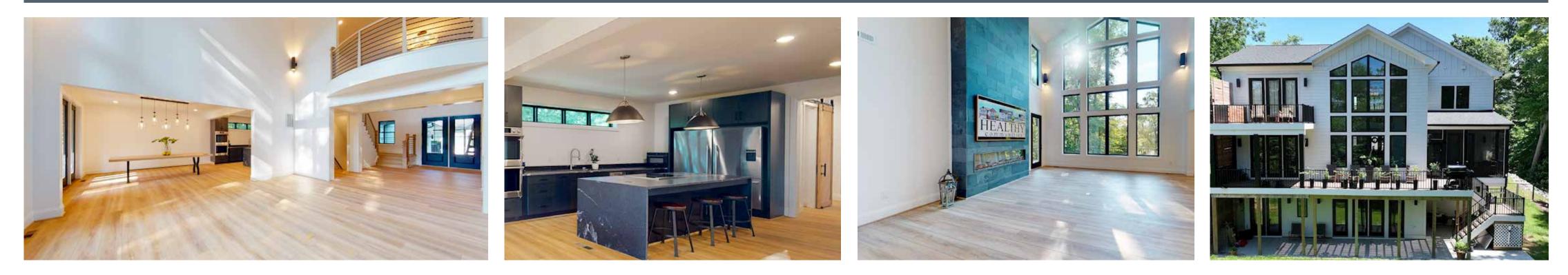
Healthy Communities

The Ridge | Williamsburg, VA | HealthyCommunitiesVA.com





"We've noticed a significant improvement in our health and comfort, making allergies a thing of the past." Homeowner



PROJECT DATA

• Layout: 4 bdrm, 5 bath, 2 fl + bsmt, 5482 ft²

- **Climate:** IECC 4A, mixed-humid
- **Completed:** September 2023

KEY FEATURES

- Walls: 2x6 16" o.c., R-21 total: advanced framed, R-19 fiberglass batt, 1" R-3 structural sheathing, fiber cement siding.
- **Roof:** Gable truss roof: $2x10 \ 16''$ o.c. trusses, $\frac{1}{2}''$ plywood, synthetic roof underlayment, architectural shingles. 14" raised-heel trusses.

• **Category:** Custom

MODELED PERFORMANCE DATA

- **ERI:** without PV 44; with PV 15
- Annual Energy Costs: without PV \$2,700; with PV \$900
- Annual Energy Cost Savings: (versus typical new homes) without PV \$5,400; with PV \$7.250
- Annual Energy Savings: without PV 24,700 kWh; with PV 37,180 kWh
- Savings in the First 30 Years: without PV \$226,600; with PV \$302,500

CONTACT

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U.S. DEPARTMENT OF ENERGY

Energy Efficiency & Renewable Energy

• Attic: Unvented, vaulted ceilings, 10" R-13 closed-cell spray foam under roof deck.

- Foundation: Insulated basement 8" cement walls, R-24 interior wall of R-5 graphite EPS + 2x6 24" o.c. framed wall with R-19 fiberglass batt. R-10 foam under slab.
- Windows: Double-pane windows, U=0.28, SHGC=0.32, low-e, argon fill. One foot overhangs.
- Air Sealing: 0.90 ACH50; bottom plates sealed with foam gaskets and expansive caulk; opencell spray foam in cantilevers, garage ceiling, raised heel trusses, three-stud corners; open + closed cell sp fm under roof deck and on attic gable walls. Whole house aerosolized sealant.
- Ventilation: ERV integrated with HVAC. MERV 13 filters, moisture sensor controls. Manually adjustable CFM.
- **HVAC:** Central air-source heat pump, 8.7 HSPF, 19.5 SEER. Variable-speed compressor.
- Hot Water: Heat pump water heater, 80-gal, 3.88 EF. Demand recirculation. Compact layout.
- Lighting and Appliances: Energy-efficient appliances and LED lighting.
- **Solar:** 10 kW, no battery.
- Energy Management System: Smart home system for remove control of HVAC (can add energy usage and diagnostics, security lights, shades, and garage doors).
- Other: Electric vehicle charger. Meets federal definition of zero-emissions building. IAQsensing light switches, potential for bi-directional EV charging. PEARL certified.



For more information on the DOE Zero Energy Ready Home program, go to https://www.energy.gov/eere/buildings/zero-energy-ready-home-program or scan the QR code.



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