

Interior of the horse barn at Ketchen Place Farm.

Fresh Air and Lots of Light? It's Just Good Horse Sense

Blackburn Architects Designs
a Smart Barn for a South Carolina
Horse Breeder

by Ronald O'Rourke

Photo by Cesar Lujan

Horses in their stalls at Ketchen Place Farm.



Photo by Cesar Lujan

Downtown DC may not look much like horse country, but it's home to one of the nation's leading architectural firms for equestrian facilities—**Blackburn Architects, PC**, headed by principal **John Blackburn, AIA**. Over the last 27 years, Blackburn Architects has designed more than 150 equestrian facilities for clients across the United States and Canada. The firm also designs residential projects, commercial interiors, and historic renovation projects, and maintains a satellite office in San Francisco to better serve its West Coast clients.

One of Blackburn's most recent projects is a new barn for Ketchen Place Farm, a breeder of dressage horses located on a 50-acre site in Rock Hill, South Carolina. The builder for the project was Advanced Equine Construction of Corbin, Kentucky, which has built barns and other equestrian facilities for 26 years. In addition to the new barn, Blackburn's work at Ketchen Place Farm includes a separate building with a four-bay garage and a two-bedroom residence above, a run-in shed, redesigned and improved roads, fencing, and a new entrance for the site. All these elements conform to a new site master plan that Blackburn first developed for the clients.

The design of equestrian facilities—a category that includes barns, stables, arenas, and training facilities, among other structures—is a specialized branch of architecture that requires an intimate knowledge of both the safety and health needs of horses and the functional needs of their business or recreational owners. Designers must pay attention to a lot of details, many quite small (such as the placement of light fixtures and switches), which, if handled improperly, could pose a risk to horse safety or health. As a result, the sophistication of a well-designed equestrian barn may not be apparent at first glance to those who don't work closely with horses. But it's much

appreciated by the clients, for whom getting those details right can be critical to business success.

"Because a horse is intended to live in nature, as soon as you bring a horse into a paddock—and more, into a barn—you're asking for trouble unless the design responds to the horses' health and safety needs," Blackburn said in an e-mail. "That's why we design all our barns to be natural—naturally ventilated, naturally lit, and designed so the conditions within the barn balance those of the natural environment. Regarding those concerns and other more-detailed ones, there are hundreds if not thousands of things one needs to know or be aware of regarding the behavior, habits, and natural instincts of horses when designing a shelter for them."

"My primary concern is always to plan the site and design the building to respond to protecting the health and safety of the horse," he added. "While we must balance the demands of the site, the goals of the owner, and the budget, the health and safety of the horse is always our biggest priority overall."

The barn at Ketchen Place Farm is a U-shaped shed row structure with 20 regular stalls, two larger foaling stalls, five washing and grooming stalls, plus a tack room, an office, a storage shed, and a second-floor studio apartment for watching over foals. The courtyard created by the barns' three sides, Blackburn said, "allows the client a contained area to show horses for sale, provides a protected area for people to gather, and allows space for the client to practice dressage."

Traditional barns are often built with a loft over the stables for hay storage—an arrangement that reduces opportunities for bringing in natural light and creates a fire risk. Departing from this scheme, the barn at Ketchen Place Farm eliminates the overhead loft in favor of a



A daytime view reveals the elegant simplicity of the horse barn.

Photo by Cesar Lujan

continuous ridge skylight with venting that runs the length of the structure. In addition to admitting ample light, the arrangement creates a vertical convection current in which warm air vents out the top, drawing in cooler, fresh air from the outside.

“A shed row barn is inherently open and is easily ventilated and lit naturally,” Blackburn said. “While the relative openness of this barn would provide overwhelming ventilation in a cooler climate, it’s perfectly suited to its warm South Carolina climate.” The vertical air circulation scheme also avoids the need for horizontal ventilation running through the length of the building—an arrangement that can transmit pathogens from one horse to another.

“The budget for the site was a bit of a challenge, as we wanted to provide all the elements of the clients’ program while providing a quality design,” Blackburn said. “We wanted the design to respond to the site and the vernacular [architecture] of this area in South Carolina.”

“Ketchen Place Farm sits in a rather rural area and we wanted to design the farm using materials that reflect the environment,” he elaborated. “We didn’t want to dress the barn up and make it something it’s not. I had recently read about [the architect] Samuel Mockbee’s Rural Studio and was inspired by his philosophy of design, its connection to the rural south, the use of local materials, and how it could fit into a tight or lower budget.”

As a result, he said, “concrete block, wood framing, and corrugated metal roofing are the three primary materials used for the project. We were able to efficiently and cost-effectively design the barn in an almost modular fashion, creating a 12-[foot]-by-12-[foot] grid pattern to minimize the use of materials and maximize the space.”

Although green, or sustainable, design is a relatively new area of emphasis for some architects, Blackburn’s firm has been practicing it for more than 20 years. The LEED (Leadership in Energy and Environmental Design) certification system for green design

administered by the U.S. Green Building Council doesn’t include standards for agricultural buildings, but the staff at Blackburn Architects includes LEED-accredited equestrian designers, and the firm incorporates LEED principles into its equestrian projects.

“Virtually all the materials used were local and/or manufactured within 500 miles of the site,” Blackburn said. “[Providing] natural light to all areas reduces the need for electric power. This barn has a very low electrical demand, and electric lights aren’t required during the day. There’s very little heating [required] in this location, and though air conditioning is prevalent in the area, there’s none required in this barn. The only climate-controlled space is the small apartment on the upper level, and even that uses natural light to light the space.”

“Though no gray water collection system has been installed,” he added, “the sloping shed roofs are designed so rainwater collection could be easily installed if desired. All surface drainage is collected on site and permitted to drain back into the soil. The building itself has a small footprint since it’s relatively low to the ground and works with the natural contours of the site.”

“Buildings,” Blackburn says on his firm’s web site, “can be designed to reflect the architectural vernacular of a region, yet remain effectively ‘green’ without sacrificing aesthetic beauty.” The owners of Ketchen Place Farm would agree. 🌱

Project: Ketchen Place Farm

Architects:

Blackburn Architects, PC; Washington, DC

Engineers:

Tate, Shahbaz & Associates, PC

Contractors:

Advanced Construction of Kentucky

Stall Systems Consultants:

Lucas Equine