

TIMBER FRAMING

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A Tale of Two Houses

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On front cover, house in West Stockbridge, Mass., comprising 1846 hemlock and white pine roof frame saved from house in nearby Sheffield and new timber frame of salvaged hewn timbers. On back cover, Thomas Lanoue fills in weatherboard siding over Sheffield house's newly restored Georgian entryway.

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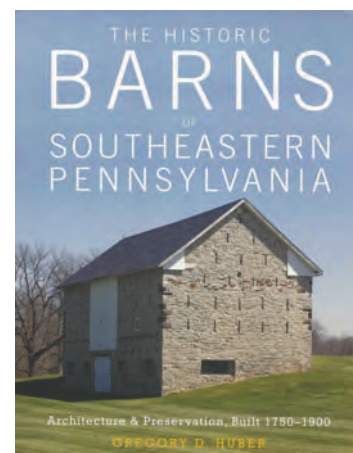
Pennsylvania Barns

Gregory D. Huber, *The Historic Barns of Southeastern Pennsylvania: Architecture & Preservation, Built 1750–1900*. Schiffer Publishing Ltd., Atglen, Pa., 2017. 8¾ x 11¼ in., 240 pp., profusely illustrated. Hardcover, \$50.

I FIRST began to learn about timber framing while living for some time in north-central Vermont, becoming immersed in the familiar vernacular forms of New England architecture. Before moving to Vermont, I had grown up in Bucks County, Pennsylvania, and the stone barns and houses there I had taken for granted in my youth. I assumed that everyone had this sort of architecture. After moving north and traveling around the country a bit, I came to realize that those structures were not as ubiquitous as I had thought. On subsequent trips to visit family in Pennsylvania, I often went out of my way to travel on back roads and take in the scenery, wishing that I would have the opportunity to apply my knowledge of historic building trades to the striking buildings that I had once neglected.

In 2013, I returned to reside in the mid-Atlantic region and began to explore historic buildings whenever I had a moment to spare. The confidence in my knowledge of early building techniques and forms in New England did not migrate with me to Pennsylvania, where I felt as though I was starting from scratch. Four years later, I am still feeling a bit wet behind the ears. A copy of Robert Ensminger's *The Pennsylvania Barn*, which I had merely browsed many times before, had a new and urgent relevance for me. I read it carefully, cover to cover, the first month after I moved south. Ensminger's book is well regarded among barn enthusiasts for its in-depth research of the history, development and migration of this distinct barn type and its numerous variations, and it does discuss, peripherally, other agricultural buildings of the region.

Other authors who have made significant contributions to the study of historic agricultural buildings in the region include Berenice Ball, Charles Dornbusch and John Heyl. I have found also a number of well-researched articles in various periodicals





1

Sheffield Historical Society



2



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Photos David E. Lanoue, Inc. unless otherwise credited

1 Ashley-Bartholomew House, Sheffield, Massachusetts, built 1770 in Georgian style by Ashleys, with replacement gable roof and Greek Revival trim added by Bartholomews in 1846. Photo taken late 19th century.

2 Ashley-Bartholomew House in early 21st century, retaining only entablature, pedimented ends and doorway from 1846.

3 Temporary roof, full staging erected around and over building to protect historic fabric during radical roof rebuild to come and to provide dry working conditions in any weather.

4 Canted chimney redirected toward ends of 19th-century gable roof. Chimney originally passed through hip roof where canted work takes off.

A Tale of Two Houses

COLONEL JOHN ASHLEY (1709–1802), veteran of the French and Indian wars and a notable person of his time, in 1770 caused to be constructed for his son John Ashley, later Major General John Ashley (1736–99), a fine Georgian-style house, 36 ft. by 46 ft., along a section of the Housatonic River now known as Ashley Falls, in Sheffield, Massachusetts. The Georgian Mansard roof was removed by new owners, the Bartholomew family, in 1846, probably because of water damage, and replaced with a square-ruled, simple gable roof, easier to build and maintain, and the house was presumably at the same time elaborately retrimmed in Greek Revival style (Fig. 1), except for part of the doorway. In the attic of the house when we first visited

it in 2001 (Figs. 2–5), we found a central scribe-ruled, purlin-plate frame on posts stub-tenoned to the floor framing and doing no work, surrounded by a larger square-ruled purlin-plate timber frame supporting the common-rafter system of the replacement roof (Figs. 5 and 7). We found that interior chimneys had been rebuilt on a slant in the attic to exit the roof near the gable ends (Fig. 4). Certain rafter seats mortised into the top plates on the ends as well as the sides of the building provided more evidence of an original hipped configuration.

Architect-builder Jack Sobon (Fig. 6), with whom we work frequently, planned the reconstruction of the original Mansard system, in form a small, shallow hip roof over large steeper hips.



5 Full-length posted purlin system under 19th-century gable roof frame, 18th-century posted purlin assembly just visible inside. Wall plate on studs carried 19th-century rafters.

6 Architect-builder Jack Sobon consulting his floor-frame plans.

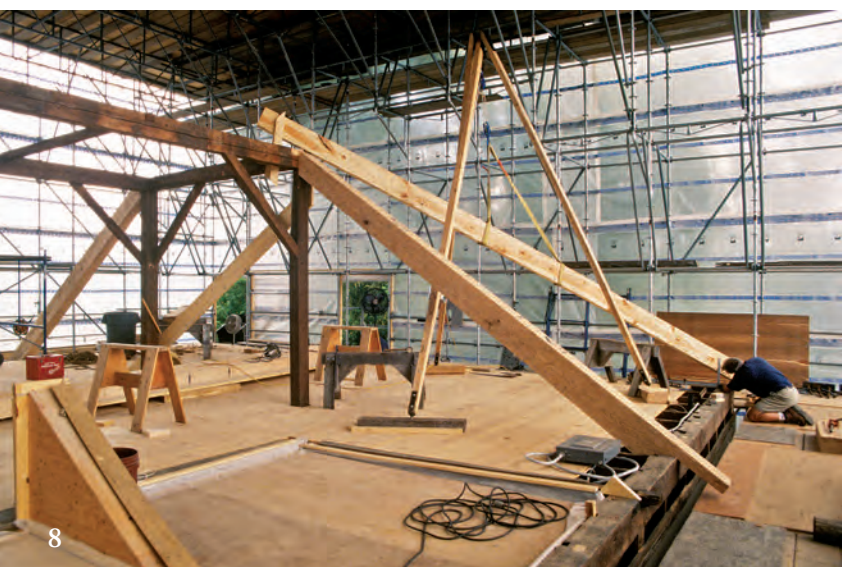
7 Posted 18th-century purlin system originally supporting Mansard roof at pitch change, stub-tenoned to original attic floor framing including wall plates.

We erected full staging and a temporary roof over the whole structure while we removed the gable roof, to ensure protection of mostly original fabric (Fig. 3). We extensively documented both the 1770 and the 1846 building systems, although at first we supposed the latter work to be from the 1830s. Given the Greek Revival treatment of the house, of which only the entablature and end pediments remained when we began our work in 2002, we assumed an earlier date, which was disproved by subsequent dendrodating.

As we prepared for the disassembly of the 1840s roof system, I realized that we should number and conserve all the components of the remaining Greek Revival top, including trim and entablature blocking and sheathing, as well as the square-ruled

purlin-plate timber frame and common rafters, all found to be in very good condition. I determined that one day it would be practical for us to make a “bottom” to go with the “top,” yielding a complete house. Not only was the whole roof system of great monetary value, but also it could live on as a testimony to earlier building practices, builders, clients and the architectural times. Disassembling and reassembling the elements would later prove to advance our knowledge as a crew in ways that few building procedures allow.

We organized the materials and put them into storage for the future, to concentrate on the task at hand: the restitution of the Georgian roof system of the General John Ashley House.



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8 General Ashley House, Sheffield, Mass., two common rafters in place, hip rafter being scribe-fitted by Thomas Lanoue, 2002.

9 Reconstructed Mansard roof frame seen from attic, with chimney cut back to under-roof height and awaiting extension through reformed opening in lower pitch of Mansard.

We used traditional hand and power tools to execute the work (Figs. 8–12), as well as period-appropriate timber conversion and raising methods. Like those of the original General Ashley frame,

10 Mansard roof frame with running dormer at rear of house.

11 Matthew Duffin shingling over front dormer valley flashing.

12 Completed house with correctly reconstructed roof reflecting evidence found in attic framing. Restored 1770 doorway picked out in dark green. See back cover for detail.

most of the new rafters 5x9 and smaller are pitch pine, both hewn and sawn. The new 7x12 main rafters that abut the purlin-plates are red oak, and the 5x9 hips themselves are pitch pine.





13

13 Crew at work in Housatonic, Mass., building new framed box to fit under saved gable roof from 1846 renovation of Ashley-Bartholomew house in Sheffield.

14 New box raised and staged, ready for addition of saved roof.

15 Attic under reassembled 1846 roof frame.

16 Mike Fountain reattaching original hemlock blocking as base for saved Greek Revival entablature. Cornice blocks in place.

17 Attaching saved trim to falsework and first roof board. Enviroshake composite roof covering will run over crown molding.

18 Front entrance has slender 9:1 ratio Doric columns and relatively flat self-drained copper-covered roof.

19 New house, nearly complete, stands in West Stockbridge, not far from house that supplied its roof frame in Sheffield.

A new bottom for the old top Eventually the opportunity arrived to reuse the saved material from the Ashley-Bartholomew house. Why not, I thought, build the exterior of the new bottom in the same Greek Revival style as the saved material? The interior could feature an exposed timber frame constructed with old timber, which would probably appeal more to today's house-hunter than a fully plastered Greek Revival interior interpretation. I sought Jack Sobon's advice on the framing details for a new main frame and floor system following the established layout and bearing points of the saved purlin roof system, working from top to bottom. We called on Bill Flynt, Architectural Conservator at Historic Deerfield, to dendrodate selected timbers. He examined purlin posts, purlin plates, main plates and studs. It was satisfying to know the truth when he reported 1846 as the probable raising date for the saved material.

We laid out the new first-floor deck system by the square rule and framed it according to plan in bandsawn white pine timber with oak girders and supporting posts resting on granite plinths. For the upper frame, we used reclaimed hewn timbers in various species. After resawing and resizing some of the members, bearing in mind the framing faces that would show, we laid out, again by the square rule, and cut the joinery in timbers of elm, black ash,

beech and red oak, using a combination of hand and power tools (Fig. 13). Before refitting, we powerwashed the 1846 roof frame of hewn hemlock purlin posts, purlin ties and post struts, hewn white pine purlin plates, main knee-wall plates, and sawn hemlock rafters and braces. The two-piece rafters, butted at the purlin plate, tapered from 5x4 to 4x4 in. We then raised the frame with its double-plated top (Fig. 14) and added the saved roof frame (Fig. 15).

We reconstructed the outside finish by reassembling the original hemlock blocking and white pine trim (Figs. 16 and 17). The details of the corner pilasters, siding and windows were taken from studies of those found from the original 1846 remodeling job and then compared with research and documentation of existing Greek Revival houses in Berkshire County, Massachusetts. We added a new main entry with comparatively slender columns in a 9 to 1 "feminine" proportion that determined the geometry of the rest (Fig. 18). The reassembly of the 1846 exterior elements on the new building (Fig. 19) led us to a greater understanding of the classical orders of architecture as well as of the proportioning decisions that had underpinned the Greek Revival facelift on the earlier Georgian house.

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