Going Green With Green Barns

An architectural rendering of a barn that utilizes open vaulted spaces to promote ventilation and increase natural lighting.
Photo courtesy of J Martinolich Architect

By Katie Navarra

We're surrounded by energy-saving devices at home and at work. From appliances to vehicles to energy-efficient light bulbs and gadgets designed to limit waste or reduce the volume of water or electricity consumed, we're regularly reminded of the importance of going green.

But when we head to the barn do we take "green practices" with us?

Compared to homes and commercial buildings, "Equine facilities are inherently green friendly," said Joe Martinolich, owner of J Martinolich Architects in Kentucky. "Barns are low energy users as compared to a house or commercial building because they're not usually air conditioned or heated."

Often green practices go hand in hand with good horsemanship. Regardless of the barn structure, a healthy, clean barn creates a more pleasant environment and compliments efforts to reduce our carbon footprint. Joe gave *Sidelines* some advice as to how to ensure your barn maintains that pleasant environment and utilizes as little energy as possible.

Let There Be Light

Well-lit barns provide a safe, comfortable working environment. Light is needed to illuminate stalls, tack areas, work areas and aisle ways to make the spaces easier to work in and safer to pass through.

"I always think about how it'd be to work in an area," he said. "If I had to clean a stall, how easy would it be? If there's a dark corner and I can't see what I'm doing, the stall won't get as clean as it needs to be."

However, increasing the brightness in a barn doesn't necessarily require additional lighting fixtures. "I encourage people to use daylights as much as possible," he said. Cupolas, dormers, windows and external stall doors provide an abundance of natural lighting. Artificial lighting is still necessary for evening hours or dark days, but the strategic use of natural lighting reduces a barn's overall energy consumption.

The type of light fixture also impacts the energy use in a barn. Traditionally, incandescent light bulbs were the bulb of choice in aisles, stalls and tack rooms because they were inexpensive. While cheaper to purchase, incandescent bulbs burn out more quickly, use more energy and produce heat.

Alternative light fixtures are rapidly replacing incandescent bulbs to conserve energy and as a replacement for the incandescent bulb, which will soon be obsolete. "Compact fluorescent lights and LED lights cost more, but are more energy efficient and, when properly selected and paired with the proper ballast, are less expensive to operate," he explained.

Occasionally, barn owners or managers ask Joe about the benefits of photovoltaics, the method of generating electrical power by converting solar energy into electricity. "Photovoltaics

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might be an option if you're far off the power grid and the cost of running power to the site is high. It may also be worthwhile if geographically you have very high energy costs," he added.

Integrating solar power into your farm requires planning and budgeting. It's imperative to consider how much electricity is truly needed and whether or not the geographic location is conducive to solar power. Equipment can be costly and even though depreciated over time, if enough energy isn't produced, the equipment may need to be replaced prior to reaching its full potential. "It's important to do the calculations; it may not be cost effective," he cautioned.

Renovating Responsibly

When renovating or building a barn, consider recycled products. Recycled products are an excellent way to decrease the amount of waste in landfills while simultaneously decreasing long-term expenses. "At one farm the manager chose a recycled wood product line, similar to Trex, the decking product," he said. "The product is recycled, weather resistant and long lasting."

Selecting products that are ready to install rather than needing painting, staining or other treatments is another way to limit your barn's carbon hoof print. "Lots of paint products put off volatile organic compounds (VOC's)," he added. "Even low-VOC paints release fumes into the environment."

Concrete block and other products with the finish blended in directly may initially cost more, but the savings are significant over the long term as the products don't require refinishing, which costs time and money.

Lush Landscapes

Well planned landscaping provides more than aesthetic benefits. Carefully selected trees provide shade for arenas and barns. Decorative cobblestone pavers beautify walkways and aisles. However, plants and pavers can be as functional as they are beautiful.

Large surface areas like rooflines, driveways, grassy paddocks and sun-dried earth shed rainfall without directing it anywhere in particular. If not guided, the excess water erodes soil and carries silt, sand and other pollutants directly into natural streams and waterways.

Permeable pavers, though similar in look to traditional concrete pavers, are manufactured with a spacer along each edge so that when installed, small gaps are left between each paver. The permeable paving system allows for water and air to move through the area once it has been installed. The small gaps provide water a place to go, directing it downward into the ground, rather than allowing it to flow across a hard surface. Permeable pavers are gaining in popularity because of their environmental benefits, but also because national legislation requires municipalities and construction companies to use products to manage storm water runoff.

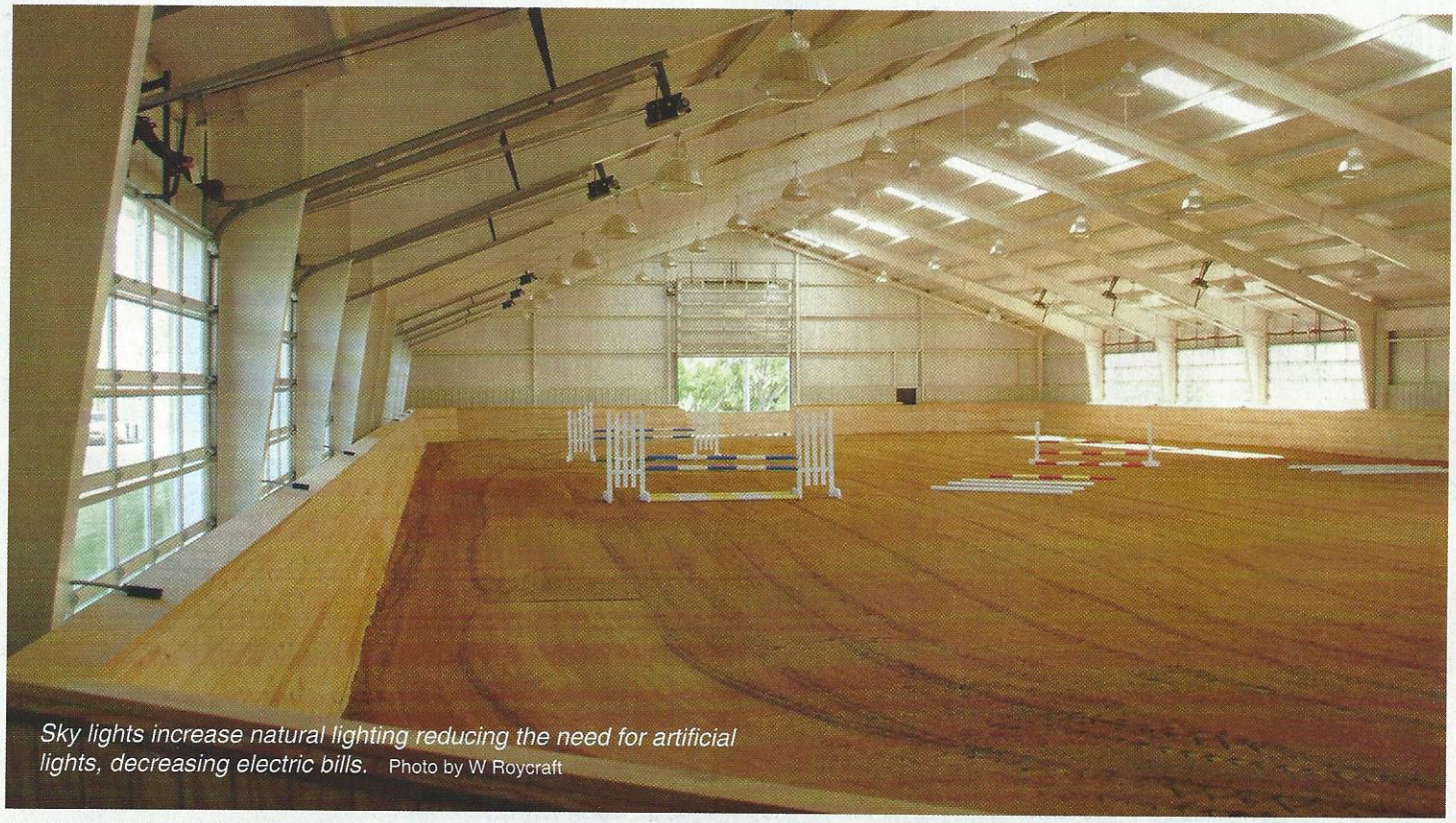
Equine facilities near urban areas are especially concerned with storm water runoff. State or local regulations may even dictate where or how a stable deals with runoff. In certain locations, rain gardens are also used to prevent storm water from entering streams and waterways.

A rain garden is 200 – 300 square-foot depression made in the ground and is filled with native plants. Excess water is directed to the rain garden where it sits for a day while the plants soak it in, filter it and return it to underground water sources. Places like Rutgers University Equine Science Center in New Brunswick, New Jersey, have installed rain gardens to capture and treat the storm water runoff from paddocks.

Reducing Your Carbon Hoof Prints

Implementing environmentally sustainable practices in a stable can require creative thinking and an open mind. It may even mean trying techniques used in other industries. The key is finding techniques that fit the individual stable's set up and daily operation. As it turns out, it may be easier to be green than you might think!

About the writer: Katie Navarra has worked as a freelance writer since 2001. She has been a lifelong horse lover and owns a dun Quarter Horse mare she competes with.



Sky lights increase natural lighting reducing the need for artificial lights, decreasing electric bills. Photo by W Roycraft