Spring Residence Case Study

Project Information

Project Type: New Single-family

Location: Raleigh, N.C. Suburban

National Green Building Standard Certification Level: Gold

Date Completed: 2012

Climate Zone: 4

Project Team

Builder: BuildSense, Inc.

Designer: BuildSense Architecture, PC

Interior Designer: BuildSense Architecture, PC

Land Planner: Tributary Land Design + Build

Verifier: Southern Energy Management

BuildSense certifies all new homes to NGBS and ENERGYSTAR

Specifics

The Spring Residence is a single-family home designed and built on a heavily wooded lot previously occupied with an existing home in the Falls Lake Area of Raleigh, NC. The clients desired a sustainable and energy efficient home to live big while maintaining a modest scale.

The form of the design was conceived through the clients' love for the retro-modern "atomic ranch" style as well as the indoor/outdoor connection provided through the Japanese exterior circulation and veranda concept of engawa.

The clients enhanced the form with their desire for abundant natural light and their interest in dappled light of the forest canopy. Early design investigations of the "atomic ranch" revealed that low sloping roof forms and a massive central stone hearth were the strongest design elements. The need for multiple stories and the desire for abundant natural daylight drove a reinterpretation of ranch forms.

The typical heavy masonry element was transformed to a delicate and lacy filter of light serving as the entry, vertical circulation, and an orientation device ever-present to all public/family gathering spaces.

The perforated aluminum skin defines this "lightbox" to both exterior and interior. With nightfall, it glows as a lantern: a beacon to the exterior.

"BuildSense doesn't just build homes, they build dreams." - Owner

NAHB
National Association of Home Builders

Key Features:

- Deconstructing the existing home, they diverted over 85% of the materials from the landfill
- Passive heating and cooling designed
- Pre-finished cedar siding
- Insulated concrete forms and advanced framing techniques used
- Sprayed open cell foam and continuous exterior insulation used to decrease air infiltration
- High efficiency geothermal heat pump
- Low flow plumbing fixtures and faucets
- 2500 gallon roof water catchment and redistribution system installed
- 3.68kW roof mounted pv system
- Heat pump water heater with a desuperheater

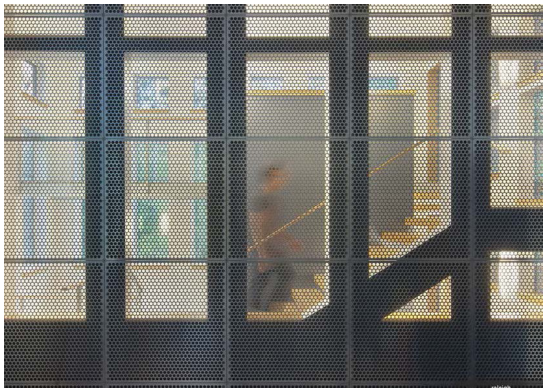
All information in this case study was provided by one or more members of the project team.

For information on certifying your project to the NGBS, visit homeinnovation.com/green

Lessons Learned

- This was BuildSense's first experience with Heat Pump Water Heaters. They had a spacious mechanical room and needed it per the open space requirements. Something that could have been easily missed.

- BuildSense used Structural Insulated Sheathing on this project. It was attractive as continuous insulation, but had no fastener grabbing properties like typical sheathing. The blocking at windows and corners was critical. They have chosen to use Zip R sheathing or a combination of OSB sheathing with continuous exterior insulation on projects since this one.



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For more information visit
nahb.org/sustainability