



Farmhouse, a home by Rodwin Architecture and Skycastle Construction. (Photo courtesy: Rodwin Architecture).

Efficient, Sustainable Beauty

With right planning, green-built homes can be sustainable, beautiful and within budget

BY SARAH HUBER
LONGMONT MAGAZINE

Not long ago, those seeking a beautiful, efficient, sustainable and budget-friendly home had to abandon at least

one of these priorities. But today, thanks to technological advances in green design and construction, homeowners can hang onto their values, especially when opting for a custom home with designer and builder input from the start.

Scott Rodwin, firm principal

of Rodwin Architecture in Boulder, partners with Brandon David, president of Skycastle Construction, to craft homes that land on the “optimal balance point” of beauty, sustainability, functionality and budget. He explained, “Part of the secret

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sauce of the design-build methodology is that it allows us to have conversations between the architecture and construction sides early in the process.” This enables the Rodwin and Skycastle team to incorporate sophisticated sustainable features into a build that “do not impinge on the beauty or functionality of the house,” he said.

Rodwin and David’s holistic approach is on display in one of their recent homes, dubbed the Farmhouse. To maximize both comfort and efficiency, the home is blanketed in a double wall exterior envelope of insulation. “The details are what make this work,” said David. Careful attention to insulation and framing creates indoor thermal comfort while reducing energy loss and reducing energy bills. An Energy Recovery Ventilator (ERV) conveys fresh, clean air into the home; ERVs, a lifesaver for those with sensitivities to air pollution, are in demand in Colorado as smoke from wildfires increasingly impacts air quality.

Another way to maximize comfort and efficiency while limiting costs is to use passive solar design. The Farmhouse is oriented to protect the home from undesired heat gain in the summer and to accept solar radiation in the winter. Solar panels, moreover, perform optimally on a roof intentionally designed to capture solar energy. A LEED Platinum certified build, the Farmhouse is regenerative, producing more energy than it



Kitchen at the Farmhouse home. (Photo courtesy: Rodwin Architecture).

consumes.

The most significant leap for many homeowners wanting a green build is moving to “electric everything,” said David. “Not only is everybody doing solar,” he continued, “but there’s a lot of interest in battery backups and, of course, car chargers and induction stoves.” One of the most cost-effective electric options is an air source electric heat pump. These are long-lasting and 250 percent more efficient than a conventional furnace and air conditioning system. Rebates from Xcel Energy combined with tax credits from Colorado and the U.S. government have made air source electric heat

pumps even more affordable. “There is a lot of new technology we can use to make our homes more sustainable, but this is where we start,” Rodwin said. “Financially, this makes a lot of sense.”

A home design and building innovation that was brought to public consciousness by the Marshall Fire is resiliency. Once a term used mostly in reference to water conservation, resiliency intersects with sustainability to refer to a home that responds to its environment, such as a house with ignition-resistant exterior materials. Homes designed for the Colorado climate – from the state’s strong sunlight, lack of water and highly expansive soil to risks from fire, hail and wind – are intrinsically sustainable and resilient, noted Rodwin.

While every Rodwin and Skycastle home is built green, styles can vary tremendously. “Sustainability can look like anything, from true modern to very traditional,” Rodwin said.

David added that clients operating within a set budget appreciate that a design-build model can accurately predict and control costs from the beginning of the project. He said, “We can help a client to have all the tools that they need to make the decisions about where and how they want to spend their money.” LM



A LEED Platinum certified build, the Farmhouse is regenerative, producing more energy than it consumes. (Photo courtesy: Rodwin Architecture).