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REPORT ON THE BRICKETT HOUSE EVANS NOTCH RANGER DISTRICT WHITE MOUNTAIN NATIONAL FOREST

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This report is based on an inspection of the Brickett House on July 22, 1994. The purpose of the inspection was to assess the age and condition of the building when some of its features were exposed by an archaeological investigation being carried out by historical archaeologist Kathleen Wheeler of Brentwood, N.H. The house has previously been described in detail, and its physical condition has been thoroughly assessed, in a document entitled *Condition Report and Stabilization Plan, Brickett Place, Evans Notch Ranger District, White Mountain National Forest*, written in 1990 by Bero Associates, preservation consultants from Rochester, New York. The purpose of the present report is to provide a historical context that may correlate with Dr. Wheeler's archaeological findings.

Summary: Although construction of the Brickett House has traditionally been dated at circa 1812 (see *Condition Report and Stabilization Plan*), physical evidence within the building itself, discussed in detail below, points strongly to a construction date of circa 1830. Future interpretation of the house may be strengthened by further investigation of the status of the Brickett family at this period, and by study of several comparable houses farther south on Evans Notch Highway (Route 113) in the villages of Chatham, New Hampshire.

Description:

Structure: The Brickett House is a story-and-a-half gable-roofed brick dwelling house built over a half basement that extends beneath the eastern side of the building. The walls of the cellar appear to be native fieldstone below grade, but these walls are covered by poured concrete capped with a withe of brick extending to the first floor frame above. This inner wall was probably added with the hope of stabilizing the foundation wall and of keeping the cellar warmer in the wintertime.

The fieldstone cellar walls are capped above grade by underpinning of large split granite slabs. These slabs retain the marks of the slots and holes by which they were split; their faces are not hammered to a smooth surface.

The underpinning stones of the Brickett House were split by two methods. The first method made use of a chisel to create a line of narrow slots along the stone. Wide, flat iron wedges, flanked by sheet metal shims, were inserted into these slots and driven tighter

until the stone split. The characteristic marks of this flat-wedge method of splitting are a series of flat, tapered indentations along one edge of the split stone.

The second method of splitting seen in the stones of the Brickett House foundations used a plug drill, rotated after every blow of the stonemason's hammer, to create a row of circular holes in the stone. Small steel wedges, flanked by two "feathers" with rounded outer surfaces, were inserted in each hole and driven tighter until the stone split along the line of holes.

Both physical evidence gathered in the field and written accounts suggest that the years around 1830 were the period of transition from the flat-slot to the round-hole method of preparing granite for splitting. In many buildings of about 1830, both technologies are seen side-by-side, as in the Brickett House.

Thanks to excavations by Dr. Wheeler near the southwest corner of the house, we can see that the western portion of the building, which has no basement, has foundations that consist of large fieldstones that were aligned in a trench. Atop these footings are large split granite slabs like those under the eastern end of the building. Like the latter, the underpinning stones of the western end retain the marks of their splitting and were not hammered to a true face. These stones also reveal a combination of flat-slot and round-hole splitting techniques.

The brick walls of the house are made from hand-moulded bricks that appear to be sand-struck. These bricks are laid in common or American bond, with header courses every seven or eight courses. The original jointing detail seems to survive in certain areas of the wall, probably partly because of the protection afforded by former porches that extended around three sides of the building. This jointing is composed of a simple half-round indentation in the lime mortar, and is the common joint of the early nineteenth century.

While brick bonding cannot be used as a precise dating aid for buildings, it is generally true that use of the common or American bond for the principal walls of a house is a phenomenon of about 1830. This bond had been known to the earliest bricklayers to ply their trade in northern New England; the side and rear walls of the Macpheadris-Warner House in Portsmouth, New Hampshire (1716), one of the oldest brick buildings in the region, are laid in a variant of this bond. But the common bond was relegated to the less important sides of buildings until about 1830. Most brick buildings constructed before this time display Flemish bond on their principal walls. Both urban and rural brick buildings began to display the common bond on their facades around 1830, possibly because of the extra time and labor demanded by the attractive, strong, but complex Flemish bond.

The color of the face bricks in the walls of the Brickett House varies considerably, and certain zones of the walls, especially in the gable ends, are of markedly different colors from adjacent zones. Where darker and lighter bricks have been more fully integrated in wall areas, the surfaces have a speckled appearance due to the alternation of hard-burned and softer stretchers. This variation in color probably arises from the use of an entire clamp or kiln of bricks in the walls. Bricks from a small kiln have a wide variation of color, depending upon their location in the mass being fired. When all or nearly all of the

products of such a kiln are used in a building, the variation in color seen here is the usual result. Buildings constructed from selected bricks from larger kilns, or from selected bricks from several kilns, will be much more even in hue.

One two-story house in North Chatham, a short distance south of the Brickett place, appears to be nearly contemporary with the latter and to share a similar floor plan. Like the Brickett house, this dwelling shows considerable variation in the color of its face bricks. Still other brick houses in North Chatham or Chatham appear to be later in date; these reveal much less variation in their walls.

Window and door openings of the Brickett house are spanned by flat arches of bricks laid as single soldier courses on the faces of the walls; the keystone bricks are cut to a wedge shape. The walls are eight inches (one brick) in thickness. As with most eight-inch walls laid in common bond, the header courses do not quite project to the inner plane of the wall; where exposed in the attic, some of these courses have been lightly parged to even out the wall surface. As is usual in bricklaying, the backing bricks of the walls are not laid as carefully as the face bricks, and appear to display even more randomness in color and hardness.

The overall form of the Brickett house is that of a knee-wall story-and-a-half house. In such houses the wall plates are elevated two or three feet above the attic floor, providing extra headroom in the low second story. Whether built of wood of brick, knee-wall houses have no tie beams at the feet of the rafters, and so the rafters and the plate they rest on have a tendency to spread under snow and wind loads. In wooden houses, the horizontal stresses contributed by this spreading tendency are resisted by the wall posts and studs, which are typically tied together through the house and thus are capable of resisting bending forces at their upper ends. Further resistance to the spreading of rafters is commonly provided by well-secured collar ties halfway up the rafters.

In a brick house, the spreading tendency of the rafter feet can only be resisted by collar ties and by the stiffness of the wall plates. Brick walls have little ability to withstand horizontal stresses, and cannot contribute the resistance to spreading that wooden wall posts can.

The roof system of the Brickett house is composed of eleven sets of common rafters, including the pairs that rest atop the brick gables walls of the house. Each rafter is hewn with a broad axe, and measures about 7 inches high by 5-1/2 inches broad. Rafter sets are placed about forty inches on centers. The feet of the rafters are pinned to heavy oak plates that rest atop the front and rear walls of the house and measure about 6 inches high and 12 inches broad. The peaks of the rafters are pinned into a pentagonal hewn ridgepole that runs the full length of the roof.

Each set of rafters is connected by a hewn collar beam at about mid-height. The ends of each collar tie are tenoned into the undersides of the rafters and secured by a single treenail. There is no evidence of a dovetail joint at these connections, although such a joint is not uncommon at the ends of collar beams due to the fact that stresses in collar beams can alternate between tension and compression depending on wind and snow loads.

In an effort to resist the tendency of the wall plates to spread under the outward pressure of the rafter feet, each plate has been tied to the hall girts of the house by a steel rod that runs diagonally downward from the plate to the girt below. These rods were not examined closely; they were presumably added in the twentieth century after spreading of the plates had become evident.

One unusual aspect of the roof system of the Brickett house is the fact that each gable wall has rafters and collar ties incorporated in the brickwork. The rafters apparently lie atop the brick walls; their outer faces are covered by the rake boards of the gable ends. The collar ties are embedded in the masonry. Whereas other collar ties in the roof system are approximately the same breadth as the rafters into which they frame, the end collars must be considerably less broad than the rafters in order to allow a four-inch covering of brick on their exterior.

Inclusion of collar ties in a brick gable wall is unusual, and introduces a line of potential weakness in the brickwork. Despite this fact, there is no obvious cracking or movement of the bricks where they pass over or rest on the collar ties. The *Condition Report and Stabilization Plan* noted some inward tipping of the gable walls (p. 34 and figs. 4.12 & 4.13), but the cause of this is unknown and may have no connection with the unorthodox incorporation of wooden framing elements in the walls. On the other hand, shrinkage of the collar beams during drying could have contributed to the inward motion of the brickwork above them.

The Brickett house originally had four chimneys. Of these, three remain.

Of the three that remain, only one, the parlor chimney in the southwest room, appears to survive largely unaltered and is more fully described below under "**Detailing**."

The chimney in the sitting/dining room on the southeast still exists, but its base in the cellar appears to have been altered and its detailing above the first floor has been removed, making it difficult to ascertain the original condition of the structure.

The kitchen chimney, in the northeast room, has been rebuilt. Fragments of its base survive in the cellar and reveal that the chimney was a large structure with a brick vault that rested on granite footings. Where it passed through the attic floor, this chimney measured about 4'-9 3/4" in breadth and projected about 4'-5 1/4" from the side wall of the house. Because the chimney here was large, the attic window adjacent to it was offset toward the center of the house to accommodate the width of the stack; on the western gable end, window placement is symmetrical. Given its ample dimensions, the chimney almost certainly contained a cooking fireplace and a brick oven. The present chimney in this location is a single-flue stove chimney built to serve a kitchen range.

The chimney in the northwest room of the house has been removed to a point below the first floor.

Detailing: The exterior detailing of the Brickett house is minimal and very simple. The house has a wooden box cornice without crown mouldings or gutters, and has simple, flat, untapered rake boards, recently replaced. A photograph taken between 1928 and 1933 and reproduced in the *Condition Report and Stabilization Plan* of 1990 appears to show the original rake boards, which taper slightly from eaves to ridge. Closer study of the original photograph might reveal whether these rake boards had a shingle moulding, which, along with the taper, would be traditional.

Each window frame has a bead plowed into its inner corner, adjacent to the sash. The joint between each window frame and the abutting brickwork is sealed with a round staff moulding, which is characteristic of most brick houses of the early nineteenth century.

The interior detailing of the house is for the most part of the federal style, although there are a few features that derive from the subsequent Greek Revival period. The interior woodwork is thoughtfully composed and creates an interesting visual effect, but most of the mouldings were produced by only two or three moulding tools.

The southwest first-floor room is the most elaborate in the house and must have served as a parlor to the extent that a special parlor existed in a small house filled with a large family. While this room has had some changes, notably the installation of a wooden bench beneath the windows on its south and west walls, it retains most of its original detailing. This detailing is highly indicative of a date around 1830, when the federal style was evolving into the Greek Revival.

The focus of the room is the mantelpiece. This feature is highly unusual, having an extraordinarily high shelf that stands about 63-1/4 inches from the floor. The shelf is supported by a series of flat, deeply-projecting fillets, with bed mouldings composed of a Grecian ovolo above a cavetto and bead. The pilasters that support the mantelshelf are identical to the window casings of the room (see below), but are broken by applied capitals at the point where the architrave of a typical mantelpiece might occur. Instead of having the usual horizontal architrave and frieze, this mantelpiece has a semicircular arched opening that extends upward to within inches of the bed mouldings of the mantel shelf.

The extraordinary height of the mantel shelf, combined with the semicircular opening and a corresponding shallow niche in the brickwork behind it, suggests that this feature may have been designed originally for a parlor stove rather than for an open fireplace. Since stoves were uncommon before 1830, this is one of several types of evidence pointing to a date of about that time for the entire house.

The door and window casings of the parlor are symmetrically-moulded boards with corner blocks. The window casings are unusual in having blocks at their lower as well as upper corners, and in running beneath the window openings in place of window aprons. The profile of these casings (which are also employed as pilasters on the mantelpiece, and there have plinth blocks) is a double ogee separated by a central fillet. The inner door and window casings, covering the frames, are flat boards with an inner bead.

Casings of this type, retaining the inner beaded member and substituting a wide, symmetrically-moulded board for the traditional backband moulding, are again characteristic of the 1830 period as federal detailing gave way to Greek Revival features. Casings similar to these can be found in Asher Benjamin's influential book, *The Practical House Carpenter* (Boston, 1830).

The baseboard of the parlor is more strongly Greek in feeling than any other feature of the room. It is composed of a very flat Grecian ovolo above a fillet, with a deep, plowed groove separating these cap elements from the flat lower baseboard.

The parlor once had a chair rail that ran directly beneath the lower window casings. This has been removed around the entire room, but its former presence can be seen in elongated patches in the wall plaster. A newer, higher chair rail runs along the wall adjacent to the central hallway of the house.

The type of door seen in the parlor is repeated throughout the house except where twentieth-century doors have been hung in a few openings. These original doors are very simple units, each with four nearly equal-sized flat panels. The doors are hung on butt hinges and have Norfolk thumb latches of the simplest type.

The front sitting room on the southeast corner of the house has less varied woodwork of a more conservative style than that of the parlor. As mentioned above, the chimney in this corner of the house seems to have been altered, having suffered changes to its foundation in the cellar. The room has no mantelpiece; a new floor of southern yellow pine covers the area where a brick hearth may have existed. Thus, it is difficult without further investigation, especially focused on the floor membrane as seen from the cellar, to say whether this room was designed for a stove or a fireplace.

Both the door and window casings of this room are composed of flat boards having an inner bead and a backband moulding composed of a Grecian ovolo and bead. The baseboards and chair rails gain visual appeal through the use of the same moulding tool used to fashion the backbands. The bottom of each chair rail is moulded with a 3/4-inch-wide Grecian ovolo and bead, as is the top of each baseboard. By the inventive use of a single tool, then, the joiner gave this room an attractive federal-style appearance in which the mouldings of the backbands, chair rails, and baseboards are identical.

This room is the only one in the house to retain original sashes; these survive in its eastern window openings. The muntins of these six-over-six sashes are of the standard federal-style profile of 1790-1830, except that the ovolo mouldings on the muntins are unusually small and the central fillet is proportionately prominent. The only other original sash in the house is the three-light transom sash above the front door. This has the same muntin profile.

The remaining window sashes in the house are modern. While they retain the six-over-six arrangement of the originals, they have an ogee muntin profile that contrasts with the ovolo-and-fillet design of the older units. A photograph taken between 1928 and 1933 and owned by Guy Shorey of Gorham is reproduced in the *Condition Report and Stabilization*

Plan of 1990. This photograph records extensive remodeling to the house. Some window sashes are shown as missing, with their window openings boarded temporarily. This is probably the time when the new sashes were installed.

The Brickett House was planned with a central entry between the front rooms. Whether this entry extended through the full depth of the house or stopped at the kitchen wall, as it presently does, is difficult to say without more detailed investigation. It should be noted that the casings around the doors between the kitchen and the cellar stairs and the kitchen and the end wall of the entry do not match other casings leading from the kitchen; this suggests that the entry was altered and truncated at the back of the staircase in order to combine the space at the rear (north) end of the passageway with that of a once-smaller kitchen.

The detailing at the front of the entry is simple. Door casings are identical to those in the southeast sitting room. The baseboard has a simple bead at its upper edge. There is no sign that the entry had a chair rail. Where exposed by damage to the plaster, the split-board lath in the entry was sawn on a reciprocating saw and is therefore similar to that in other areas of original plaster.

The enclosure at the head of the stairs is later than other walls in the house. As seen from the attic at the eastern end of the second floor, this area has circular-sawn split-board lath, whereas other lath in the house, including that in the walls of the two second-floor bedchambers at the western end of the house, was cut on a reciprocating saw. This implies that the entry was open to the attic at the time of first construction, with a view of the unfinished area above the stairs, unless earlier walls, now replaced by the present ones, enclosed the upper end of the flight.

The present balustrade appears to be a replacement. The style of the heavy, turned newel post, the dowel-like balusters, and the simple, shaped handrail suggest the period around 1850 or later rather than that of 1830. Possibly these elements were introduced at the same time that the upper end of the staircase was enclosed with newer lath and plaster.

The newel post at the head of the stairs, on the other hand, is characteristic of the 1830 period. This element, turned from birch or maple, has a mushroom-like knob at its top, a square block to receive the handrail, a Grecian ovolo transition moulding below this block, and a tapered shaft broken only by a reglet a few inches below the ovolo. A similar newel post is illustrated in Plate 57 of Asher Benjamin's *The Practical House Carpenter.* Irregularities in the floor boards beneath the base of this upper newel post suggest that another element originally stood here; possibly this post was the original main newel at the bottom of the stairs and was moved to the top when the larger and newer newel was placed below.

The northwest room on the first floor, probably originally intended as a bedchamber, has features in common with the simpler detailing of the front portion of the house. The door and window casings are identical to those in the entry and southeast room. The room once had a chair rail, 33-1/2 inches high, around its perimeter. This element was integral with

the window aprons, and sections of it remain beneath each window, to the east of the doorway leading to the front parlor, and in closets.

The window openings and sashes for the rear rooms of the house are some three inches (one course of bricks) smaller in height than the openings for the front rooms. In order to make the interior window openings of the northwest chamber appear as high as those of the front rooms, the window casings are carried beneath the lower rail of the bottom sash, several inches above the combined chair rail and window stool/apron.

This room once had a chimney in its western wall, as may be seen from marks in the wall plaster and floor boards. A broad but shallow closet in the south wall of the room, adjacent to the parlor, was added later. The original chair rail of the room extends through part of this closet, and the closet itself blocks a former door opening between the chamber and the front parlor (see below, **Evolution**).

The kitchen was not studied closely due to archaeological laboratory activities being carried on there. The room has been remodeled extensively on several occasions and its evolution deserves careful investigation. As mentioned above, the kitchen almost certainly incorporated a cooking fireplace, probably with a brick oven, while other rooms in the house may have utilized air-tight stoves for heat. In this sense, the kitchen was probably the most traditional space in the dwelling, retaining cooking technologies that were about to be superseded in the 1830s by cast iron ranges. This is common among houses of the period; many housewives trusted fireplaces and brick ovens and were unsure of the reliability of cooking ranges.

The two bedchambers on the western side of the second floor have very generic, square-edged door and window casings. They are floored with narrow boards of southern yellow pine. As mentioned above, their lath is of the split-board type, sawn on a reciprocating sawmill. The small upper entry outside their doors was added later, having split-board lath sawn on a circular saw.

The bedchamber at the southwest corner appears to have a fireplace surrounded by a mantelshelf of the simplest Greek Revival design. The sheet metal covering of the fireplace opening was not removed, so it is possible that the apparent fireplace was actually merely an enframement for a stove location.

Due to the removal of the northwest chimney and the subsequent reflooring of the northwest bedchamber, little can be deduced about the character of any fireplace or chimney that passed through this room.

Evolution:

As previously mentioned at several points, the Brickett House appears to have been built around 1830. This date is borne out by both structural and stylistic evidence, already described. As a rural dwelling in a newly-settled and rather remote region, the Brickett House was remarkable in being constructed of brick. Brick construction linked the Brickett House to the most advanced farmhouses of longer-settled areas, where brick dwellings had

been rare until about 1830. The building was likewise remarkable for its reflection of the emerging Greek Revival style. Even in areas closer to the urban centers of New Hampshire, Greek Revival detailing was only beginning to emerge by 1830. In many cases, as in the Brickett House, Grecian features were intermixed with older federal-style details at this period. The Brickett House may also have incorporated stoves in its original heating arrangements. While stoves were widely advertised in New Hampshire and Maine newspapers by 1830, many conservative New Englanders did not yet trust them. Many, if not most, houses of 1830 relied entirely on fireplaces for heating and cooking. Though small in size, the Brickett House was remarkably sophisticated for its era.

As built, the house differed somewhat from its present appearance. Apart from the removal of the kitchen (northeast) fireplace and the northwest chimney, the dwelling had a somewhat different floor plan from that seen today. As mentioned, the central entry may have extended through the entire depth of the house. The staircase had earlier detailing and may have led to a visibly open attic area.

There is evidence that a doorway once opened from the parlor into the northwest first-floor bedchamber close to the western (exterior) wall of the house. The outline of the opening can be seen in the wall plaster. Corresponding marks on the north side of the partition between the two rooms are covered by a closet that is constructed of wooden sheathing and extends across that location in the bedchamber. It is possible that this door led only to a closet in the wall; on the other hand, the passageway between the two rooms may have been located here for some reason, and may have been moved to its more traditional central location at a later time.

There is also evidence of a former closet or cupboard in the northeast corner of the southeast sitting room, against the partition between that room and the kitchen. This evidence takes the form of termination of the baseboard at the edge of the cupboard closest to the door leading to the kitchen, and termination of the backband moulding around the nearby window casing. This closet was probably a dish cupboard or dresser that contributed to the use of the room for eating.

There is evidence, particularly strong in the balustrade, that the house was modernized about 1850. The same remodeling may have included changes to the chimneys, with the introduction of stoves where fireplaces may have existed earlier. Pending further study, we may assume that the second-floor bedchambers are original, but the enclosure at the head of the stairs may also date from the mid-century remodeling. Given the removal of some interior features in the twentieth century, it is now hard to trace all of the alterations that may have occurred at this general period.

The house passed into ownership of the United States Forest Service in 1918, after having left Brickett family ownership in 1877 and having passed through the hands of six different owners. The Forest Services has used the building for many purposes, including a ranger station, CCC headquarters, Appalachian Mountain Club hut, and Boy Scout camp. These varied uses have stimulated various twentieth-century changes to the house. Among these were the installation of a wide bench, some fifteen inches high, around the exterior walls of the parlor (perhaps leading to the closure of the door in the parlor wall, mentioned

above); installation of electricity and running water, accompanied by creation of a bathroom cut from parts of the kitchen and the northwest first-floor bedchamber; installation of new window sashes; construction of a broad porch around the north, west, and south sides of the house; and installation of central warm-air heating.

The southern (front) porch shown in old photographs was removed in 1961. The remaining porches, on the west and north elevations of the house, have recently been removed.

Condition:

The condition of the Brickett House was thoroughly and capably assessed by Bero Associates of Rochester, New York. Their findings and recommendations were presented in a *Condition Report and Stabilization Plan, Brickett Place, Evans Notch Ranger District, White Mountain National Forest.*

The condition of the Brickett House remains essentially as described in this report, except for the recent removal of the north and west porches. The authors of that report had assumed (pp. 3-4) that the house would be restored to its appearance of circa 1935 and that the existing porches would be retained and the missing porch reconstructed. The authors noted that "the porches can always be demolished if a Historic Structure Report determines that the principle historic significance of this building predates the porches."

The porches have now been removed from all elevations of the house. Further, archaeological excavations along portions of the north, west, and south sides have disclosed the footings beneath the underpinning stones of these walls. This exposure is important in gaining an understanding of the support of the brick walls and in developing a strategy for treatment of those walls.

In general, the exterior condition of the Brickett House is sound. The brick walls do, however, exhibit an unusual number of stress cracks. These have been made more obvious by removal of the porches, and can be seen to extend upward from many of the joints between underpinning stones. Many of these failures are probably old; some appear in historic photographs dating from the 1930s. As pointed out in the *Condition Report*, there is also an area above the windows to the right of the front doorway where a portion of the brick wall has moved outward beyond the wall plane, probably due to outward bowing of the wall plate above. The ridge of the roof in this area shows a slight bow, suggesting that the roof frame, unsupported by any interior partitions, has settled somewhat over the eastern half of the building.

A new roof of wooden shingles has been installed since the *Condition Report* was written in 1990. This roof is presently leaking in areas of the open attic on the east side of the house, and other leaks, temporarily hidden above the bedroom ceilings, may exist on the western side.

The basement of the house is damp. Some of this dampness may be attributed to condensation of water vapor in the humid summer air meeting cold surfaces. On July 22,

virtually every surface in the cellar had hanging droplets of condensation. Some of the dampness derives from migration of ground water into the excavated cellar. This may have been exacerbated by extensive fill, now exposed by archaeological testing, that occurred north of the house, probably in the 1930s. It is very likely also exacerbated by removal of the porches, which would have carried rainwater and roof run-off some distance from the cellar.

The condition of the interior surfaces is generally sound but dirty. The house has suffered from lack of routine cleaning and maintenance for some time. Where plaster has been damaged, it has either been left in poor condition (as in the central entry) or has been covered with Masonite or other sheet materials. Makeshift shelves and closets have been added here and there, creating a sense of clutter and diminishing the visual coherence of original detailing.

Since the *Condition Report* describes the general state of the house quite fully, I will reiterate only two recommendations of that study. First, the house deserves a full historic structure report that will expand upon and refine the findings of this brief field report. Second, an interpretive philosophy should be developed upon the basis of the historic structure report, and future changes to the house should be guided by that philosophy.

Treatment:

Treatments for many of the conditions of the Brickett House have been suggested in the *Condition Report and Stabilization Plan.* I would like to reiterate the point, made in that report, that all treatments of the building, as a federally-owned property listed on the National Register of Historic Places, should observe the **Secretary of the Interior's Standards for Rehabilitation**. These guidelines provide a sound approach to the complex issues surrounding a structure that has suffered the effects of time and neglect and that needs to be returned to productive use.

The ten **Secretary of the Interior's Standards for Rehabilitation** are:

1. A property shall be used for its historic purpose or shall be given a new use that requires minimal change to its defining characteristics.

2. The historic character of a property shall be retained and preserved. The removal of historic materials, or the alteration of features and spaces that characterize a property, shall be avoided.

3. Each property shall be recognized as a physical record of its time, place, and use. Alterations that create a false sense of historical development, such as adding conjectural features or elements taken from other historic buildings, shall not be undertaken.

4. Most properties change over time. Those changes that have acquired physical significance in their own right shall be retained and preserved.

5. Distinctive features, finishes, and construction techniques, or examples of craftsmanship that characterize a property, shall be preserved.

6. Deteriorated historical features shall be repaired rather than replaced. Where the severity of deterioration requires the replacement of a distinctive feature, the new feature shall match the old in design, scale and proportion, color, texture, and, where possible, in materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

7. Chemical or mechanical treatments, such as sandblasting, that cause damage to historic materials shall not be used. Surface cleaning, if appropriate, shall be undertaken by the gentlest means possible.

8. Significant archaeological resources affected by a project shall be protected and preserved in place. If such resources must be preserved, mitigation measures shall be undertaken.

9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize a property. The new work shall be differentiated from the old, and shall be compatible with the massing, size, scale, and architectural features so as to protect the integrity of the property and its surroundings.

10. New additions and adjacent or related new construction shall be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its surroundings would be unimpaired.

Regarding the stress fractures that have developed in the brick envelope of the Brickett House, probably the most noticeable defects of the building, I would urge that no quick action be taken. Thanks to the investigations of Dr. Wheeler, we now have some idea of the foundations of the house and of the soil types and moisture conditions that prevail immediately around the building. We know that the water table is low in the vicinity of the house, but we also know that the glacial till surrounding its foundations is capable of holding much roof water and that the cellar is wet. We know that the house had sheltering porches over the past sixty years, and we can deduce that these reduced the amount of water that accumulated next to the foundations. We do not know the full effect of the sudden reintroduction of large quantities of roof water next to the walls, especially during several summer-winter seasonal cycles. Before undertaking any ambitious programs to stabilize the foundations, we should learn how the house reacts to present conditions over a period of several seasons.

It is natural that a brick house will develop a few stress fractures over time. A brick wall is relatively inelastic in comparison to a wood-framed wall, and any motion in the foundations will quickly be reflected in the brickwork above. The use of soft mortars having only lime as a cement may reduce the probability of actual cracking of individual bricks during shifting of the walls but, as is readily seen in the Brickett House, severe shifting of the foundations will result in the cracking of some bricks as well as in the opening of mortar joints.

What remains unknown at the Brickett House is the extent to which visible cracking occurred in the early years of the building, and the extent to which these cracks may be moving now. It is even possible that the worst of these cracks resulted not from frost action, but from seismic activity. Several earthquakes affected the Chatham area since 1830. The largest recorded temblors in recent years occurred on December 20 and 24, 1940, with Tamworth as their epicenter. These quakes had a magnitude of 5.8 on the Richter scale, and occurred when the soil in Chatham may have been frozen around the footings of the Brickett House.

Until we know the behavior of the cracks in the Brickett House walls over several seasons, it would be imprudent to intervene with drastic measures. If frost penetrates well below the footings under the western end of the house, for example, it may be that no amount of attention to the footings themselves will prevent future shifting of the stones. If the cracks move during freeze-thaw cycles but return essentially to their original positions, it may be best to accept this motion as inevitable and merely do cosmetic patching of cracks with very soft lime-sand mortar which would have to be replaced from time to time.

I would suggest attaching monitors to various cracks in the walls of the house, noting their movement (if any) over several seasonal cycles before deciding on any remedial work on the building. Information about commercially-available crack monitors is attached to this report. A cheaper system that tells merely if a crack is moving (not how much or in what direction it is moving) involves the gluing of a glass microscope slide across the crack. If the slide breaks, the crack is active. Another method of monitoring the motion of cracks, as the *Condition Report* states, would be to repoint the open joints with soft lime-sand mortar and then note whether or not the re-filled joints open.

It should be noted, too, that replacement of cracked bricks in the walls could be difficult. The hand-moulded bricks used in the walls are no longer made anywhere in New England. Even if a supply of older hand-moulded bricks, fired in a scove kiln, could be located, it is likely that they would differ in size from those in the house. Many hand-moulded bricks formerly made in New Hampshire and Maine were water-struck rather than sand-struck (that is, their moulds were wetted rather than being dusted with sand), so the surface texture of bricks from other sources may differ considerably from that of the bricks in the Brickett House.

If the Forest Service wishes to undertake repairs to the brickwork, replacement of selected bricks, repointing, or other aspects of applied brick masonry, I would recommend the following craftsman/contractor:

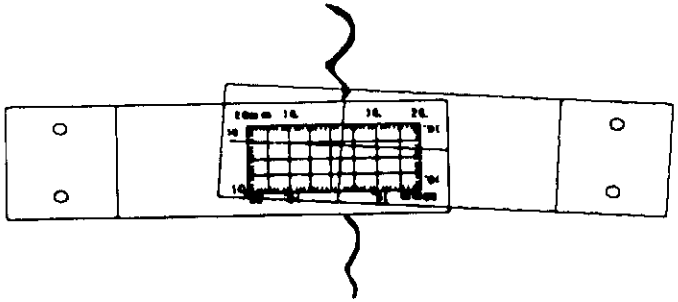
Richard Hossman
Royal River Construction, Inc.
P.O. Box 705
Gray, Maine 04039-0705
Tel.: (207) 657-4911

Mr. Hossman is not only a skilled restoration mason, but was the proprietor of the last New England brickyard to make bricks with hand moulds and scove kilns.

At present, there is only one urgent repair needed at the Brickett House: repair the roof leaks. Chronic leakage will damage the shingles, roof sheathing, rafters, attic flooring, and, ultimately, everything below the attic. It is important that the roof be inspected and the cause of water infiltration be identified and corrected. All other repairs can await further study.

Once a more detailed preservation philosophy is developed for the house, various conservation or restoration techniques can be devised for each category of interior surface that needs attention. There are methods, and specialists, for plaster repair and conservation, for woodwork reproduction, and for every other special trade that might be needed at the Brickett House. The New Hampshire Division of Historical Resources stands ready to offer any technical assistance within its power. The same is certainly true of the Maine Historic Preservation Commission.

AVONGARD CRACK MONITOR



This calibrated tell-tale is easy to install with screws, nails or epoxy (see Quick Set Epoxy below). It is waterproof and weather resistant so it can be used inside and outside. This monitor is direct reading to an accuracy of one millimeter for horizontal or vertical movement. This simple gage is made of durable acrylic plastic and has an easy to read red zero cursor. Included is a crack progress chart so anyone at the site can mark the position of the crossed cursor for later engineering evaluation. 1-1/4" x 5-3/4" x 1/4".

ACM (1 to 9 units) ..... $14.50 ea
(10 to 99 units) ..... $12.50 ea

SCRATCH PLATE CRACK MONITOR

This simple, easy-to-use "scratch pad" type crack monitor allows you to test expansion, contraction and general movement over any period of time (from one day to one year). This metal and acrylic plastic monitor measures even the most minute movement on a scribe plate. Install with epoxy (see Quick Set Epoxy below) or epoxy and screws. 1" x 5" x 1/2".

OE-1(1 to 9 units) ..... $12.50 ea
(10 to 99 units) ..... $10.50 ea

QUICK SET EPOXY

Blister package of quick setting (3-5 minutes at 75 degrees F) epoxy. Bonds to concrete, stone, wood, glass, metal. Contains no solvent and will not shrink. Can be used for installing crack monitor. We recommend one packet per monitor. 4.0 grams.

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