# Fox Hall - *Part 16*, Dormer Installation

By

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In Fox Hall - *Part 11*, Second-Floor Assessment and Fox Hall - *Part 13*, Dormer Construction, roof construction and subsequent reconstruction after two, second-floor fires were discussed. In summary, a fire early in the nineteenth century totally destroyed all framing and woodwork above the second-floor floor. Obviously, we have no remaining evidence of the circa 1725-30 framing and dormers, if, indeed, there were dormers on the first-period house. However, based on the Lynnhaven House, it is reasonable to assume that there were.

The entire second floor was reconstructed within the original brick endwalls shortly after this fire in the manner and with materials common to that period. Late in the nineteenth or early twentieth century, the owner at the time added two annexes to the back of Fox Hall, updated the dormers to match the roof pitch of the new annexes, added a large gable to the front roofline of the original house, and added an open porch across the front (Fig. 1, Front dormers and gable) (Fig. 2, South dormer on back of Fox Hall). In the Fox Hall series, this is referred to as the Roper period. A second fire in the attic, after these Roper "upgrades", damaged much of the replacement framing of the early nineteenth century. Fortunately, repair of this damage consisted primarily of sistering the fire-damaged second- and Roper-period

framing rather than replacing it. Fire charring can be seen on some framing members in the photos later in this discussion.

Figure 1

Figure 2

During December, January, and February, while outside roof work was impacted by adverse weather, extensive preparations were undertaken inside the existing dormers and under the front gable to ready the roof structure for installation of the restoration dormers. Since the restoration dormers are narrower than the Roper dormers, the roof penetrations had to be reduced in size. As part of this prep work, the openings on the two, existing, front dormers were more closely aligned with the below brick piers. While precise alignment with the brick piers was not possible without extensive alteration of the early nineteenth-century rafters, the restoration dormers will be closer in alignment.

Since we do not know for certain that the circa 1725-30 roof had dormers, did the post-fire, second-period roof have dormers? The answer is yes, and they were essentially in the same locations as the Roper dormers. While doing demolition under the front northeast dormer, the butt ends of two cripple, second-period rafters were discovered (Fig. 3, Cripple rafters associated with dormer in early nineteenth-century roof).

Figure 3

The spacing of these cripple rafters and their position within the roof penetration confirm that the size of our restoration dormers is essentially correct and that the planned positioning of our new dormers over the brick piers is in agreement with the early nineteenth-century dormers. Why these front, nineteenth-century dormers were not centered over the brick piers is not known.

The following figures show the demolition inside of the Roper dormers and gable and the new framing needed to accommodate our restoration dormers. (Fig. 4, Inside northeast front dormer; note the heavier framing on the left side that narrows the roof penetration and shifts it to the right more in alignment with the below brick wall pier)

Figure 4

(Figs. 5 & 6, Inside northwest front dormer; note here the heavier framing on the right side that narrows and shifts the roof penetration to the left for better alignment)

Figure 5

Figure 6

(Fig. 7, Reframing inside south dormer).

Figure 7

(Fig. 8, North view inside Roper gable before reframing for center restoration dormer and gable removal; note charred wood from Roper-period attic fire)

Figure 8

(Fig. 9, South view inside Roper gable before reframing for center restoration dormer and gable removal; note charred wood from Roper-period attic fire and sistering repairs)

Figure 9

(Fig. 10, Reframing of roof structure under Roper gable to accommodate new restoration dormer centered over the front door)

Figure 10

The south Roper dormer on the back of Fox Hall was the first to be removed in preparation for installation of the new restoration dormer (Fig. 11, South Roper dormer removed).

Figure 11

This was our learning dormer, and learn we did. On a beautiful day for flying, 4 March 2021, the first restoration dormer was flown into position (Fig. 12, Dormer in flight) (Fig. 13, Dormer on final for landing) (Fig. 14, Touchdown).

Figure 12

Figure 13

Figure 14

With precision, shop-made dormers and carefully prepared roof penetrations, the fit should be perfect, right? If only it were that simple. Old houses, especially those nearly three centuries old, are full of surprises. Fox Hall is no exception. The dormer did not fit properly. It leaned forward several inches. The roof pitch of the house was measured inside at 12:12, and the dormers were constructed to fit this pitch. As it turns out, the outside roof pitch is actually 13:12. To correct for this required field modifications to both the dormers and the framing of the roof penetrations. As stated, this first dormer was our learning dormer, and our lessons learned have been applied to the other three restoration

dormers and roof openings (Fig. 15, South dormer mated to roof after field modifications) (Fig. 16, Roof prepped for northwest dormer) (Fig. 17, Field-modified northwest dormer is set).

Figure 15

Figure 16

Figure 17

In Fig. 18, restoration team roofer, Ed Ashworth, is in the process of installing copper flashing prior to installing temporary roof shingles on the south dormer.

Figure 18

In Figs. 19 & 20, the casement window has been set and siding is being installed on the south dormer.

Figure 19

Figure 20

In Figure 21, the south dormer exterior trim work is complete and is awaiting a final coat of paint.

Figure 21

In preparation for the demolition of the gable on the front of Fox Hall, an interesting discovery was made during removal of the aluminum siding on and window in the gable. Apparently, when Roper removed the early nineteenth-century central dormer to accommodate his gable, he reused the window frame and sash in his new gable. Later in the twentieth century when aluminum siding was added on the gable, the nineteenth-century sash was removed, and an aluminum, double-hung window was installed in the window frame. This is the only window

evidence we have from the dormers installed in the early nineteenth century after the first fire (See Fig. 1) (Fig. 22, Window frame from second-period dormer reused in Roper-period gable, note at bottom that window sill was hacked off in fitting in gable) (Fig. 23, Detail of mortise and tenon joint of window frame) (Fig. 24, Detail of bottom of frame where it was fitted to a rafter during second-floor rebuild after first fire).

Figure 22

Figure 23

Figure 24

While we cannot be certain, it appears that this window frame had a single-hung sash with the top half fixed and the bottom part running against the top half without runners in the sash sides but in chutes formed by the front and back window stops. Interestingly, the measurements of this second-period frame are quite close to our restoration dormers. This frame also has charring on its header from the second fire.

Figures 25 through 31 document the progression of gable removal and the completion of dormer restoration across the front and on the back of Fox Hall (See Figs. 1 & 2 for before photos).

Figure 25, Demolition of Roper-period gable underway

Figure 26, Closing gable roof penetration

Figure 27, Flying in northeast restoration dormer

Figure 28, All three front dormers set

Figure 29, Restoration of front dormers and temporary roofing completed (Ledgers are for painter's ladder and will be removed)

Figure 30, South dormer restoration and temporary roofing completed

Figure 31, Interior trim in restoration dormers

Removal of the circa 2016 front porch that replaced the Roper-period front porch and restoration of the barred windows in the front foundation wall will be covered in a subsequent article in this series.