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The kitchen of Barry Price Architecture's Rake House, looking into the living space of the home. Photo: Preston-Schlebusch Photography.

BARRY PRICE ARCHITECTURE

Drawing from evolving insulation technology to yield modern, high-performance structures

by Peter Fretty

LIKE MANY ARCHITECTS SECURING THEIR position within the maturing green-design environment, Barry Price's taste for sustainability has been an evolution. Trained in modern architecture, Price found himself in California early in his career. However, when he moved east to establish his own practice, he noticed the importance of addressing challenging climate issues as a fundamental component of his design.

"I have come to embrace a stylistic shift with a vision for the climatic requirements," says Price, founder and principal of the 16-year-old Bearsville, New York-based Barry Price Architecture. "Achieving this blend, in part through the creative use of today's technologies, ultimately helped me form my sense of environmental sensibility."



ORIGINAL TO FORM

The living space of the completed barn was insulated and finished within the original barn shell. This project's architecture was designed by a collaboration between Russell Krysiak, Ilene Mark, and Barry Price; the home's engineering work was performed by Ross Dalland P.E.; and it was built by Tate Construction. Photos: Chris Kendall Photography.



While some of his peers remain enamored with finding ways to integrate the latest renewable-energy solutions into designs, Price takes a different stance. Although he in no way discounts the role of emerging, natural-power-generating systems, he sees the advances in insulation as both intriguing and empowering as he focuses on designing high-performance structures. "The fact that newer insulation strategies are allowing us to obtain higher R-values without conventional thicknesses means that we can move away from building heavy structures simply to accommodate insulation," he says. "When the industry moved from 2" x 4" to 2" x 6" to meet the energy code, structures got heavier and walls got thicker—using more wood and larger foundations."

Today, this process can be reversed, Price explains. "We can go back and lighten up structures. If you have a window opening in a 2"x4" rather than 2"x6", the shallower wall thickness provides views from wider angles. It

is subtle, but the differences are interesting," he notes. "New insulation technologies also allow us to move away from the limitations of roof shape associated with effective roof ventilation, so we can be more creative with roof forms while increasing performance."

The movement away from cavity insulation and towards SIPs is another example of how insulation technology is enhancing design capability. "In a high-performance house, the sheathing is doing most of the work, which allows us to differentiate the wall-assembly exposed structure on the inside, thermally isolated by continuous insulation on the outside," he says.

This rings true on a Price-designed project currently under construction—a 4,400-square-foot mountain retreat. Nestled into a setting that embraces the site's natural slope, the house uses SIPs combined with a repetitive structural-steel frame and floating concrete-floor system



EYE FOR DESIGN

The Rake House, another of Barry Price Architecture's projects, includes an articulated roof to accommodate solar-thermal panels. The project's architecture was designed by a collaboration between Russell Krysiak, Ilene Mark, and Barry Price; the engineering work was performed by Stinemire Engineering; and the home was built by All About Construction and Benson Steel Fabricators. Photos: Florian Holzherr.

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exposed on the interior of the walls and ceilings of the home. "The steel establishes scale and a proportional rhythm in the same way a timber frame would in a traditional structure," Price says.

The roofing design on this project goes a step further. "Overhangs are a significant component of any sustainable building for numerous reasons, yet with conventional construction we have to work diligently to address thermal bridges at rafter penetrations. Using SIPs addresses this problem but leaves you with heavy-looking overhangs." Price addresses this issue with a roofing solution that supports itself as an overhang. "By adding a steel plate to a laminated-plywood roof deck above an SIPs' roof structure, we are able to extend a two-inch thick overhang," he says. "We eliminate thermal bridging and heavy-looking overhangs at the same time. We can now take advantage of the roofing being a dynamic component that emphasizes the shadow cast by the overhang, rather than the overhang structure itself."

Barry Price and his company prove that homes can be dramatic architectural solutions, emblematic of how the building is made, and go on to show how sustainable innovations are in fact changing the face of modern architecture. **gb&d**



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