

STERLING EQUINE'S
**BARN PLANNING
GUIDE**



STERLING
EQUINE



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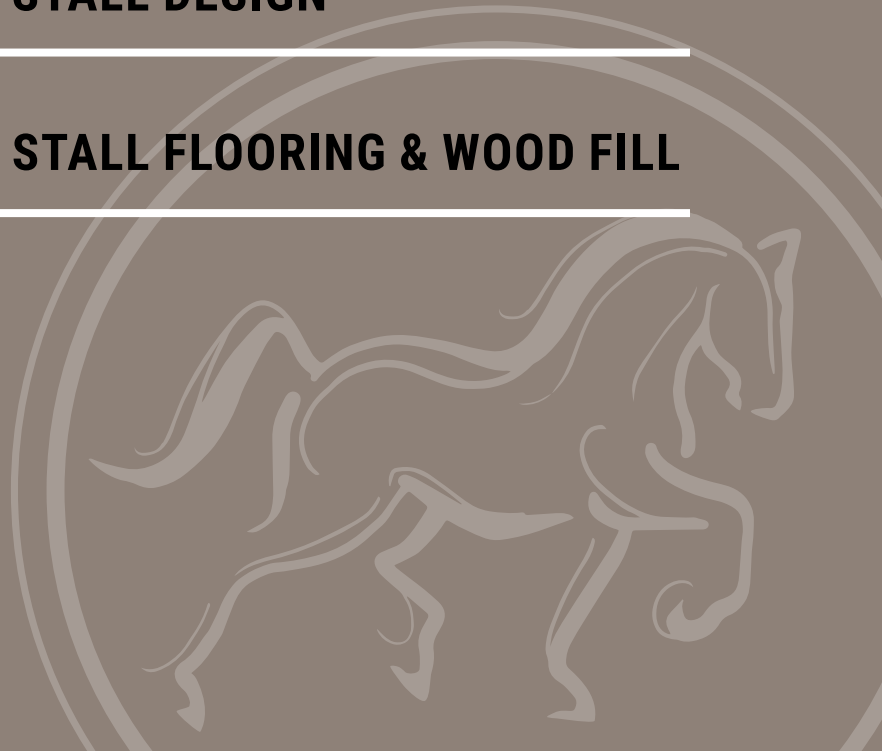
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INTRODUCTION

Welcome to Sterling Equine's Barn Planning Guide – a comprehensive resource to guide you in planning and designing your new barn. Whether you're dreaming of a traditional stable, a modular barn, or a custom-designed masterpiece, this resource provides practical considerations and expert advice to help you create a safe, beautiful, and functional home for your horses.



This guide begins with the foundational aspects of barn planning: your facility's function and your climate. In subsequent sections, we'll explore construction options, popular barn styles, barn layout considerations, and stall design options.

If you have any questions, don't hesitate to reach out to the Sterling Equine team. Our wealth of experience, focus on quality, and commitment to innovation make us partners you can trust as you build the barn of your dreams.

FUNCTIONALITY AND CLIMATE IN BARN CONSTRUCTION: WHAT TO CONSIDER

Building a barn is a substantial investment of time, energy, and financial resources. Conducting thorough research and planning is essential, starting with your barn's purpose and your local weather concerns. Below, discover essential insights for crafting your ideal horse barn and explore how functionality and climate considerations might shape your design decisions.

▼ Pole Barn with Shed Roofs



🔑 Key Considerations

- Define the primary purpose of your barn (e.g., breeding, boarding, training).
- Design your barn to withstand local weather conditions and climate.
- Optimize barn placement for light, protection, and ventilation efficiency.
- Consider regional weather events, like hurricanes or snow, in your construction plan.

■ **FUNCTION FIRST**

Understanding the use of your barn is the cornerstone of effective design. Specific barn functions will influence infrastructure: a busy lesson barn has different design needs than a small retirement facility, for example. Carefully consider the primary and potential uses of your barn, which might include breeding, boarding, training, lessons, events or shows, commercial use, or private use. Those uses will inform more specific elements like your stall dimensions, storage needs, and communal spaces.

■ **CONSIDER YOUR CLIMATE**

Recognizing the variations in climate across the United States is paramount in designing a barn that stands the test of time. An open-air design tailored for the warm south will not be suitable for the cold winters of New England, and your region's significant weather events should be factored into your planning. Hurricane-prone areas may require sturdier construction materials, while snow load considerations are vital in the northern parts of the country.

■ **PLACING YOUR BARN ON YOUR SITE**

The placement of the barn on your property also plays a major factor in its ability to withstand weather and serve as a comfortable shelter for horses. South-facing shelters or windows will provide the most light, as well as protection from the elements. Barns should be placed to capture breezes for ventilation while also allowing prevailing winds to flow over the structure.

HELPFUL HINT

While considering the placement of a barn, it's often useful to think about when horses will typically be inside the barn, both in a 24-hour period and over the course of a year.



BARN CONSTRUCTION

The world of barn design offers more possibilities than ever, and there's a perfect fit for every horse owner's property. Choosing how you'd like your barn to be designed and constructed is a crucial step in the planning process. The three primary options, traditional, modular, or kit, each have distinct advantages and drawbacks. Next, you can plan your barn's shape and style. A combination awaits that suits your needs, location, climate, and budget.



Key Considerations

- Choose between traditional, modular, or kit barns based on flexibility and construction time.
- Select a barn style (stick-built, pole barns, post and beam) that aligns with your budget and aesthetic preferences.
- Decide on open or enclosed barn styles considering your regional climate.
- Evaluate the advantages and limitations of each construction method and style.



■ **TRADITIONAL BARN CONSTRUCTION**

Traditional barn construction involves a full wood frame built entirely on-site. As each barn is built to spec, this allows lots of flexibility in design, whether you've chosen a straightforward shed row or an intricate timber frame stable.

While fully customizable, traditional construction is time-consuming, and building materials may be exposed to the elements during construction.

Traditional Barn Construction

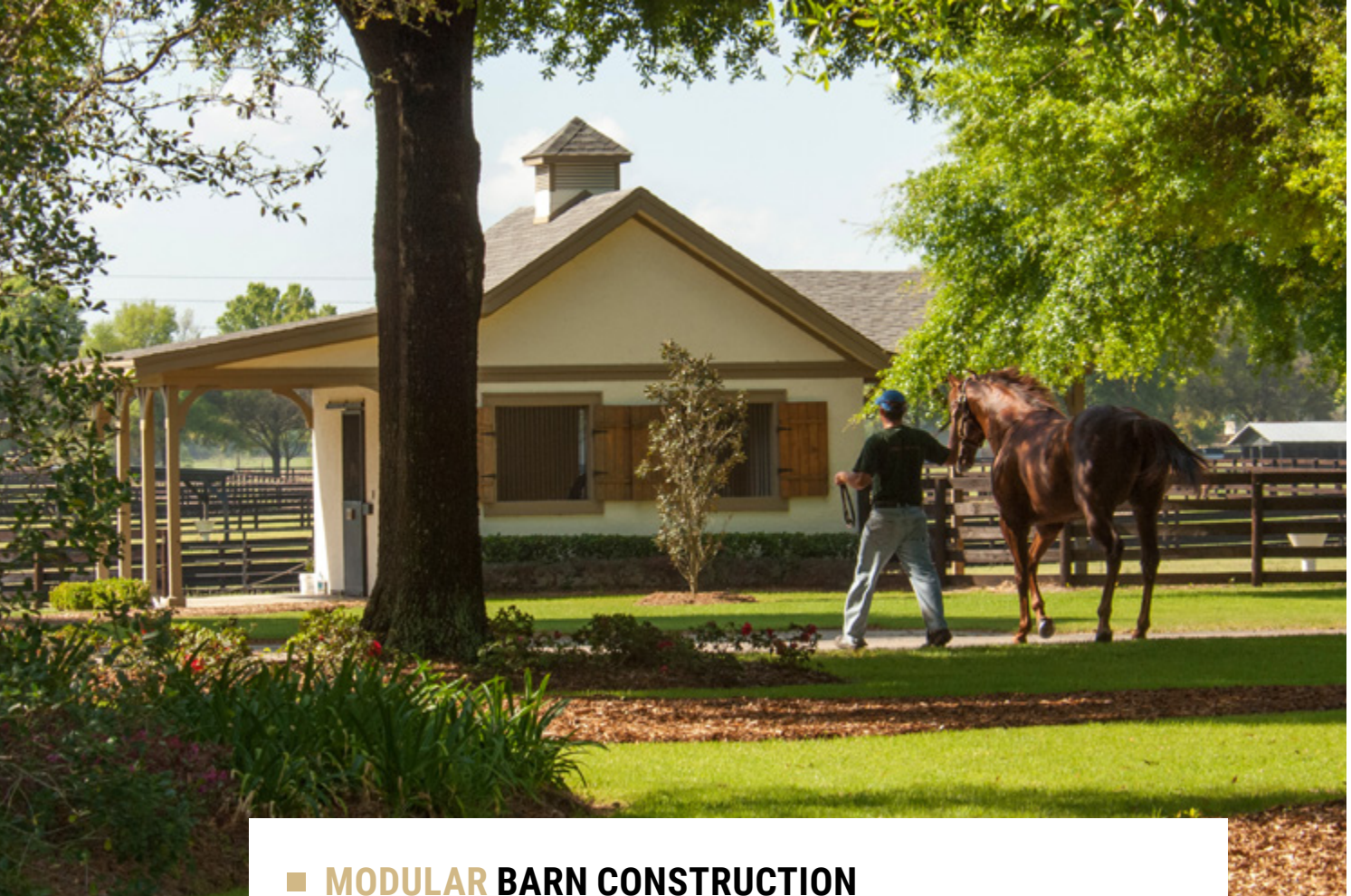
FAST FACTS

- Full wood frame, built entirely on-site.
- Highly customizable to specific design needs.
- Time-consuming and may require architect involvement.
- Building materials potentially exposed to elements during construction.
- An architect may be required.

HELPFUL HINT

Traditional barn construction is the most complex method of building a barn, and the process may include hiring an architect.





■ MODULAR BARN CONSTRUCTION

Modular barns are partially built off-site, transported to your location, and assembled there. This can shorten the building process substantially, reducing labor cost. Modular barns are less customizable than traditional construction, but builders offer various designs and options to suit your needs. It's important to remember that site preparation must be budgeted separately from the modular structure itself.

Modular Barn Construction FAST FACTS

- Partially built off-site and assembled on location.
- Shortens building time and reduces labor costs.
- Less customizable than traditional barns.
- Separate budget needed for site preparation.

■ BARN KIT CONSTRUCTION

Barn kits blend traditional construction with the pre-design of a modular barn. While less customizable than other options, kits are ideal for DIY enthusiasts, as each kit is shipped to the buyer with all the components for on-site assembly. Barn kits come with plans that save time on material sourcing, but building a barn from a kit still requires significant labor and site preparation.

Barn Kit Construction **FAST FACTS**

- A mix of traditional construction and modular design.
- Less customizable but ideal for DIY assembly.
- Includes all components and plans for on-site building.
- Still requires significant labor and site preparation.





EXPLORING HORSE BARN BUILDING STYLES: KEY CONSIDERATIONS FOR YOUR HORSE PROPERTY

Stick-built barns, pole barns, and post and beam barns are the three most common building styles for barns. Your budget, design goals, and preferred construction will all inform what style you choose.

Read on to discover your ideal horse barn construction method with insights on traditional, modular, kit, and metal builds.

■ **STICK-BUILT BARN**S

Stick-built or stick frame buildings are also called “conventional” construction, and use 2” dimensional lumber for framing. The use of lumber in trusses and load-bearing walls can limit usable space within the barn, but stick-built structures are generally more budget-friendly than post and beam or timber frame barns, and are typically constructed on-site.



Stick-Built Barn FAST FACTS

- Known as conventional construction.
- Use 2” dimensional lumber for framing.
- More budget-friendly, but may limit usable space
- Typically constructed on-site.

■ POST-FRAME AND POLE BARN

“Post-frame barn” and “pole barn” are often used interchangeably – but while every pole barn is a post-frame building, not every post-frame barn is a pole barn! Pole barns derive their name from support poles or posts, which are fixed in concrete or metal footings to anchor the barn. This cost-effective option omits the need for a foundation but may incur additional costs for interior features like stalls and lofts. Pole barns are usually built on-site, but also come as barn kits.

Pole Barn FAST FACTS

- Support poles/posts are key features.
- Fixed in concrete or metal footings, eliminating the need for a traditional foundation.
- Cost-effective, though may have additional interior costs.
- Built on-site or available as kits.





■ POST AND BEAM BARNs

Post and beam and timber frame barns are constructed with 6" timbers, offering durability and aesthetic appeal, and have more usable space inside due to the lack of load-bearing walls and trusses common to stick-built structures. While visually striking and built to last over a century, these styles tend to be pricier due to premium materials and craftsmanship. Options include on-site construction or modular/kit assembly.

Post And Beam FAST FACTS

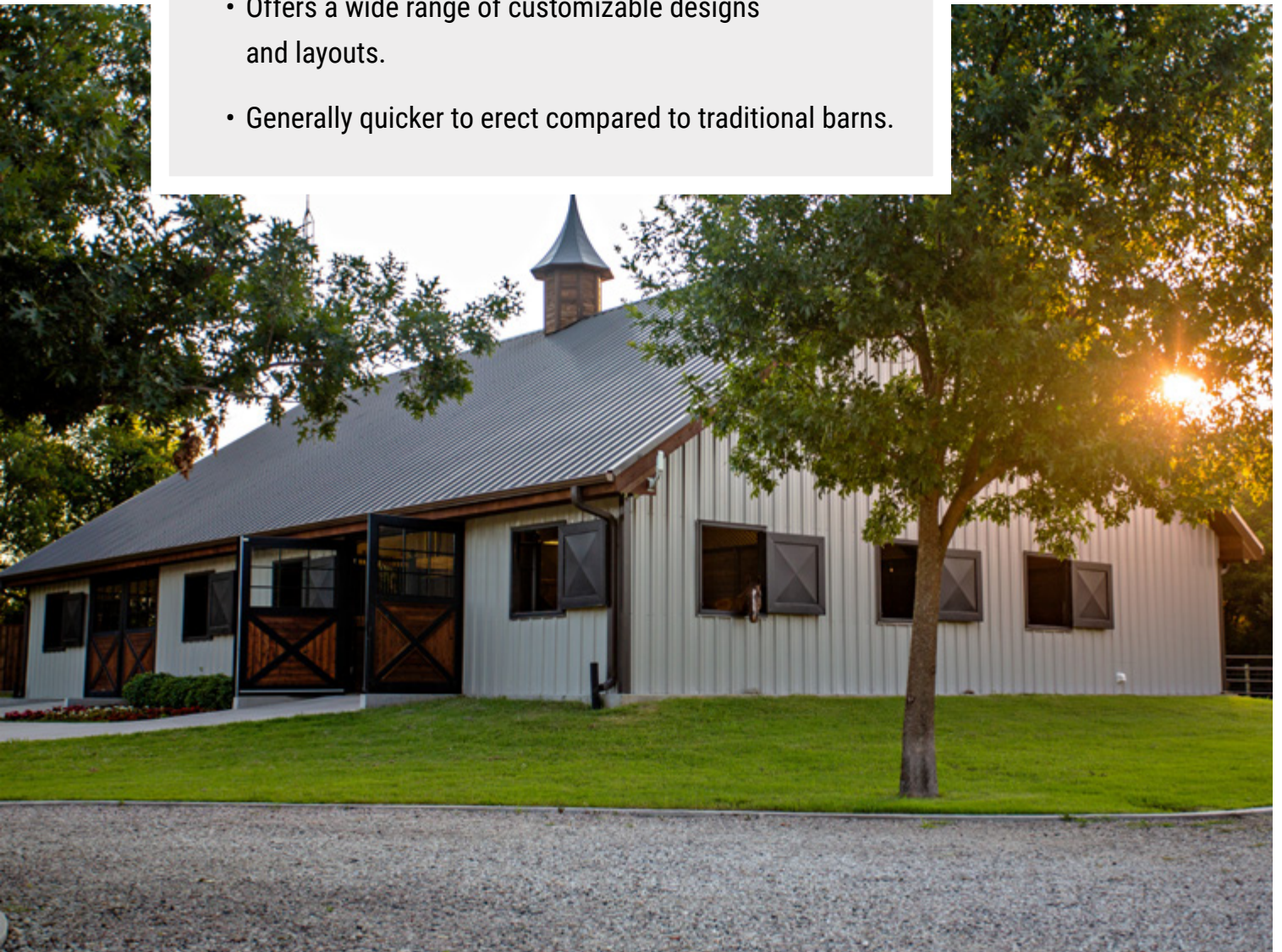
- Constructed with 6" timbers for durability and aesthetics.
- More usable interior space without load-bearing walls.
- Visually appealing and long-lasting but generally more expensive.
- Can be built on-site or assembled from kits.

■ METAL BARNES

Metal barns are a modern and maintenance-free alternative to traditional wood barns. Their durability and resistance to weather, pests, and fire make them a safe and long-lasting choice to house your horses. Steel construction enables quick assembly and offers significant cost savings over time, while allowing for plenty of personalization and customization.

Metal Barn FAST FACTS

- Constructed with high-strength steel panels and frames.
- Highly resistant to weather, pests, and fire.
- Offers a wide range of customizable designs and layouts.
- Generally quicker to erect compared to traditional barns.





■ OPEN AND ENCLOSED BARN

Another key style consideration is whether you'd like to build an open or enclosed barn.

Open barns like run-in sheds, lean-to barns, and shed rows are best suited for mild regions but are seen all over the country. They offer excellent ventilation, as well as easy access to horses for facility staff and horse owners. Enclosed barns like center aisle barns and bank barns open to an interior aisle and are popular in colder climates.

HELPFUL HINT

Historic barns in your local area may provide more insight into regional suitability – bank barns, for example, provide natural insulation and were a traditional choice in New England.



PERFECTING THE LAYOUT AND DESIGN OF YOUR IDEAL HORSE BARN

Explore essential considerations for designing the layout of your dream horse barn, with practical tips and creative ideas to create the ultimate sanctuary for your equine.



🔑 Key Considerations

- Design a floor plan with adequate stall sizes, aisles, workspaces, and storage areas.
- Prioritize natural light and ventilation for horse health and energy efficiency.
- Ensure safe and accessible barn features, including non-slip flooring and multiple exits.
- Select barn and aisle doors that combine practicality with your preferred aesthetic.
- Depending on your barn's function, consider including amenities like lounge areas, laundry, or wash stalls

■ FLOOR PLANS, STORAGE, AND UTILITIES

Begin by thinking about your floor plan, factoring in stall and aisle dimensions, workspaces and storage areas, and access to water and electricity.

Stall dimensions should be tailored to the size and needs of your horses — a draft horse will have different space requirements from a pony or a mare with a foal. A basic guideline for average horses is 12' by 12'. Foaling stalls require additional space, often running twice as wide as regular stalls.

Your barn aisle should be wide enough to safely accommodate the passage of horses and handlers and turn a horse around — 12' is usually considered a minimum comfortable width. If you intend to move through the barn with tractors or other large equipment, plan your aisle width accordingly with room to maneuver. Ensure that the doors at the ends of your aisles are the same width as the aisle and have enough height for equipment you may drive into the barn.

HELPFUL HINT

Hinged partitions are an excellent way to offer both a traditional-size stall and a double-wide foaling stall, depending on the need.



▲ *Hinged Partition*

CONSIDERING DIMENSIONS WHILE PLANNING YOUR BARN: BALANCING SPACE AND COST

When planning the construction of a barn, selecting the right dimensions is crucial for creating a functional and cost-effective space. Common dimensions for barns and outbuildings include a wide range of sizes, from smaller structures that may measure 10x20, 12x20, or 16x24, to larger configurations like as 40x60, 50x80, or 80x100.

These dimensions can support various functionalities, including living quarters within the barn, a stand-alone living space, or even a lean-to for extra utility. Assessing the overall cost in relation to the desired dimensions is essential as you plan, ensuring your barn and buildings meet both your budgetary constraints and space requirements.

HELPFUL HINT

Water and electrical access are another consideration as you plan your barn's layout. Plenty of conveniently placed water spigots and electrical outlets are can greatly improve the day-to-day efficiency of your barn.

Storage space for feed, hay, and bedding is paramount in any facility, with options including feed rooms, feed stalls, lofts, or separate storage

sheds. As you plan storage space, consider how hay and bedding will be delivered, and ensure that routes between storage sheds and the main facility are straightforward and accessible in any weather.

Be sure to incorporate flat, well-lit spaces for veterinary and farrier care in your floor plan. Protection from the elements, water and electricity, and easy access for trucks and equipment will be appreciated by your vet and farrier team.

▼ *Feed Room Front*





▲ Dutch Door

■ HEALTH & SAFETY CONSIDERATIONS

Barn design elements like light, ventilation, accessibility, and flooring choices all impact your horses' health and safety.

Prioritizing natural light benefits your horses' well-being and can make your barn more energy-efficient. Windows, open or windowed doors, and translucent panels can all increase natural light in your barn or can be strategically placed for shade.

Excellent ventilation is crucial for equine respiratory health, and you can use ridge and eave vents, windows, and doors to keep your barn well-ventilated.

To optimize your barn's safety, plan to place exits within 50' of horses, with multiple doors in larger barns for emergencies. Paddock or Dutch doors to the rear of the stalls also serve as a secondary exit in the event of an emergency. Look for non-slip flooring, like rubber pavers or rubber matting over a base of concrete, cement, packed dirt, or gravel.

HELPFUL HINT

Once your barn is constructed, fans can be added for additional airflow, which is helpful for condensation prevention and fresh air circulation.



▲ Fans for Ventilation



Stall Yokes - Standard and for Minis ▲

HELPFUL HINT

Creative design details for your barn doors could include adding crossbucks or partial crossbucks, including windows to the top, or attaching a screen or yoke to Dutch doors.



◀ *Dutch Doors with Crossbucks*

■ BARN AND AISLE DOORS

Your barn and aisle doors are an integral part of your facility, and their design should balance durability and aesthetics. These doors leave a lasting visual impression, so they're a great place to make an aesthetic statement, but they must also be practical for day-to-day use and safe in case of emergencies.

Barn doors can be designed on sliders or hinges, depending on your facility's layout and your preferences. Sliding doors are practical and space-efficient, while hinged doors give an elegant and traditional feel to your barn.

You could also consider incorporating Dutch doors into your barn design. While solid doors offer increased privacy and insulation, Dutch doors give you an additional avenue to access your horses, add light, help regulate airflow and temperature within the barn, and provide a secondary escape route in case of emergencies.

Whatever design you choose, high-quality hardware and materials are essential to ensure your barn and aisle doors stand the test of time, hold up to heavy use, and remain easy to open and close for years to come.

■ **HOUSING FOR HUMANS: ADDING A LOFT, APARTMENT, BARNDOMINUM OR LIVING QUARTERS**

Incorporating a loft, living quarters, barn apartment, or barndominium into your new barn is a great way to house staff, provide a unique space for guests, or even create rental income. Be sure to check with your local authorities on the requirements for integrating living space within your barn, as zoning laws, construction guidelines, and rental regulations can impact your planning.

Choosing the right location for your loft or living quarters is key to creating a livable and enjoyable space. Consider whether you'd like your barn apartment on the ground level for easy access or on an upper floor for privacy, and if a separate entrance is suitable. You'll also want to ensure the space receives plenty of sunlight and good air circulation and isn't exposed to excessive noise or fumes from animals or equipment.

Proper insulation, wiring, and plumbing are also essential for a comfortable home. Placing your living quarters in an easy-to-insulate part of the barn, close to electrical sources, and near existing plumbing will reduce your costs and simplify construction.





■ **ADDITIONAL DETAILS & FEATURES**

Your facility's function and purpose will dictate additional design features as you finalize your barn's layout – a bustling show barn will have different needs than a private breeding facility.

In busy barns, separate grooming bays and wash stalls can streamline grooming, bathing and clipping and help to keep aisleways clear. A closed-off tack room is useful for organization and cleanliness: consider climate control for leather maintenance, individual storage areas for boarders, and a space to clean tack.

Larger barns catering to boarders or lesson programs might benefit from rider lounges or common areas, offering spaces for relaxation and community. A laundry facility with washers and dryer in a designated room or shared space eases the burden of washing horse-related items, and can also include storage for items like blankets and saddle pads.

STALL DESIGN

When designing your stalls, let the intended use of your barn be your guiding principle. Whether it's for private use, boarding, training, breeding, or events, your stall design should align with the purpose of your facility.



Key Considerations

- Match stall size to horse breed and your barn's purpose.
- Ensure safety with spacious designs, sturdy materials, and safe grill or mesh spacings.
- Choose sliding or hinged stall doors based on barn layout and traffic flow, prioritizing ease of operation.
- Opt for partitions that suit your barn's privacy and ventilation needs.
- Select yoke designs considering safety, socialization, and workflow needs.



▲ Hinged Stalls, Metal Barn



▲ Partition with Privacy and Grill Work

HELPFUL HINT

If you plan to include bars, mesh or grill work in your stalls, ensure the maximum distance between bars in grill work is kept to 2" or 1.5" and mesh is 2"x2" square to prevent trapped hooves.

■ STALL SIZE & SAFETY

Consider the size of your horses and the use of the stalls to determine their dimensions. For smaller breeds and ponies, 10x10 stalls can be adequate, while the ideal size for most horses is 12' by 12'. Larger breeds may benefit from stalls measuring 12' by 14' or even 14' by 14'. For layup or foaling stalls, a thoughtful addition is a hinged partition, allowing flexible stall configuration.

Safety is a key factor in stall design: stall door openings should be at least 4' wide, and stalls must be roomy enough to keep horses from getting cast. Design your stalls with premium materials and workmanship in mind: look for high-strength galvanized steel and construction with no sharp edges.



◀ Window with Mesh Guard

HELPFUL HINT

■ STALL DOOR DESIGN

The big question: sliding doors, or hinged?

Sliding stall doors are functional and elegant, and an ideal choice for barns with narrow aisles or busy walkways. Many sliding doors can be partially opened and secured, making daily chores easier. A high-quality track and roller system is essential when considering sliding doors – Sterling Equine’s sliding doors include a self-cleaning track, so doors open and close with ease and without maintenance.

Hinged doors provide a timeless and airy feel, drawing inspiration from European designs. As they open into the aisle, they’re suited for barns with wider aisles or lower traffic. Look for hinged doors that open 180° to lay flush with the stall front. A common problem with hinged doors is that they sag over time, which is a result of low-quality hinges unsuited to the weight and use of the door. Plan for high-quality hardware like Sterling’s heavy-duty door hinges, which are engineered for the job, adjustable, and serviceable.

One frequent annoyance with sliding stall doors is that debris build-up and bedding around door stops and guides prevent the doors from closing all the way, and they can have sharp edges. Sterling’s stops and guides are designed to prevent build-up and have no sharp edges or corners, so you easily can slide doors all the way closed.

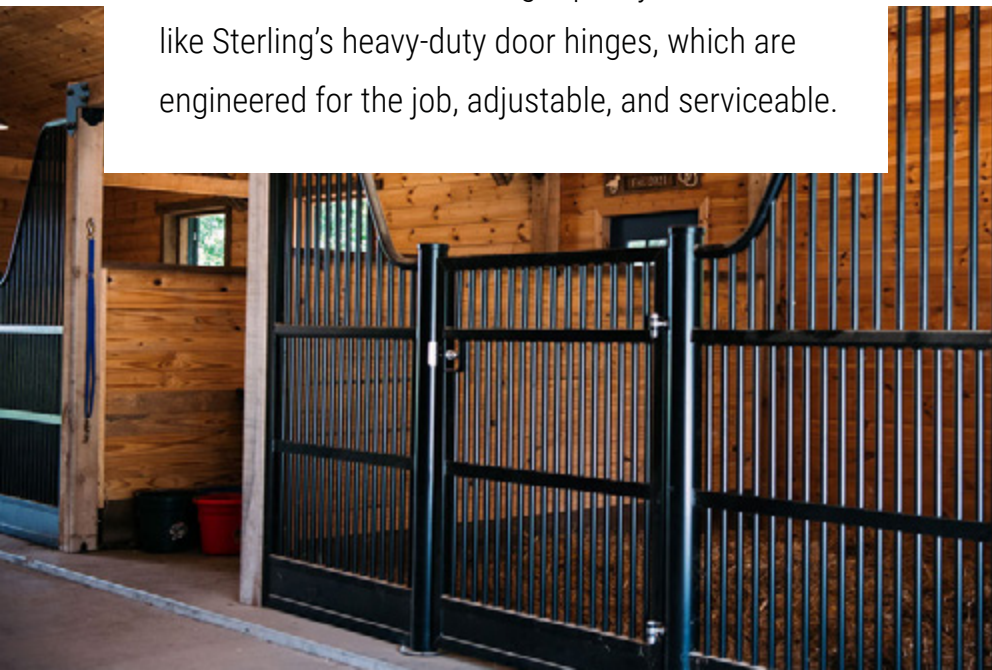


▲ Sliding Stall Door

▼ Hinged Stall Door with Adjustable Hinges



◀ Hinged Stall Doors, European, Ventilation

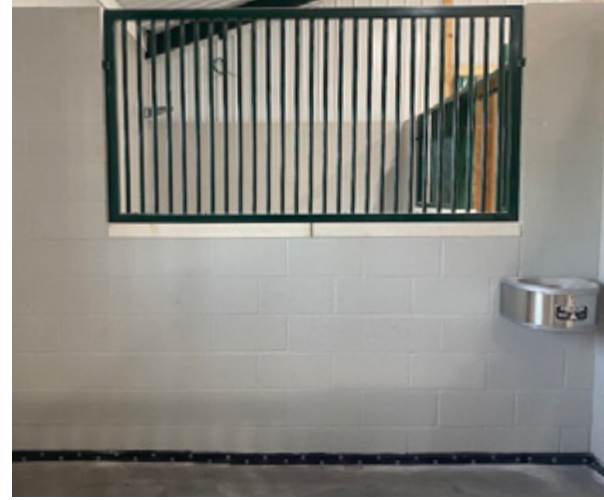


■ STALL PARTITION DESIGN

Partitions are the crucial elements that divide your stalls. They can be stationary or hinged and offer varying levels of privacy, socialization, and ventilation depending on your needs.

Solid panel partitions provide maximum privacy and are ideal for boarding barns, quarantine stalls, and stud facilities. Partial grill or mesh top partitions balance ventilation and privacy, and are suitable for boarding and training facilities.

Grill top partitions allow for more socialization between animals and are a good choice for personal facilities, smaller facilities, or training facilities. Full grill or full mesh panel partitions offer maximum ventilation and socialization, suitable for smaller and personal facilities.



Partition Mesh Panel ▼



▼ Full Grill Partition



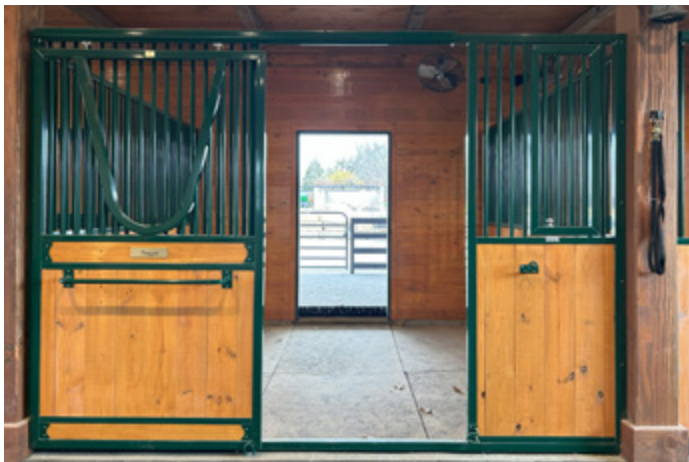


◀ *Window Yoke*

▼ *Side Hinged Yoke*



▼ *Sliding Stall Doors with Yoke*



■ **STALL YOKE DESIGN**

Stall yokes make a big impact on the daily functioning and aesthetic appearance of your barn, and the best choice for you depends on your own preferences, the use of your barn, and your horses' needs.

In situations where safety is a priority, such as in boarding facilities with temperamental horses or in vet hospitals and quarantine facilities, stall fronts without yokes are a common choice.

Lift-out yokes provide the flexibility to open or close the stall space, allowing a balance between privacy and socialization depending on the needs of your barn and horses. In barns where yokes will be frequently opened and closed, hinged yokes are the best choice, letting facility staff easily adjust the yokes throughout the day or week.

For environments where horses enjoy lots of socialization and are well-acquainted, always-open yokes are an excellent option.

SELECTING THE BEST STALL FLOORING AND WOOD FILL FOR YOUR HORSE BARN

When it comes to barn construction, selecting the right flooring and wood fill materials is vital to ensure safety, comfort, and functionality for your equine companions. Explore the various options available for both flooring and wood fill and our tips for how to determine which best suits your needs.

Key Considerations

- For wood fill, Southern Yellow Pine is economical; Brazilian Hardwood is strong and visually appealing, while HDPE plastic lumber offers durability and low maintenance.
- Choose flooring based on safety, durability, and ease of cleaning. Proper base preparation is essential.
- Rubber pavers provide a non-slip surface and enhance barn aesthetics, while interlocking rubber stall mats are practical and cost-effective.
- Stall mattresses offer comfort and health benefits, and PermaGrid suits high-traffic, muddy areas.

■ WOOD FILL MATERIAL

The fill material you choose for your stalls and barn have budget, safety, and aesthetic implications. One popular choice offered by Sterling Equine is Southern Yellow Pine, a robust and cost-effective wood.

Another option is Brazilian Hardwood, which is both beautiful and functional. Resistant to rot and decay, it's also a very dense wood, which deters horses from chewing it. Brazilian hardwood is

▼ *Hinged stall doors and Brazilian Hardwood*



▼ *High-Density Polyethylene Plastic Lumber*



comparable in strength and durability to IPA but without the risk of splintering—a chew and kick-proof alternative.

HDPE (High-Density Polyethylene) plastic lumber is a modern, durable choice with a long life cycle and low maintenance needs. HDPE plastic lumber does not deteriorate, crack, rot, is impervious to mold and mildew, and can be easily cleaned with a power washer.

HELPFUL HINT

Southern Yellow Pine can be stained to the color of your choice, or left natural.



▲ *Southern Yellow Pine*

HELPFUL HINT

It's key to create a level, well-draining base of concrete, cement, gravel, or packed dirt to install your flooring on. A well-designed base will enhance the longevity of your floors and create a safer, healthier environment for your horses.



■ STALL FLOORING OPTIONS

Your horses (and you!) stand on your barn floors all day, so choosing the right flooring is a major decision. Safety, durability, traction, and ease of cleaning should all be taken into account as you weigh your options.

A leading flooring choice is rubber pavers, which are safe and non-slip even when wet and give your barn a polished, elegant appearance. Sterling offers two thickness options for stall pavers, catering to different installation needs. The 40mm product is designed for application over a well-draining, compacted base material, while the 20mm variant is suited for application on existing concrete and requires gluing down.

Interlocking rubber stall mats are another popular option for stalls, wash bays, walkways and more, and are cost-effective and easy to install. Sterling Equine's stall mats are 100% American-made and long-lasting, available in varied sizes including 10'x10', 12'x10', 12'x12', and custom sizes.



▲ Rubber Pavers



▲ Stall Mattress

The popularity of stall mattresses is on the rise, as they offer unparalleled comfort to horses, can aid in injury rehabilitation, and promote flexibility in equine joints. Sterling Equine has partnered with StableComfort™ to offer their innovative, wall-to-wall waterproof stall mat system to our customers. Formulated to simulate natural turf, StableComfort™ is also ergonomic, efficient, environmentally friendly, and can save you costs in bedding.

PermaGrid is another flooring option to consider, particularly in regions that deal with mud or for high-traffic areas on your property. Formulated to support hooves and withstand heavy equipment, Permagrid is resistant to frost and UV, features a clever connection system to ensure stability, and is completely recyclable.



HELPFUL HINT

Permagrid isn't just for stalls and barn interiors: it's also a popular choice for paddocks, arenas, exercise runs, and outdoor feeding areas.



▲ Permagrid

CONCLUSION

Every barn is unique, and tailoring your choices to your specific needs, local considerations, budget constraints, and design preferences will ensure the successful realization of your dream barn.

We hope this guide serves as a valuable companion in bringing your barn to life, and encourage you to reach out to the Sterling Equine team with any questions. Happy building!



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