



Birchwood
Archaeological Services

The Shafer Farm Dutch Barn Complex History *Warnerville, New York*

by
Anna Blinn Cole

Excerpted from:

2009 David Moyer, Anna Blinn Cole and Rebecca Moyer
Phase IA/IB Cultural Resources Survey, Maranatha Family Center, Town of Richmondville, Schoharie County, NY. Prepared by Birchwood Archaeological Services for Stella McKenna. On File, New York State Office of Parks, Recreation and Historic Preservation, Waterford New York.

Shafer Farm Dutch Barn Complex

A complex of four barns is located on the historic Shafer Farm on the outskirts of Warnerville, NY. These barns were documented with photographs and minimal framing sketches. A short verbal description of their historical character and evolution follows. The study was conducted as per the request of the Office of Parks and Recreation and Historic Preservation. The survey was completed by Anna Blinn Cole, David Moyer and Michael Reynolds on December 1, 2009.

Providing an exact date of construction and supplying a builder's name is usually difficult with agricultural buildings. These types of buildings offer minimal clues of their construction date and often escape the documentary record. The barns at the Shafer Farm are no exception. While some diagnostic traits were noted in the buildings, their dates of construction can only be approximated in keeping with technology time frames, settlement patterns and agricultural trends.

The Dutch barn complex at the Shafer Farm contains four barns (Photos 1-52). Central to the complex is a four-bay New World Dutch Barn (Pages F35 and F36; Photos 1 and 2). The barn fits into standard New York Dutch barn typology with a nearly square (44 x 41 ft) footprint and a gable-front entry. The interior plan features a central nave with two side aisles. The barn was originally accessed via two central wagon doors on the barn's southern, front façade. Two human-sized doors entered into each of the side aisles on that same façade. The easternmost of these doors has been downsized and modernized while the central wagon doors have been replaced with a garage door in a downsized opening. No evidence remains to suggest that there were also wagon doors on the northern, opposite façade of the barn. Dutch barns in Schoharie County typically only had wagon doors on one façade (Fitchen 2001:iii). The barn has a moderately pitched roof indicative of Dutch barns constructed in the late 18th and early 19th centuries.

Interior framing in the Dutch barn consists of a four-bay H-bent truss system. The anchor beams are supported from beneath by upbraces extending from the H-bent column to the bottom of the anchor beam (Photos 9-11). The anchor beams span the central nave with a distance of 20 feet. A total of four H-bents (two end and two middle) within the barn are on roughly 13 foot centers. An upper transverse, tie beam extending parallel to the anchor beam originally joined into the top of only the third H-bent connecting the top of the columns at the level of a typical joist. This beam has been sawn off close to its joint on both posts (See page F36; Photo 11). Transverse side-aisle ties join into a longitudinal tie beam connecting the H-bents. One transverse side-aisle beam lines up with each H-bent, while two transverse beams intersect the longitudinal beam between H-bents (Photo 24). Rafters meet in an open mortise-and-tenon joint, fastened with a wooden peg. Rafters are notched over the top plate and continue uninterrupted to the roof plate. Pairs of longitudinal sway braces extend from the adjacent columns to the top plate between the bents (Photo 11). All original timbers within the barn's framing system are hand-hewn including posts, plates, girts, joists and rafters. Assembly of the barn followed the

scribe rule method as carpenter's marriage marks are visible on accessible joints (Photo 12). Most of the visible framing members appear to be original. The siding and roof boards, however, have been replaced. Some framing has been added in the 20th century to add additional support such as collar ties and lateral sway bracing (Photo 11).

In his introduction to the second edition landmark book, *New World Dutch Barns: the Evolution, Form and Structure of a Disappearing Icon* by John Fitchen, Gregory D. Huber separates Dutch barns into chronological categories based on their craftsmanship, framing, joinery, roof pitch and finish (Fitchen 2001: xlv-xlvii). Barns built before 1790, argues Huber, exhibit hewn timbers, angled scribe-rule joinery, a wide central nave (26-30 ft.), shorter side walls making a steeper roof pitch, and well-appointed craftsmanship. In the period of 1790-1815, Dutch barns began to display more of less of these traits as milling and joinery technology advanced. The Shafer Dutch barn falls into this later category. Its central nave is narrower at only 20 ft, some minor timbers like the longitudinal sway braces are milled, and the side walls are taller than older barns creating only a moderately-pitched roof (Page F35). However, scribe-rule joinery and good craftsmanship within the barn suggest some of the older traits of Dutch barns were carried over.

The rear, north facing façade of the Dutch barn opens into an English threshing barn addition, creating an overall T-shaped building (Page F35; Photos 6 and 7). A perpendicular English barn addition to the rear of a Dutch barn is a pattern uniquely found in the Schoharie Valley (Larson 1998; Zoch 2000). The English barn is rectangular in footprint and measures 53 x 20 ft, nearly doubling the footprint of the Dutch barn. An addition of this size would have intentionally been added to increase the volume capacity of the original barn. The English barn has a traditional interior arrangement with a central nave accessed by two wagon doors on the side-gabled, northern façade. A queen-post truss system supports the roof and rafters meet in an open joint. Two bays on either side of the central nave would have provided space for animal stalls or a haymow (Photo 16). Major timbers within the English barn are large, hand-hewn pieces. Studs, braces and rafters are vertical-sash sawn. Major joints are mortise-and-tenon and fastened with wooden pegs. The English barn addition appears to have been constructed using the square-rule method, not displaying any obvious marriage marks. Square-rule construction became wide-spread around 1820. In the 20th century, a concrete block chimney was added in the northeast part of the barn for an unknown purpose (Photo 17).

While the Dutch barn and its later addition were first constructed to hold animals and grain, agricultural trends in central New York shifted during the 19th century and dairying became the most profitable endeavor (McMurry 1995: 6-12). The Dutch/English barn at the Shafer Farm fell victim to this trend and was converted to dairying at some point in the mid- to late 19th century. While the English barn addition likely predates this conversion, the other two barns within the complex were likely built in conjunction with the switch to dairying. At some point in the late 19th century, perhaps concurrent with the construction of a third barn, the Dutch barn and its English barn appendage were given a facelift. The roof was replaced and eaves, which are not typical on Dutch barns, were

created. The barns were painted red and with white trim. Beginning in the mid-19th century, farmers began to give their agricultural buildings both unity and ornament. According to the *New England Farmer* in 1855, “The gables, doors and windows of the barn are frequently ornamented with pediments; and the eaves, or cornices, with wide handsome mouldings” (Visser 1997). While the barns in the Shafer Farm complex do not actually have handsome mouldings around their cornices (with the exception of the easternmost barn which will be discussed shortly), they do have a band of white paint that has been applied to give the appearance of a wide, decorative cornice band. From a distance it is not possible to tell a difference and only on closer inspection does the white paint on the horizontal weatherboarding become clear. When the fourth and final barn was built, it too, was given a coat of red paint with white trim.

Currently both the Dutch and English barns have been retrofitted for a heated workspace. Insulation board has been applied to the interior walls and a dropped ceiling has been built at the level of the anchor beam in the Dutch barn. The floor of the Dutch barn has been covered with poured concrete. The northwest corner of the English barn addition has signs of advanced deterioration. However, the rest of both structures is in good repair. Adaptations within both periods of the barn have converted the function of the buildings from agricultural to machine or shop-oriented with the installation of a heat source, insulation, duct work and electricity. Sheds have been erected against the barns during the 20th century providing additional work and storage space and serving to connect the Dutch barn and the adjacent barn to the east.

After the Dutch barn and its English barn addition had been built, a third barn was construction. This easternmost barn is also a gable front building being nearly two and a half times as long as it is wide (Photos 25 and 26). The exterior of the barn is clad in horizontal tongue-and-groove siding and was at one time painted red. Unlike other barns in the complex, a wide, white cornice board adds a note of stylization to the otherwise utilitarian design of the barn. This barn was likely the first building in the complex to be built with ornamental considerations and the Dutch/English barn was painted to mimic the cornice lines on this barn. Two vertical plank sliding doors allow entry on the front façade. Sliding doors such as these became increasingly popular in the late 19th century as farmers sought to reduce damage from winds when the doors were open (Noble and Cleek 1995: 54).

Timberframing within the easternmost barn is made of hand-hewn primary timbers (plate, joists, posts) and circular-sawn minor timbers (studs, rafters, braces) (Photos 35 and 36). Major joints are mortise-and-tenoned while joints with minor timbers are nailed with square-headed wire nails. Many of the major timbers appear to have been recycled from an earlier building as there are unrelated mortises throughout. The first floor has been partitioned into animal stalls with more recent lumber (Photos 28, 30 and 33). The floor throughout the southern first floor of the building consists of roughly squared planks measuring 2.5 x 6 inches sitting directly on the ground. Due to an uneven slope beneath the building, portions of the floor boards are supported by an uncoursed fieldstone foundation, particularly in the northern end of the building (Photo 27). The second story is unpartitioned and accessed via a reused house staircase (Photo 34). Portions of the

upper story are laid in board and batten plank flooring as to suggest grain or hay storage (Photo 36). Small exterior doors that access this upper story were likely used to put the grain or hay into place. Numerous 6/6 double hung sash windows that light both the first and second floors of the building were likely retrofitted into older door openings. Based on nail and timber evidence, the barn was likely constructed in the fourth quarter of the 19th century and was probably originally used dairying activities (based on white-washed walls in portions of the first floor) and grain storage (based on the battened loft). While the barn's structure has not been compromised and retains integrity, the barn has been most recently converted into horse stabling.

The westernmost barn exhibits a gable-front elevation completing the complex of gable-fronted barns. With a similarly sized front elevation as the stable, this barn is even longer being almost three times as long as it is wide (Photos 39-41). While major timbers within the barn are hand hewn (girts, plates, posts), minor timbers are circular sawn. In keeping with the other barns in the complex, the exterior is clad in tongue-and-groove siding and painted red with a faux white "cornice." A human-sized door provides the only access to the interior from the front façade. Other fenestration includes a sliding door and a larger door-less opening on the eastern elevation (Photo 42). Small hay loft doors occur throughout the upper story. Some of these doors have been converted to windows. The first story floor is poured concrete with a trough extending through the barn following the ridgeline. This area was used for feeding cattle (Photo 43). Mangers or hay troughs would have occurred along the long walls of this area, but no longer exist. A small stabling area has been created with more recent lumber in the middle section of the barn where the sliding door provides exterior access (Photo 46). The rear portion of the building is open on its eastern side and was used as vehicle storage (Photo 51).

This barn was the most recently-built barn in the complex at the Shafer Farm. Barns such as this with purpose-built cow housing on the first floor at grade and a hay loft in an upper story are referred to as ground-level stable barns. Constructed as early as the late 19th century, ground-level stable barns are typically floored with poured concrete with some kind of manure extraction accommodation. Wood floors were largely abandoned for facilities that housed cows by the turn of the 19th century because concrete floors were seen as much easier to clean and considered to be more sanitary (Visser 1997:98). The Shafer ground-level stable barn exhibits such a floor with a manure trough running longitudinally along the ridge line (Photo 43). In addition, the first floor interior walls show evidence that they were once completely double boarded (Photo 44). Double-boarding provided a second layer of sheathing to the interior of stabling barns in order to provide an extra degree of warmth for the cows.

A second story hay loft remains in the rear portion of the barn and likely extended throughout, as was typical of ground-level cow stables (Photo 48). Small second-story openings would have been used to lift hay into the loft (Photo 45). Around 1920, barns of this purpose began to be erected with pole construction and with a gambrel roof so that the hay loft could hold a greater volume. In addition, gambrel roofs used a truss system for their roof construction that did not require a tie beam. Tie beams such as were

necessary in post-and-beam structures like the cow stable at the Shafer Farm restricted movement in the upper story hay loft (Visser 1997: 97-100) (Photo 46). Based on the time-frame for ground-level stable barns and the decreasing popularity of post-and-beam construction in the second quarter of the 20th century, this barn was likely constructed within the first quarter of the 20th century.

Together these four barns reflect an agricultural complex that served to meet the needs of a large dairy farm. As a stand alone structure, the appended Dutch barn represents an architectural expression of adaptation and innovation isolated to a small region. “T-bone” additions such as this are an anomaly to Dutch barn construction isolated to the Schoharie Valley region. While the Dutch barn is itself a rare survival in Schoharie County, its role through time in the expansion and evolution of the Shafer Farm lends itself to a wider realm of significance. The two smaller barn buildings are in good condition. The Dutch barn has some structural issues on its northern gabled end where the sill and end girt have been removed (Photo 23). The English barn addition suffers from isolated water damage due to a missing section of roof in its northwestern corner (Photo 16). The buildings are otherwise in fair condition (Photo 7, 8 and 52).

References Cited

Fitchen, John

- 2001 *New World Dutch Barns: the Evolution, Form and Structure of a Disappearing Icon*, edited and with new material by Gregory D. Huber, Second Edition, Syracuse, NY: Syracuse University Press.

Larson, Neil

- 1998 "Agrarian Changes: Learning from Barn Additions," in *Dutch Barn Preservation Society Newsletter*, Fall 1998 Vol.1, no.2.

McMurry, Sally

- 1995 *Transforming Rural Life: Dairying Families and Agricultural Change, 1820-1885*, Baltimore, MD: Johns Hopkins Press.

Noble, Allen G. and Richard K. Cleek

- 1995 *The Old Barn Book*, New Brunswick, NJ: Rutgers University Press.

Visser, Thomas Durant

- 1997 *Field Guide to New England barns and Farm Buildings*, Hanover, NH: University Press of New England.

Zoch, Harold

- 2000 "Dutch Barn Observations," in *Dutch Barn Preservation Society Newsletter*, Spring 2000 Vol.13, no.1.

Photos



Photo 1. View of Shafer Farm Dutch Barn from the north side of NYS Route 7, facing northwest.



Photo 2. View of Dutch barn from the north side of NYS Route 7, facing north



Photo 3. View of Dutch barn from the north side of NYS Route 7, facing northeast.



Photo 4. View of English threshing barn addition on Dutch barn, facing east



Photo 5. View of English threshing barn addition, facing south.



Photo 6. View of English threshing barn addition, facing southwest.



Photo 7. View of Shafer Farm Dutch Barn Complex, facing southwest.



Photo 8. View of Shafer Farm Dutch Barn Complex, facing west.



Photo 9. View of the interior of Dutch barn from the loft area of the English threshing barn, facing south.



Photo 10. View of the interior of Dutch barn showing rafters, H-bent column, anchor beam, cut-off transverse tie-beam and modern drop ceiling, facing southwest.



Photo 11. View of the interior of Dutch barn showing rafters, H-bent column, anchor beam, cut-off transverse tie-beam, longitudinal sway bracing and modern bracing, facing southeast.



Photo 12. Detail of anchor beam and H-bent column intersection showing marriage marks, facing south.



Photo 13. View of the interior of the Dutch B\barn and English threshing barn showing the two barns intersect, facing south.



Photo 14. View of the interior west gable wall of the English threshing barn, facing southwest.



Photo 15. View of the interior southwest corner of the English threshing barn, facing southwest.



Photo 16. View of the interior northwest corner of the English threshing barn showing hay mow area below and roof damage above, facing northwest.



Photo 17. View of the interior north wall of the English threshing barn showing a modern concrete block chimney stack, facing southwest.



Photo 18. View of the interior of the English threshing barn, facing east.



Photo 19. View of Dutch barn ground-level looking down the center aisle, facing northwest.



Photo 20. View of Dutch barn ground-level looking down the center aisle, facing northeast.



Photo 21. View of Dutch barn ground-level looking at the southeast corner, facing east.



Photo 22. View of Dutch barn ground-level looking down the center aisle, facing south.



Photo 23. View of Dutch barn ground-level looking at northwest corner where both the sill and end girt are missing, facing west.



Photo 24. View of Dutch barn ground-level looking at southwest corner showing H-bent column and transverse side-aisle ties all with white-wash coating, facing southwest.



Photo 25. View of easternmost barn in complex, facing north.



Photo 26. View of easternmost barn in complex, facing northeast.



Photo 27. View of side door on easternmost barn also showing the uncoursed fieldstone foundation, facing east.



Photo 28. View of interior of easternmost barn showing modern horse stabling pens, facing north.



Photo 29. View of interior of easternmost barn showing opening on east wall and white-washed interior walls, facing east.



Photo 30. View of interior of easternmost barn showing modern horse stabling pens and white-washed joists above, facing northeast.



Photo 31. View of interior of easternmost barn showing modern horse stabling pens and white-washed joists and walls, facing west.



Photo 32. View of interior of easternmost barn, facing north.



Photo 33. View of interior of easternmost barn showing modern horse stabling pens, facing southeast.



Photo 34. View of interior of easternmost barn showing resued staircase to loft, facing north.



Photo 35. View of loft of easternmost barn, facing northeast.



Photo 36. View of loft of easternmost barn showing battened floor boards, facing south.



Photo 37. View of loft of easternmost barn showing small door for hay, facing east.



Photo 38. View of loft of easternmost barn showing hewn framing members, facing west.



Photo 39. View of westernmost, ground-level cow stable barn, facing northwest.



Photo 40. View of cow stable, facing north.



Photo 41. View of cow stable, facing northeast



Photo 42. View of cow stable showing northern end with vehicle storage, facing west.



Photo 43. View of interior of cow stable showing concrete floor with manure trough, facing north.



Photo 44. View of interior of cow stable showing concrete floor with manure trough and double-boarded walls with white-wash coating, facing south.



Photo 45. View of interior of cow stable showing location of original hay loft and small hay door, facing west.



Photo 46. View of interior of cow stable showing modern pen and white-washed timbers, facing northeast.



Photo 47. View of interior of cow stable showing white-washed interior with double-boarding, facing northwest.



Photo 48. View of interior of cow stable showing location of original hay loft and back pen, facing north.



Photo 49. View of interior of cow stable showing small back pen and concrete floor with manure trough, facing northwest.



Photo 50. View of interior of cow stable showing small back pen, facing west.



Photo 51. View of vehicle storage in cow stable, facing southwest.



Photo 52. View of Shafer Farm Dutch Barn Complex from the south side of NYS Route 7, facing north.