An architect can be pivotal on the team that designs the "perfect" barn

Dream Stable

It's a team effort, designing the perfect barn. It begins with the owner of the property where the barn is to be built. If the farm manager is someone other than the owner, that's another party who will be involved in the planning stage.

The owner/manager must communicate a vision of his dream stable to the general contractor who will build the barn and hire the sub-contractors that will be involved in the project; manufacturers of the stable equipment that will be installed to create a safe, healthy, and comfortable environment for horses and employees; and the companies that supply the construction materials. They are all members of the team.

Either the owner or the contractor might be in a hurry to get the job done, but the owner is the one who is going to live with the results. Changes almost certainly will be made to initial plans as the project progresses, but to get to where you can estimate the cost of the barn, let alone where you can fine tune your vision, details, details, details are needed.

It might be wise to add another member to the team—an architect.

Lots of good barns have been built without an architect. But an architect can be the team's pivotal player, helping the owner sharpen his vision, facilitating communication with the contractor, and integrating design features with stall equipment and construction materials for maximum results, not

ANNE M. LAREGUARDY PHOTO

Total square footage of the barn is the first detail that helps define the scope of the project

only in appearance, but in safety and function.

John Blackburn is senior principal in Blackburn Architects, P.C., a Washington, D.C., company that first journeyed into equestrian facilities when it designed the yearling and broodmare barns at Heronwood Farm in Upperville, Va., in 1986. The firm's next equine project was Lane's End, near Versailles, Ky.

Chenault Woodford is a principal in the Lexington firm of Chrisman Miller Woodford Architects & Engineers. CMW, Inc., as the firm is known, designed the Kentucky Horse Park and Gainsborough Farm, and is currently designing a breeding and training facility for a group of American investors in the former Soviet republic of Kazakhstan.

Two architects with proven track records in designing equestrian facilities for clients around the country, Blackburn and Woodford offered the following tips that could help you plan your dream stable.

Barns for Every Budget

It boggles the mind to think a 2,000 square foot barn can range in cost from $40,000 to $190,000. Obviously, lots of variables are involved.

Total square footage of the barn is the first detail that goes into defining the dream stable. Once total square footage is defined, cost can be calculated by the square foot. An owner/manager might be inclined to think in terms of cost per stall, applying the same cost per head standard typically used to calculate the costs of operating a horse farm. But barns usually contain an aisle between the stalls, and other space that wouldn't be counted as a stall. So, while cost per stall provides a handy translation into horse farm management terms, the cost per square foot standard provides a more accurate basis for calculating a project's cost.

Building type is the first variable that determines the price per square foot. There are several building types from which to choose, and a range in cost within each category.

Woodford described five building types, and gave a range in cost per square foot for each:

Building Type	Price Range Per Square Foot*
Pole barn	$20 to $35
Metal building	$30 to $40
Stud frame	$35 to $45
Timber frame	$40 to $60
Masonry	$65 to $95

*Regional prices may vary.

Air, Light, and Glamour

Choices in materials and equipment are the next variables. Get specific. Remove the element of doubt from every detail—floor, roof, stall doors, interior finish, exterior skin. "In theory you could start out with a matrix. Here are five building types. Beyond those five building types you have four or five other factors. Each decision has a cost range. What happens in a floor can range from $1 to nearly $9 per square foot," Woodford said.

Floors can be dirt, gravel, asphalt, concrete, brick, or the rubber brick now commonly seen in walking rings or saddling paddocks at racetracks. Gravel is usually padded with rubber mats to protect hoofs. Concrete also may be padded at the additional expense of the rubber mats. Management needs to consider the long-term maintenance of the floor—horses paw holes in dirt stalls, for example; and potential savings in bedding expense—asphalt, concrete, or brick require more bedding than gravel with a mat, or rubber brick.

A myriad of design features can be incorporated for health, safety, and appearance. Recessed spaces in the aisles for water faucets; padded walls; rounded corners; oak wainscoting, or kick boards, lining concrete block stalls; an outside stall door; open grills set into the dividing walls between stalls to allow inhabitants to socialize. However, adding any of these options is going to affect the cost.

Blackburn listed three components of barn design in their order of priority:

1. Needs of the horse.
2. Demands of the site.
3. Wishes of the owner.

"The only thing that doesn't change is the needs of the horse," Blackburn said.

Volumes have been written about the need for ventilation in a horse barn. Cleansing winds must purge the stable air of the dust and mold in bedding, hay, and feed. Cooling breezes must circulate and provide relief from the heat. Cupolas, dormers, or high roofs conduct air upward and outward, and lend a stylish grace to a barn. In this way ventilation, always the first consideration from a horse health standpoint, serves as the first opportunity for personal expression that can set one farm apart from another. It also opens the barn up to the possibilities of natural light.

Natural light is a detail that can easily be overlooked without an architect. It won't eliminate the need for artificial

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Team Work

Lucas Equine Equipment in Cynthiana, Ky., was noted as a team player by one farm manager who is converting a cattle farm to a broodmare and yearling operation. The company custom-builds stall doors, grill work, barn and entrance gates, and other stable equipment, and works with the owner, farm manager, or architect to meet specific needs.

Horseman's Track and Equipment serves as general contractor, engineer, and supplier of heavy machinery in the construction, renovation, or maintenance of track surfaces at farms, training centers, and racetracks throughout the United States and abroad.

"We can provide a turnkey project and guarantee everything is done properly and has a nice warranty on it, and we bring in the best specialists in their field. And that saves the owner a lot of money in the long run," said Steven Greene, president of the Louisville company. Their patented Rider Protection System safety rail is in use at Colonial Downs, Lone Star Park, and Gulfstream Park.

light in the winter to induce early heat cycles in barren mares, but when a barn is designed to catch the sun's rays, and a light color is used to paint the interior, it's easier for employees to see what they're doing.

The broodmare and yearling barns at Heronwood are distinguished by two eye-catching features. One is a skylight that runs vertically from one end of the barn to the other, letting in natural light. The other is the handsome stone masonry frame.

Availability of material is one demand of the site, owing to the high cost of transportation. The stones used to build the barns at Heronwood were torn from the farm's old stone fences, which helped contain the cost of the project.

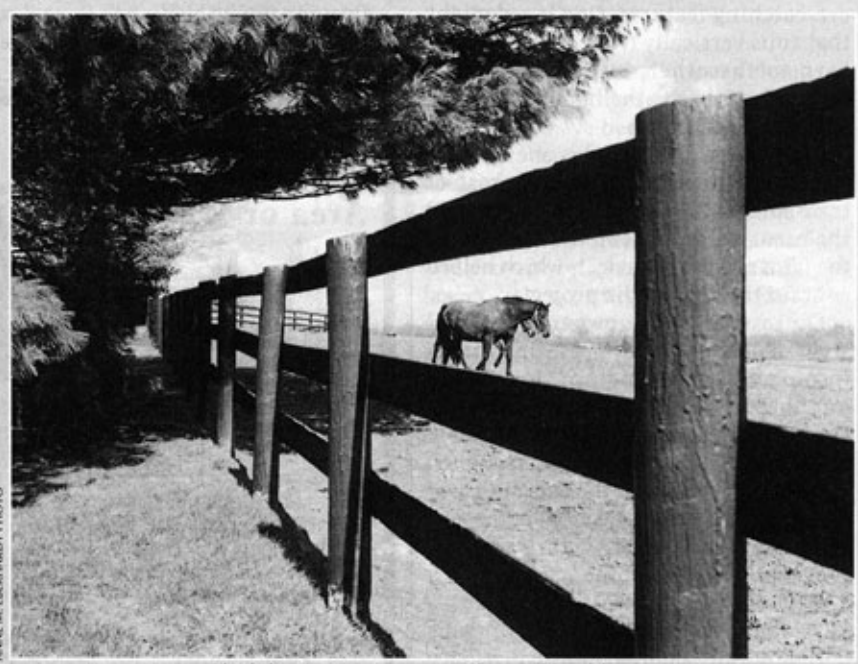
Expression of the owner's personal style, and the type of operation, come into play at this juncture. In a Thoroughbred operation, where glamour simply to impress visitors is justifiable in the name of business, a farm can radiate prestige through the appearance of its barns. "You don't want a doctor or a lawyer who doesn't drive a Mercedes, the same way you don't want to pay a $100,000 or a $50,000 stud fee for a horse that lives in a cheap old barn that's falling down," said Woodford.

At some commercial stud farms, stallion stalls are luxury apartments in stables that are ornate palaces. Is the barn meant to Wow! visitors or simply provide shelter for the horses and convenience for employees?

"The first thing to start the decision-making process is for the owner to have enough awareness of what he can have and what it's probably going to cost. If the owner is inexperienced, or of limited experience, and he concludes, 'I need an eight-stall horse barn. I guess I better find me a contractor,' he's not doing it the right way. He needs to do a lot more research, with or without professional help, before he starts talking to contractors," said Woodford.

The (Barn) Doors

Penrod Lumber, in Simpsonville, Ky., specializes in fencing materials, and supplies more than lumber. For the barn, Penrod is a supplier of Delrin rollers, a product that literally opens and closes doors. Delrin's round tracks are replacing square tracks for the rollers on barn doors, said Greg Griffith, company owner. Other rollers "are made out of metal, so if the weather deteriorates you get rust. On your end doors, it's a problem," he said. National Manufacturing Co. makes the zinc-plated rollers, which are corrosion resistant. Delrin rollers are easy to install and operate, self-cleaning, long lasting, and can support a 600-pound door.



ANNE M. EBERHARDT PHOTO

Plank fencing is common at Thoroughbred farms

Formula for Evaluating Bids

An owner/manager who has given some thought to his or her dream stable might be ready at this point to accept bids from contractors.

Opening up the bidding to several contractors is a time-consuming process, but the more contractors invited to bid, the more confident the owner/manager can be that he'll find a contractor he wants on the team, as well as a fair price.

Bids that vary too widely indicate the owner might benefit from hiring an architect, said Woodford, who suggested the following formula for evaluating bids:

Throw out the highest and the lowest bids, then average the remainder of the bids. If the estimates vary by no more than 10% of the average, the owner has done a good job of defining his dream stable. If they vary by more than 10% of the average after the highest and lowest bid is thrown out, then something about what the owner envisions his dream stable to be is getting lost in translation. Greater clarity of detail is needed.

Economy, Luxury, and Harmony

In sound farm management, economy is equally a matter of low-maintenance over the lifetime of the barn and day-to-day operating expense, as it is the short-term cost of building the barn. "Value engineering," was the way one farm manager described it.

Tobacco sheds are old-fashioned timber frame. The sheds have high roofs that provide good ventilation when converted to a horse barn. Renovating a tobacco shed can be done for $12,000 per stall. A new concrete block barn can run you $30,000 per stall.

Cost per stall of a concrete block foaling barn Blackburn designed for one farm was $85,000. The barn contained seven stalls that were fitted with padded walls, outside stall doors and other deluxe features, and an indoor exercise ring for mares and foals to stretch their legs without risk of injuring themselves in slippery paddocks during inclement weather. The cost per square foot of that barn came to $95.

Blackburn said that within the $20 to $95 per square foot cost range,

"spending $50 to $60 per square foot will get you a good, average, well-designed barn. From there you can add the extras, like oak wainscoting, which has a functional as well as an aesthetic need."

The majority of owners who opt for the economy of pole or metal barns usually do not hire an architect. These barns usually won't be dressed up with the luxury features that typically go into a concrete block or brick barn. Likewise, it makes little sense to opt for a brick barn only to cut corners in the equipment. It's a matter of achieving harmony in the overall appearance, Woodford said.

Blackburn has developed a chart to compute cost based on the framing system, materials, interior finish, and exterior skin. The chart helps the client get the cost and the finish in balance early. Some architects "tend to design something and then it finally goes to bid, and it's too costly, so you have to make cuts," he said.

Early in the process, Blackburn sits down with the client and talks about the finish and design "so we can establish a budget," he said. "We like to get our buildings built, not just designed."

Budget limitations set caps on the wish lists of many owner/managers. Hiring an architect won't result in building a barn for the lowest possible price, but an architect can help the cost-conscious owner get the most value for his money.

Blackburn summed up by saying, "They've been building houses for horses for years without architects. But if you want to design a building to look good and be efficient, and be a safe environment for your horse, that's what the architect brings to the table." ■