BARNS IN THE HIGHLAND COMMUNITIES
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BLANDFORD
BUCKLAND
CHARLEMONT
CHESTER
CHESTERFIELD
COLRAIN
CONWAY
CUMMINGTON
FLORIDA

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NEW MARLBOROUGH
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WILLIAMSBURG
WINDSOR
WORTHINGTON
Yet, barns continue to vanish from our landscape when they are no longer in active use, or when deferred maintenance over a long period of time makes their repair too costly. It is the aim of this guide to give an historical overview of the Highlands’ barns and to look at some that have been altered for new uses to keep them viable. It includes a section for further reading and information on barn preservation, for there is a concentration of skilled, technical help available in the Highlands region.

Historically, the cost of constructing a barn was always one of the largest investments a farmer would make. A barn used valuable timber resources and required the hiring of technically skilled framers to construct. It was economically important, therefore, for farmers to adapt their barns to changing agricultural practices, rather than to replace them. This meant that barns were sometimes moved, or perhaps taken down to reuse their timbers. They were added to and patched, raised up on new foundations, re-sided, and opened up with windows and ventilators. A good timber framer skilled in reading the history of a barn from its structural system, joinery, saw marks, and nails can straighten out these scrambled histories, but our objective is to illustrate some straightforward examples and give readers an opportunity to recognize the basic barn types from the exterior. Their variety is striking.

The landscape and architectural heritage of the Highlands region of western Massachusetts would not be complete without its barns. At the beginning of the 21st century, the Highlands are fortunate to contain an abundance and rich variety of barns that span several centuries and reflect how important agriculture has been to the region. Ask any resident if there are any “good barns” in town, and you’ll likely get several quick responses. This bounty may be attributed to regional economics and to the persistence of agriculture, but it must also be attributed to the care and attention that residents of the Highlands direct to their barns.
ENGLISH BARN 1750–1850

Just as they followed familiar English building practices for their homes, settlers in western Massachusetts built their barns as they had known them in England. These early barns were constructed using dimensions derived from the Pythagorean theorem, which optimized their strength, and they were constructed using sophisticated mortise and tenon joints that were individually scribed, or marked and cut, to fit each timber. The technical excellence of English barns combined with plentiful strong timber meant that there are still examples of them to be found in our region’s towns, though variations on the form were built into the 20th century.

An English barn is set on flat land and is rectangular in plan beneath a gable roof. It measures most often about 30 feet by 40 feet and has its main entry on the long side which faces north. There is a second entry on the south side, which may be a pedestrian door or larger. Typically, there were no windows until about 1800 when a transom light may have been included above the main doors, as well as a few wall windows. Until then, air circulated through narrow gaps between the siding boards.

The interior of the English barn is divided into three bays. A center bay was for threshing grain, and by opening the doors on north and south, a breeze blew away chaff during the winnowing. The center bay was the only one that had floor framing, which was tightly laid so no grain would be lost; the bays at each side of the threshing floor had dirt floors. Notice that the center bay is not in the actual center of the building. The two bays at each side were of unequal size. The smaller east bay of the English barn was devoted to cattle, where they could get the morning sun, and the west bay was made larger to accommodate a hay mow, or loft framed into the overhead beams and used for storage. Horses and oxen were sometimes kept in this bay on the south side where they would also get more hours of sunlight. Above the center bay was a second mow where grain could be placed to dry on poles or boards that were loosely laid between tie beams and out of the reach of mice.

Cows typically entered the barn through the corner door where their wooden stanchions, or tethering stalls, were aligned to face the threshing floor. Rather than having a transom light constructed specifically for the width of the barn doors, this Goshen English barn had residential windows inserted above its doors. The roof cupola was a later addition, as well.

The easier-to-operate, sliding track doors appeared after 1850, replacing original double-leaf, strap-hinged doors that would have typically been framed using mortise and tenon construction.
EXTENDED ENGLISH BARNS 1830–1870

After the Revolution, farming improved, then prospered, and many farmers needed more space for larger herds, more hay and equipment. The most practical solution was to extend English barns with additional bays at one or more sides. Occasionally, these extended barns can be identified by their orientation, placement on flat land and the location of their doors, though it is only with inspection of the framing that their 18th or early 19th century construction date is confirmed.

The Sandisfield English barn depicts the south side of one of the Highlands region’s earliest English barns; the extension is on the right or east beginning at the cross-braced door, which doubled the barn size. The cupola was a 20th century decorative, rather than functional, addition. Note the clipped gable end eaves, which were common during the second half of the 18th century.

In 1794, the Cummington English barn was built across the road from its present location. It was later moved, and a fourth bay added on the right, to accommodate larger cow herds and provide more mow space. Despite its rough exterior, the frame of this 18th century barn remains sturdy. While claims of chestnut frames are frequently made, barns like these were made of the wood that was at hand, and at the Highlands’ elevation and northern latitude, one more often finds beech, hemlock, sugar maple, and yellow birch.

NEW ENGLAND OR GABLE-FRONT BARNS 1830–PRESENT

Extended and reconfigured English barns were impractical and inefficient for farmers with large herds who couldn’t drive the length of their barns to unload hay, and had to keep their cows in multiple stanchion spaces. By framing the barn in a longitudinal fashion with doors at each gable end, the barn became a labor-saving building to which any number of additional bays could be added, if necessary. Although they appeared as early as 1830, the newly configured barn, the New England barn, was popular in the Highlands region by about 1850. As with the English barn, the center bay was often off-center. Typically about 40’ wide, the west bay was 16’ wide, and the center and east bays were narrower at 12’ each. The wider west bay was devoted to the hay mow and storage, the east to livestock. The small corner door at the left was for their livestock and farmer use.

In the Highlands there were builders who specialized in barn construction. This Buckland barn was owned and presumably built by the Griswold family of barn builders who later built the barn on Norman Road in Buckland (see page 16). The barn served as a dairy barn with a short turn at tobacco storage, at which time, windows were inserted for ventilation.
RECONFIGURED ENGLISH BARN

If English barns weren’t extended by adding bays to one side or another, they were often moved and conjoined by farmers eager for additional space. By the 1870s, advances in threshing equipment made the threshing floor orientation obsolete, so when New England barns appeared, many farmers converted their English barns to the new form by turning them and inserting new doors in the gable ends.

This English barn in Heath was moved, a new entrance made in its gable end, and lean-to additions made on the west and south sides around 1870. The milk house addition on the right was made at the same time. Again, it takes inspection of the interior to ferret out the history of a barn like this. Door frames were often painted white, as they were here, to be more visible at night.

Ventilation

Farming journals from the middle of the 19th century disseminated the latest thinking among farmers. From the 1850s, articles began to appear describing how dairy herds were found to consume less food during the winter if they were kept warmer, so farmers began to seal the gaps between barn boards that previously had been left for air exchange. Cows ate less, but they also got sick more often, and all the moisture they generated was causing barns to deteriorate. The solution journals promoted was to provide ventilation through ventilators or cupolas placed on the barn roof. Sometimes air shafts were also built to help direct the air flow up and out from the lower stories of the barn. Ventilators were fairly passive in moving air, so when metal ventilator stacks with air-driven fans were developed in the 1920s, farmers were quick to adapt them. We see both versions today in the Highlands.
SIDE-HILL BARNs 1850–1900

By the 1850s, farmers had adopted some important new practices that made their work more profitable and efficient, and brought about changes in their barns. One of these practices was collecting manure for spreading on fields in the spring. Collection was made less tedious when farmers began building or moving their barns to a slope, so that a basement level, open on one side, was created.

The side-hill barn allowed the farmer to toss manure to the lower level where it was stored and moved once, directly into the fields. It didn’t take long for farmers to realize that if the stables were moved to the lower level, animals could walk directly out into a yard, and their food could be dropped from above, thus shortening the time-consuming process of feeding large herds. Both uses of the lower level of the side-hill barn (for manure and for livestock) were practiced in the Highlands region, but farming journals at the time cautioned that the latter practice was problematic for animals that needed more light and air in winter months.

This English side-hill barn in the town of Heath still orients the threshing bay in a north-south direction, but it was pulled south a few yards from a level site to a slope, ca. 1850, to create a walk-out basement on the south.

As the popularity of the New England barn coincided with that of the side-hill or bank barn, many were constructed in the region. This Ashfield barn, viewed from the exposed rear, is a typical example. Whitewash on the interior of the basement level indicates livestock was kept there, rather than being used for manure collection, while hay was driven into the upper floor and stored. Situated at the corner of two roads, the barn opens out to a large sunny field for a protected barnyard. One of the vulnerabilities of side-hill barns is their foundation, which has a tendency to lean and eventually collapse on the exposed sides, if not reinforced.

While 18th and early 19th century English barns were built at a distance from their farmhouse, by the 1850s farming journals were advocating that barns be built close to the house and even connected to concentrate activity. If well-placed, the barns would also act as windbreaks for the house. Connected barns do appear, but more commonly farmers in the Highlands built their barns at right angles to their houses to create protected yards. This pair of Tyringham barns are set close to a house, forming a terraced yard.

Many of our most picturesque barns were constructed after 1850 when farmers began to apply architectural styles to their barns, occasionally reflecting those of their houses. This fine Italianate style barn in Plainfield, with its wide boxed eaves and pyramidal cupola, is trimmed with a wide frieze and rake boards, and has picturesque board and batten siding.
HIGH-DRIVE, SIDE-HILL BARNs 1850–1950

Side-hill or bank barns could be several stories high and to make the most of their height, builders constructed high drives into the upper story’s gable end, so that hay and grain could be pitched to several floors of livestock below.

In this Williamsburg barn, the drive is above the level of the eaves. The barn’s gambrel roof was an innovation picked up at the turn-of-the-19th century by farmers, as it provided more space for hay storage and an unfettered run along the interior of the roof ridge on which hay rakes could be mounted. Balloon framing, as opposed to post and beam framing, made all the structural members lighter in weight and in standard sizes, so volumes could be expanded—as with a gambrel roof—and additions made more easily.

More modest high drives were created on level land. Depending on the site and preferences of the farmer, the high drive could be attached to an English barn or to a New England barn, like these in Chesterfield, Colrain, and South Worthington.
Covered High-Drive Dairy Barns 1880–1920

By enclosing the high drive, farmers offered their teams and loaded wagons protection from the weather, especially when working high above ground level.

There are few barns that could rival this Buckland covered high-drive dairy barn’s splendid placement in the landscape. Horse teams backed their loads across the drive and into the uppermost floor level, a full length drive floor, at each side of which hay was stored. From this level, hay was then dropped to the second level, where the milking parlour was located. Cows and people entered the milking parlour from ground level entries on the east and north beneath the drive. Manure was dropped to the first level and removed through doors on the south. Certainly, nowhere was gravity put to use with more economy. The barn was built by the Griswold family, the Buckland barn builders noted previously.

Monitor-Roofed Barns 1890–1920

Monitor-roofed barns are rare in the Highlands region. They were a response to the need to increase bacteria-killing light and air circulation within a barn for the health of animals, particularly during the winter months. Monitor roofs could be built with ventilation shafts from ground level to the monitor openings, where air was continually exchanged.

A fine example is this New England barn in Williamsburg with a narrow central bay that rises above lean-to side aisles to create a monitor row of openings. The north side of the barn was set on a slight slope, so it is also a side-hill barn.
LATE-NINETEENTH CENTURY EAVES-FRONT, SIDE-HILL BARNs 1870–1910

By the third quarter of the 19th century, the English barn was revived for specialized use as a horse and carriage barn, or a small cow barn in residential areas. Termed “eaves-front” to distinguish them from earlier English barns, they may be seen today in many town centers of the Highlands region, reflecting the period’s prosperity and dependence on horse-drawn carriages for transportation. An eaves-front barn set at the edge of the road allowed easier maneuvering of the carriage and stabling of the horses, and was often attached to the house.

This Blandford barn housed a single cow and an Oldsmobile in the 1950s, but its proximity to a pasture at the rear and a road in front made it ideal for use as a carriage barn in the late 1800s.

GROUND-LEVEL STABLE BARNs 1890–1960

From the late 19th century, barn complexes were either built new, or they evolved as additions were made to earlier barns to accommodate large dairy herds. Improved technology to feed, milk and keep herds clean meant that the most efficient layout for barns was once again on flat land, hence the ground-level stable barn where herds were housed and milked all on one level. With gutters for manure and a raised center aisle for distribution of hay and grain, the barn’s concrete floors could be kept far more sanitary than wood floors.

With its attached milk house, one of the most impressive of these barns is in Cummington. Its linearity and regularity suggest the efficiency of an assembly line.

Ground-level stable barns were often added to existing side-hill barns to create a complex with direct access to various levels of the interiors, as the set of barns in Chesterfield on page 20 illustrates.

Placement of ground-level stable barns at right angles to each other created shelter, saved space, and shortened walking distances for farmers managing large herds, as seen with this complex in Shelburne.

As these last two barn complexes illustrate, many barns had additions made to accommodate new processes that farmers took on. One of the best examples
of these additive barn compositions is The Trustees of Reservations William Cullen Bryant barn in Cummington. The New England section of the barn was constructed in the 1840s using timbers from an earlier barn, the right wing was added in the 1860s, and the left wing built in the late 1890s.

**Ground-Level, Stable Barn**
Bryant Road
Chesterfield
ca. 1910

**Ground-Level, Stable Barn**
Main Road
Shelburne
c. 1880–1900

**Side-Hill, New England Barn Complex**
Bryant Road
Cummington
c. 1840–1900

Changes to Barns for Health

*19th century to the present*

The Morrill Act of 1852 brought land grant colleges with agricultural programs to the states, and the programs in turn brought systematic scientific inquiry to agriculture for the benefit of farmers. The spread of disease - in particular the spread of tuberculosis among livestock - was studied and higher standards of sanitation were developed to control the TB bacteria. Among the improvements in sanitation that had an effect on barns was the use of concrete floors which could be better cleaned than wood floors. Another such improvement was the control of air-borne tuberculosis bacteria by keeping air flowing and exposing the bacteria to light. A single floor barn, such as a ground-level stable barn, expedites air flow, which no longer circulates through upper stories. Instead, it is drafted through ventilators and rows of windows, which also bring light into the space. This Cummington barn with its long side facing the sun, is under construction, yet it exemplifies some of the more important changes that science has brought to barn construction.
LATE-TWENTIETH CENTURY AND CONTEMPORARY DAIRY BARNS
1970—PRESENT

Contemporary livestock barns mostly continue the ground-level stable layout, but use new materials as this corrugated metal example in West Chesterfield. Avoiding some of the maintenance associated with wood barns, the metal barn with metal truss roof has become popular in the Highlands as both a dairy cow barn and horse stable. It is more quickly and easily constructed, so is less expensive.

In concluding this chronological look at barn construction, it is ironic but appropriate to end where we began, since post and beam barns constructed by timber framers continue to appear from time to time in our landscape. They are preferred by many for the beauty of their construction techniques, their longevity and historical character.

While many of them are sensibly constructed with contemporary equipment and 19th century square rule joinery, this newly finished barn in Windsor was constructed using the scribe rule system and technology of the 17th and 18th centuries. Note the sequencing of vertical timbers from the same tree, and characteristic proportions of the English barn.
BARNs IN THE HIGHLAND COMMUNITIES

REUSED BARNs

The greatest challenge to barn preservation is not keeping a barn’s roof intact; rather, it is keeping it intact over an economically viable use. As agricultural activity decreases, new uses need to be found for barns, uses that will support costs of maintenance and the occasional major repair. In the Highlands there are numerous reuse examples. Some required radical changes to the barns themselves and to their owners’ lives. Other reuses are more subtle, so the barns remain unchanged, but produce little to no revenue. Solutions for the non-farming barn owner are scarce, but they can be found nonetheless. The perfect set of solutions for preserving barns through reuse awaits discovery, but the following examples may spark readers’ imaginations.

To begin with the most passive reuses, one could start in Shelburne where a barn complex serves as communal family storage—all the outgrown bicycles, skis, and storm windows—but also contains an indoor basketball hoop for recreation, and serves most felicitously, as a place for summer family weddings. Cost-saving rather than income-producing, it is a series of uses that help maintain the value of a barn complex to the group of families who own it in common, and who have preserved its integrity.

Ground-Level Stable Barn
Patten Road
Shelburne
ca. 1890

Interior, New England Barn
Main Road
Tyngingham
1891

Side-Hill Barn
South Sandisfield Road
New Marlborough
1880s

Eaves-Front Barn
Main Road
Tyngingham
1900s
At one side of the Tyringham river valley, an 1891 barn produces income by being rented for weddings and parties. With the most minimal changes to its interior—a bar set up in a stable area, decorative lighting overhead and carriages discreetly on display—the barn is part of a strategy to keep this farm intact as a special event destination within a pastoral landscape.

Barns as antique stores, restaurants and homes are the most common reuses across the country. The Highlands have several examples of residential conversions at both small and grand scales.

These two examples retain the character of the original barns including, in one case, an attached silo. The Tyringham barn, now owned by The Trustees of Reservations, was converted from barn to music studio.

Stepping beyond the reuses that may accommodate an adjacent farmhouse, for instance, or fit within a residential setting, we find barns put to cultural uses in the Highlands. One of the most prominent examples is Jacob’s Pillow Dance Festival in Becket.

A gift shop, on the left, and dance studio, on the right, are uses for two of the barns of the original farmhouse that Ted Shawn bought for his men’s dance company in Becket, which is now a National Historic Landmark.
As shown on page 27, an English barn in Ashfield was converted successfully to the Double Edge Theater.

Small barns can make efficient office space for a business such as this landscape architecture firm in Ashfield where the open space of the hay mow is conducive to the work at hand (also on page 27).

Certainly one of the most elegant reuses is the hotel and spa in the two barns in New Marlborough, where the virtually unchanged exteriors maintain the rural character of the farmstead but contain highly sophisticated facilities.

Making new uses of both its agricultural landscape and former barn is an Ashfield golf course whose clubhouse is in this gambrel-roofed, side-hill barn.

Barns of all styles and uses are treasured features of the Highlands landscape and culture, serving as invaluable reminders of our agrarian past and the great effort and ingenuity required for their owners to make a living from the land. Preserving these barns’ significant architectural features and respecting their original construction styles, while finding new uses for them, is indeed a challenge. The barns themselves stand as an inspiration to us to take creative and resourceful action on their behalf.
ACKNOWLEDGEMENTS

This booklet is, in part, a product of an earlier project funded by the Highland Communities Initiative, which studied the physical condition and history of ten barns selected from Highland towns. Several of those barns are included here, and I would like to thank HCI for the opportunity to translate that experience into this text. I want also to thank the three timber framers whose experience with historic barns, patiently conveyed to me, formed the base of much of my understanding of barn history: Jack Sobon, David Bowman, and Alicia Hammarlund. Jack Sobon’s ability to interpret and teach construction history deserves special recognition.

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THE HIGHLAND COMMUNITIES INITIATIVE

A program of The Trustees of Reservations, the Highland Communities Initiative is a group of neighbors and volunteers working to enhance the quality of life and rural character of our communities. HCI connects people and provides them with the information and support they need to preserve the special natural and cultural landscapes of the Highlands region.

www.highlandcommunities.org

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