



Notes on the Evolution of Virginia Brickwork from the Seventeenth Century to the Late Nineteenth Century

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NOTES ON THE EVOLUTION OF VIRGINIA BRICKWORK FROM
THE SEVENTEENTH CENTURY TO THE LATE NINETEENTH CENTURY

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Much can be learned about the age, quality and history of a building through an examination of its brickwork. The numerous illustrations presented here are an attempt to demonstrate the changing character of brickwork styles in one state over a period of some two hundred and fifty years, and to contrast these styles, to some degree, with those of other regions of the nation. Virginia, with its rich legacy of brick architecture, is an excellent area in which to conduct such a study. Not only are some of the nation's oldest brick buildings located in Virginia, the varied cultural backgrounds of her settlers provides for a wide assortment of regional brickwork types. Brick was virtually the only masonry material available in the earliest period of settlement, thus a strong tradition of brick architecture developed at the outset.

It should be noted that many of the comments presented with the illustrations are broad generalizations. Exceptions to what is said can be found for any period and any region. Early brick masons were individuals, and as such were subject to quirks, whims and special influences just like anyone else. They had a freedom to express themselves through their craft that does not exist today. Most Virginia masons, however, veered little from the norm of the day, and their work is more standardized than one might expect. Thus, the more one observes Virginia buildings of the seventeenth, eighteenth and nineteenth centuries, the more the broad generalizations seem to hold up.

Although studies of brick manufacturing and local brickwork styles have been conducted, very little has been written concerning the evolution of American brickwork over a long period of time. Information is especially lacking for nineteenth century brickwork styles. As a result, many of the comments presented here are based on personal observation, rather than on documentary evidence. In most cases, the conclusions were arrived at by the simple correlation of dates and locations of various buildings with their brickwork styles.

It should be noted at the outset that individual brick dimensions can tell very little about the age of either the brick or the building in Virginia. Except for the small, so-called Dutch bricks (see Fig. 1) which occasionally are found in archaeological excavations of seventeenth century sites, nearly all bricks of the period discussed follow the same general proportions. The basis of these proportions can be traced to what Nathaniel Lloyd in his History of English Brickwork termed the "Flemish brick." The Flemish brick, Lloyd noted, was in use in England in the thirteenth century. With only minor variations its dimensions were 9" x 4 1/4" x 2 1/4", which are the same as most Virginia bricks of the seventeenth, eighteenth and nineteenth centuries. The proportions

of the Flemish-size brick were governed by two factors: (1) the largest amount of wet clay a man can comfortably lift with one hand and throw into a mold, and (2) the size and shape of rectangle that is most comfortably grasped with one hand while working a trowel with another.

Standards for brickwork sizes, or statutes, were set up in England from time to time, and these standards varied only slightly from the Flemish brick size. No official regulations requiring Virginia masons to adhere to size standards have been found, however. Occasionally early contracts or minutes will specify that bricks for an individual building be dimensioned according to statute, but the references are so scarce, and the statute size varies so little anyway, that practically no assistance for dating purposes is provided by such references. Most of the minor variations in dimension and proportion resulted from a combination of variations in individual mold size, clay quality, and shrinkage from firing, not from any changes in statutes or guild regulations that can be correlated with specific dates. Practically the only method one can use to assign a general period to an individual brick is through identification of its process of manufacture, and that would apply only for the nineteenth century. Much more useful information for dating purposes is derived from a brick's context rather than from the brick itself.

Enough has already been written to dispel forever the oft-heard claims of early buildings being built of bricks imported from England. It would only be repetitious to present the arguments against these claims in this article. It is sufficient to say that no one has yet found convincing documentary evidence of a Virginia building being erected of bricks imported from England. The author must admit, however, that he would be delighted with the discovery of such evidence.

All photographs are from the archives of the Virginia Historic Landmarks Commission, and were taken by its staff between 1968 and 1974.

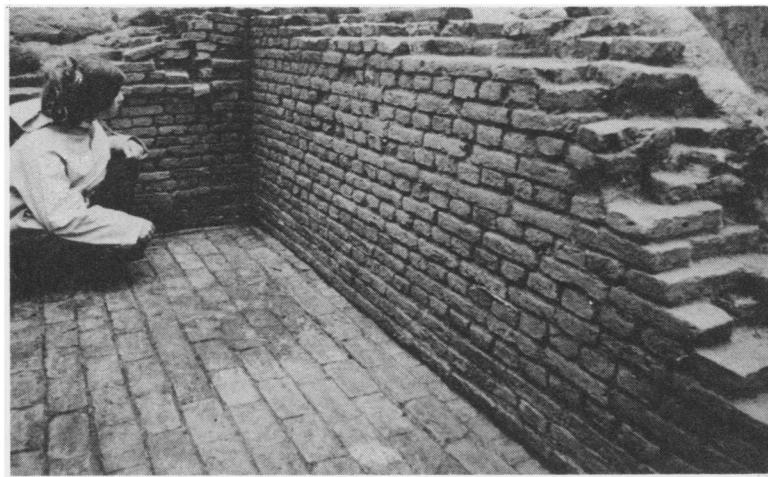


Fig. 1 (left) Dutch bricks from the Hallowes archaeological site, Westmoreland County, Va. (c. 1650)

These small bricks, found in a chimney base of a mid-seventeenth century post house, are what are referred to as Dutch bricks. They measure 6 1/2" x 3" x 1 1/2", have a yellowish color, sandy texture, and are poorly fired. Such small yellow bricks are frequently found in seventeenth century sites, although no standing structure built with them survives in Virginia. Dutch bricks are the one variation in brick size that can serve as a general dating guide.

Richard Neve's Builder's Dictionary (1736 edition) describes Dutch bricks in England thusly: "I am informed that they are 6 1/4n. long, 2 1/2 broad, and 1 1/4n. thick; another tells me they are 6n. long, 3n. broad, and 1n. thick;... They are of a yellowish color.... They are commonly used here in England, to pave Yards and Stables withal, and they make a durable Pavement, and being laid Edge-wise, look handsomely, especially if laid Herring-bone fashion."

Fig. 2 (right) Helmet Site, James City County, Va. (mid-seventeenth century)

The lining of the cellar of what archaeological evidence indicates was a mid-seventeenth century post house is laid in English bond with Dutch-size bricks. The individual bricks measure 7 1/2" x 3 1/2" x 1 1/2", and are made of red clay rather than the more usual yellow clay.

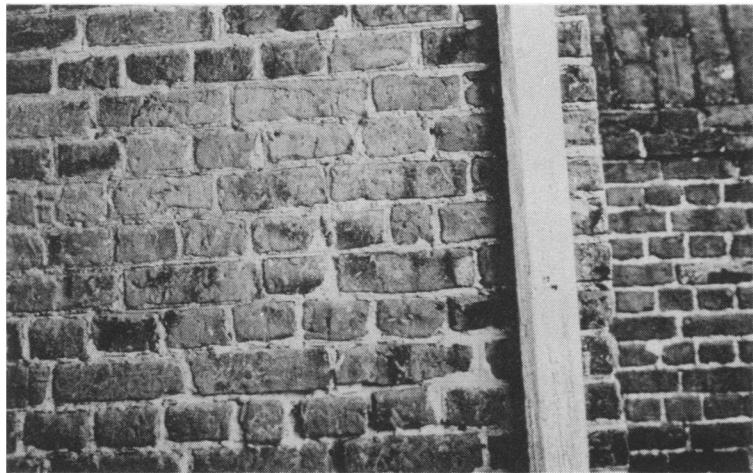


Fig. 3 (left) Wishart House, Virginia Beach, Va. (c. 1680)

In Virginia, English bond, or courses of stretchers (sides of bricks) alternating with courses of headers (ends of bricks) was used mainly during the seventeenth century. Whole walls of English bond are rarely seen on buildings erected after 1710's.

Note in the example illustrated that the courses are not consistently all headers or all stretchers; corrections with odd-sized bricks were often necessary to prevent the vertical joints from aligning. Glazed headers occur in English bond only randomly, although several buildings survive with glazed header courses. The walls of the Wishart house are laid entirely in English bond.

Fig. 4 (right) Jamestown Church Tower, James City County, Va. (c. 1647)

The church tower is one of the earliest datable examples of English bond in Virginia. Note that it is used both above and below the ovololo water table. Typical of seventeenth century English bond the tower employs from ten to fifteen percent glazed headers. The individual brick size is 8 3/4" x 4" x 2 1/4".

The illustration was made during a recent archaeological investigation of the tower's foundations.

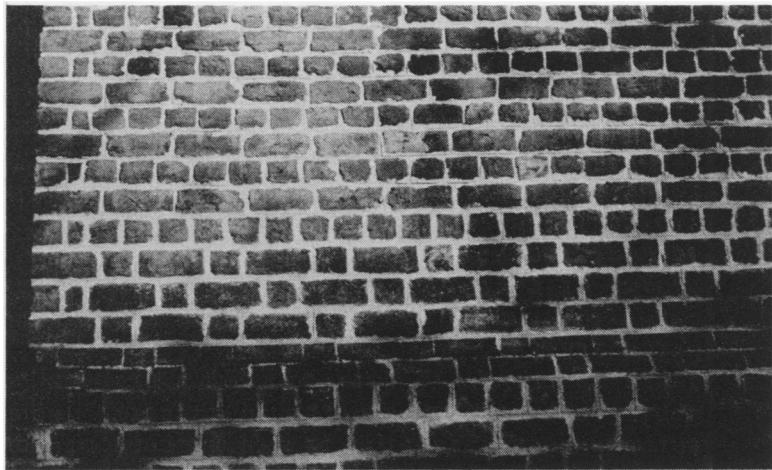
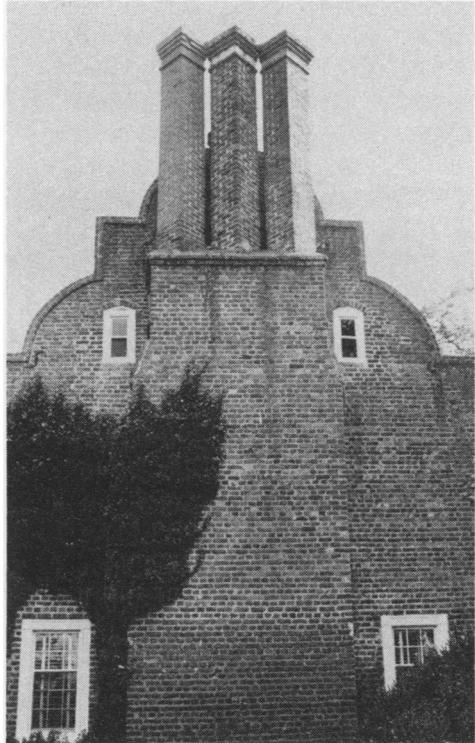


Fig. 5 (left) Bacon's Castle, Surry County, Va. (c. 1660)

This famous Jacobean-style manor house is Virginia's finest example of seventeenth century brick architecture. The building is laid entirely in English bond with scattered glazed headers. The curvilinear gable ends are a unique survivor in this country, although others, such as in Province House, Boston, are known to have existed. Rubbed or gauged work is not used, it is rarely found in buildings erected before 1700.

Fig. 6 (right) St. Peter's Church, New Kent County, Va. (nave erected 1701)

English bond is employed in the nave of St. Peter's both below and above the water table, although three courses of Flemish bond appear just above the water table. One might conclude that the mason was dubious about using a "modern" bond and lapsed back into the more familiar English bond as his work progressed. The bricks are among the largest in any Virginia building and measure, 9" - 9 1/4" x 4 1/2" x 4". Most colonial bricks are rarely more than three and a half inches high, although the nine inch length is not uncommon.

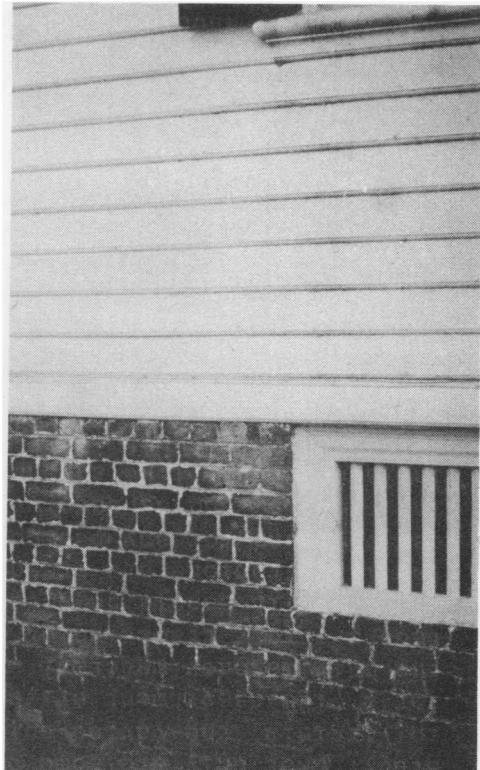
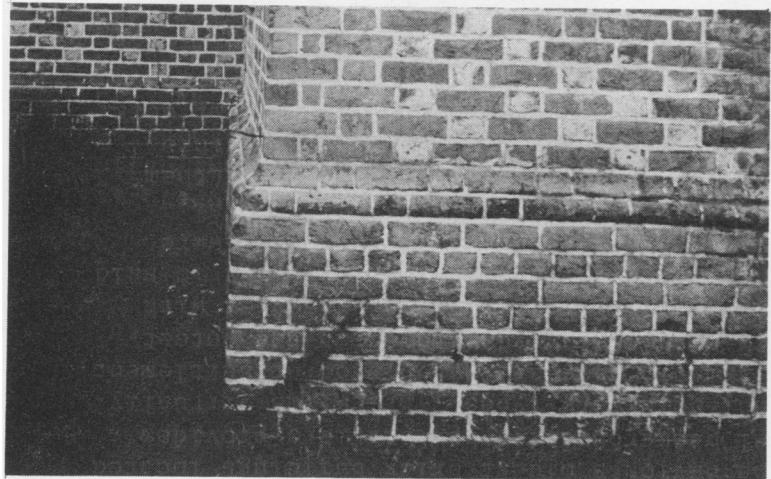


Fig. 7 (left) Farnham Church, Richmond County, Va. (1737)

From the mid-seventeenth century to the mid-eighteenth century English bond usually was retained below the water table. It was preferred in the foundation area primarily because of its strength -- it is some twelve percent stronger than Flemish bond. Even when English bond was used in conjunction with glazed-header Flemish bond, the unglazed headers were turned outward.

Fig. 8 (right) Clifton, Cumberland County, Va. (c. 1750)

English bond was used just as consistently for the foundations of frame buildings as it was for brick buildings, although Flemish bond is more often found in the foundations of finer frame houses dating from the mid-eighteenth century on.

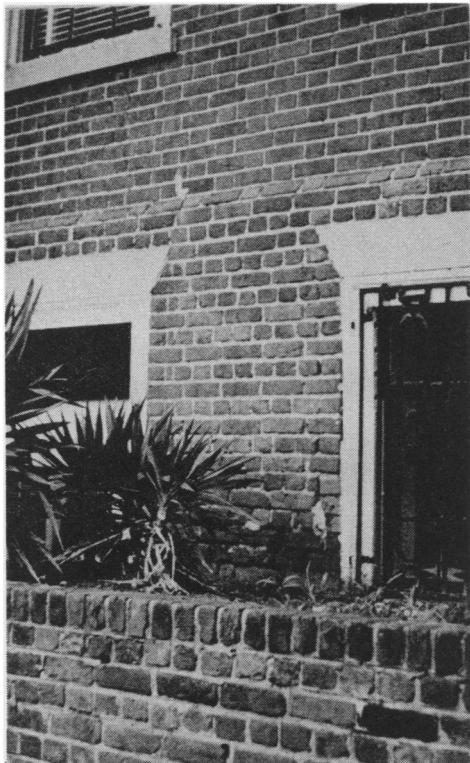


Fig. 9 (left) Hancock-Wirt-Caskie House, Richmond, Va. (1808-09)

This Richmond townhouse exhibits a very late use of both English bond and a water table. Although neither feature was utilized much after the 1780's, its use here may indicate that the building was erected by a conservative or elder mason. The English bond in the retaining wall is less unusual, however. It was the preferred bond for retaining walls throughout the eighteenth and most of the nineteenth centuries.

Fig. 10 (right) Reconstructed seventeenth century Dutch style farmhouse, Van Cortland Manor, New York

The wall of this reconstructed house is laid in Dutch Cross bond, also called English Cross bond, which is a variant of common English bond. In cross bond the stretchers are not vertically aligned with one another in every other course as in common English bond. Instead, each stretcher is centered with vertical joints in the stretcher courses above and below. This manner of laying bricks produces continuous diagonal stepped patterns in the joints throughout the wall. Cross bond was favored among Dutch masons and was widely employed in the colonial buildings of New York. No early example of cross bond has been found in Virginia.

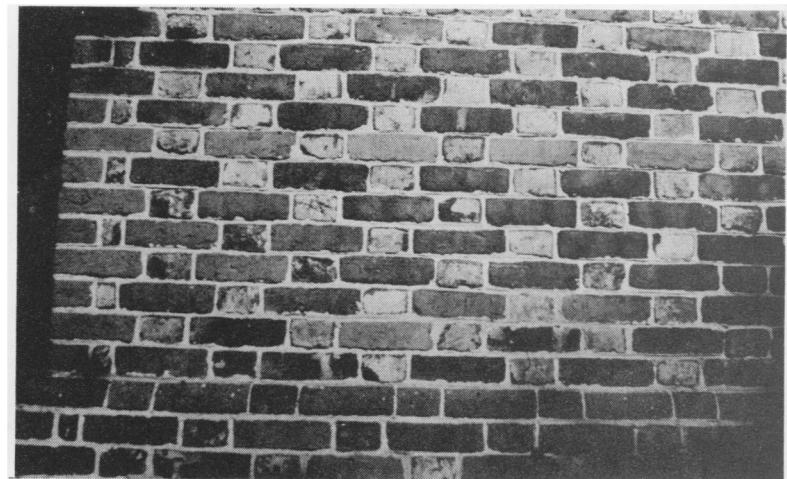
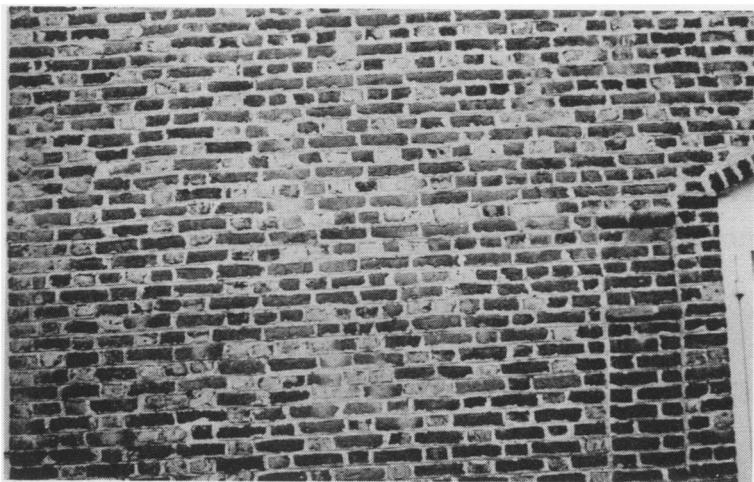


Fig. 11 (left) Yeocomico Church, Westmoreland County, Va. (1706)

On several Virginia buildings, particularly certain ones erected around 1700, little attempt was made for a consistent bond throughout the wall. The result was a confused pattern, sometimes called "haphazard bond." In the south wall of Yeocomico Church English and Flemish bonds are run together, and in several courses consistency breaks down entirely. Alternating glazed headers even appear in some of the header courses. Note the crude pilaster to the left of the doorway.

Fig. 12 (right) Ware Church, Gloucester County, Va. (first quarter 18th century)

Flemish bond (headers alternating with stretchers in every course) was used in Virginia from the mid-seventeenth century through the mid-nineteenth century. The colonial mason made his stretchers fall on center with the headers above and below them by placing a small brick bat, or queen closer near one end of every course. In nineteenth century Flemish bond king closers (a brick approximately two-thirds the length of a stretcher) gained in favor over queen closers. King closers fall at the corner of a building rather than one header in as with queen closers.

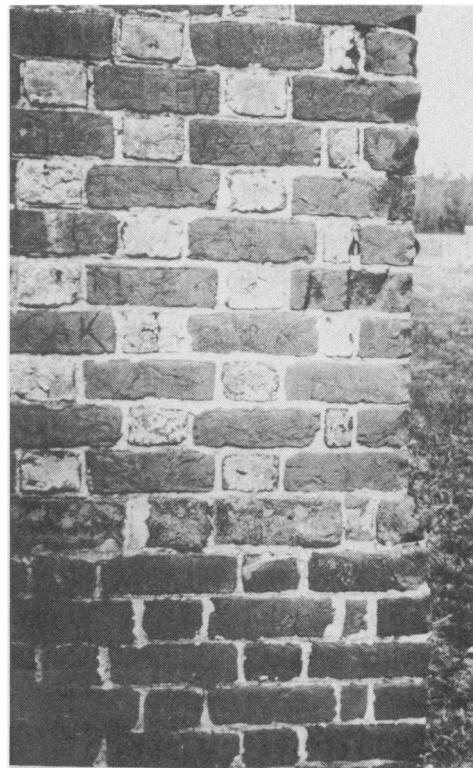
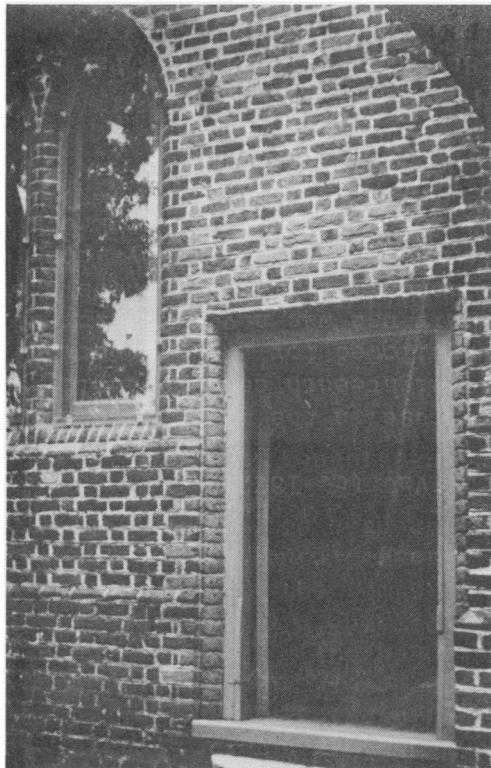


Fig. 13 (left) St. Luke's Church, Isle of Wight County, Va. (mid-seventeenth century)

Flemish bond was introduced into England from the Continent around 1600, and it was being used in Virginia by the mid-seventeenth century. Except for its buttresses, St. Luke's Church is laid entirely in Flemish bond (even below the water table). The church may represent the first instance in English building where true Gothic architecture and Flemish bond were combined. The building illustrates how conservative the colonists remained architecturally, yet how up-to-date they were in building techniques.

Fig. 14 (right) Pungoteague Church, Accomack County, Va. (1738)

Glazed or vitrified headers were employed in Virginia Flemish bond from the late-seventeenth century to the mid eighteenth century. The early kilns as well as the temporary clamps were fired with oak and the potash in the oak caused a chemical reaction in the clay which resulted in the blue-gray glaze. (The headers were glazed because they were placed closest to the fire.) The glazed ends were selected to face outward in the wall to emphasize the checkered effect of Flemish bond. The example illustrated is interesting for its use of glazed queen closers, as well as for its use of unglazed headers and closers below the water table.

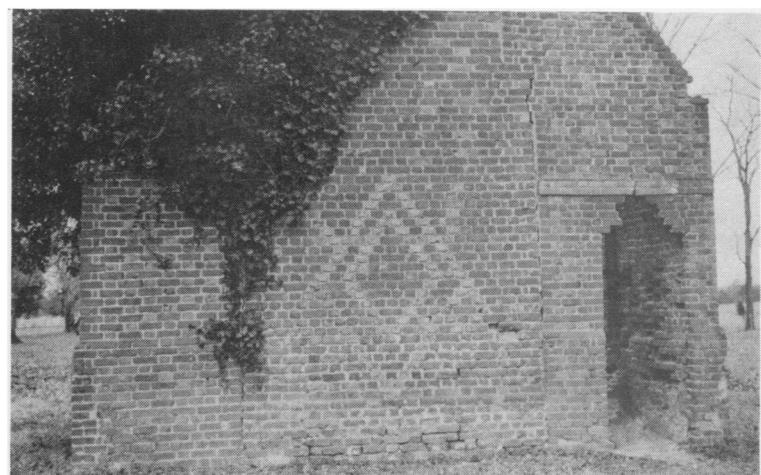
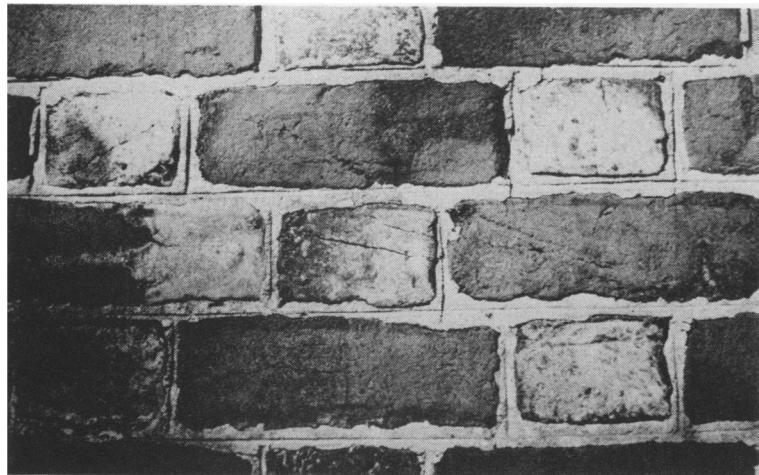


Fig. 15 (left) St. John's Church, King William County, Va. (1734)

Colonial bricks were formed in wooden molds which were dusted with sand to prevent the damp clay from adhering to the wood. This gave the bricks a granular face. The inconsistency of both the clay quality and the firing heat caused the bricks to have rough, irregular edges. As a consequence it was difficult to have neat, even mortar joints. To cause his jointing to appear more regular the colonial mason used a steel rod and straight-edge to tool both the horizontal and vertical joints with a thin groove. These grooved joints are termed scored, rodded, or sometimes grapevine joints. They are found in most all but the roughest colonial brickwork.

Fig. 16 (right) Malvern Hill, Henrico County, Va. (late-seventeenth century)

In Virginia, glazed headers were used primarily to emphasize the checkered effect of Flemish bond; only rarely were they used to form special designs such as diapering, herringbone, dates or initials. The two concentric diamonds in the chimney of the ruins of Malvern Hill form one of the few early examples of diapering in the state. Glazed patterning is much more common in Maryland and New Jersey.

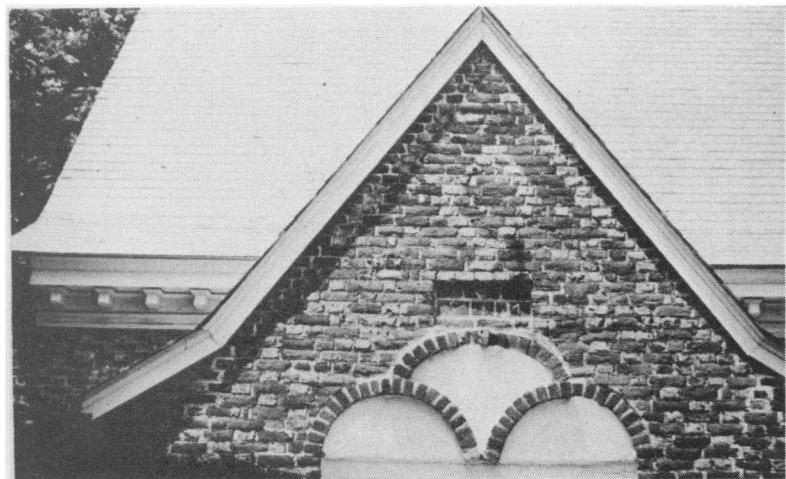


Fig. 17 (left) Yeocomico Church, Westmoreland County, Va. (1701)

The gable of Yeocomico's porch chamber employs a diamond of glazed headers, as well as a line of glazed headers following the edge of the gable. This latter feature is relatively common on pre-Georgian Virginia buildings. Note the unique trefoil-like motif above the doorway and the inscribed brick panel between the trefoil and the diamond.

Fig. 18 (right) Pear Valley, Northampton County, Va. (c. 1660)

The brick gable of Pear Valley illustrates the use of chevroning, or parallel rows of glazed headers following the line of the gable. Chevroning is especially prevalent on the Delmarva peninsula where Pear Valley is located. The use of a corbeled cornice stop is a typical seventeenth century feature, and is rarely employed after the 1720's.

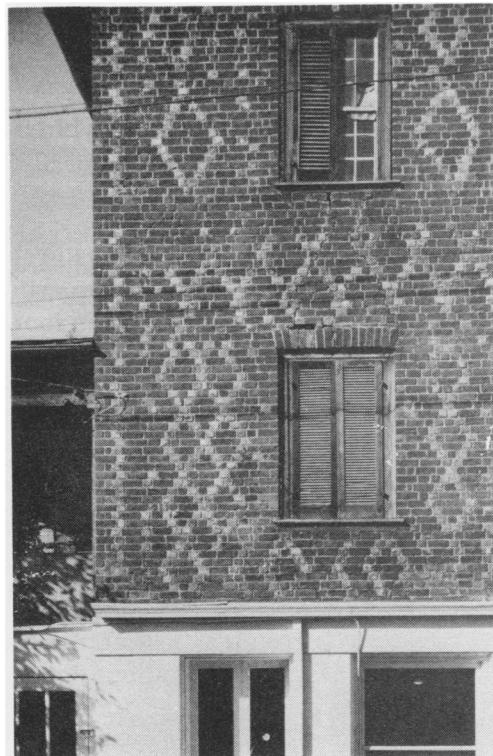
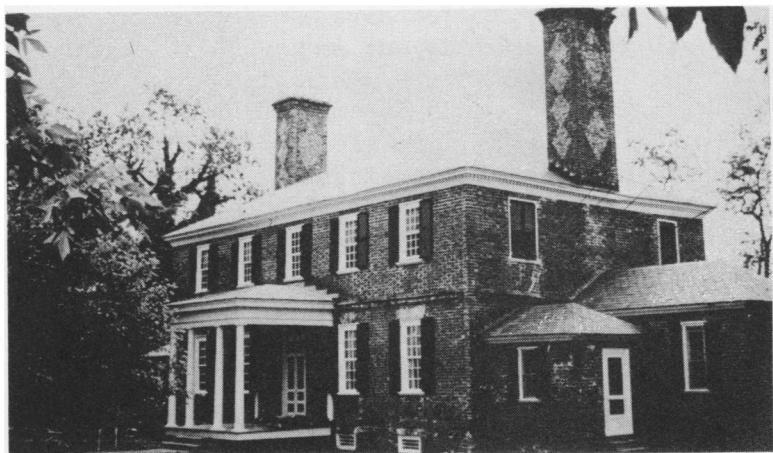


Fig. 19 (left) Brooke's Bank, Essex County, Va. (c. 1751)

The chimneys of Brooke's Bank exhibit a rare mid-eighteenth century use of diapering. Instead of the more normal outlining of the diamond with glazed headers, the entire diamond is glazed.

The word diaper meaning a square or diamond shape is derived from Ypres, the Belgian city which during the Tudor period exported to England a special square-cut cloth. The cloth was called d'Ypres and the term was eventually corrupted to diaper appertaining to square or diamond shapes.

Fig. 20 (right) Alexander Withrow House, Lexington, Va. (c. 1790)

Diapering is sometimes found on late-eighteenth century and early-nineteenth century houses in the Shenandoah Valley, in the western part of the state. Introduced by settlers from Pennsylvania it also is found on a number of houses of the same period in western North Carolina and the midwest.

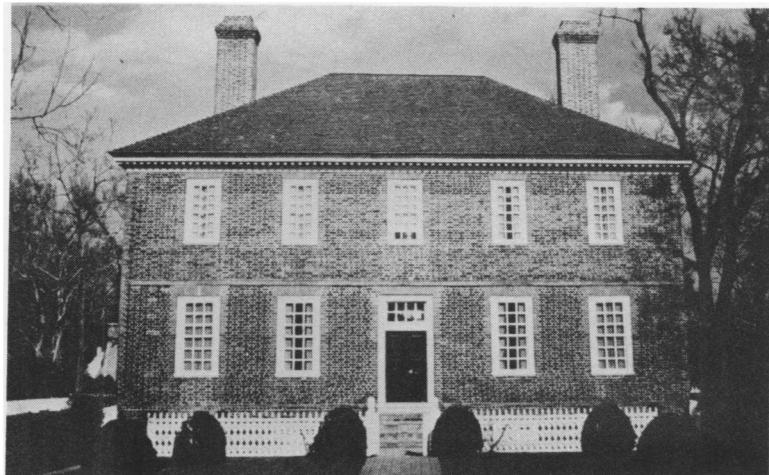
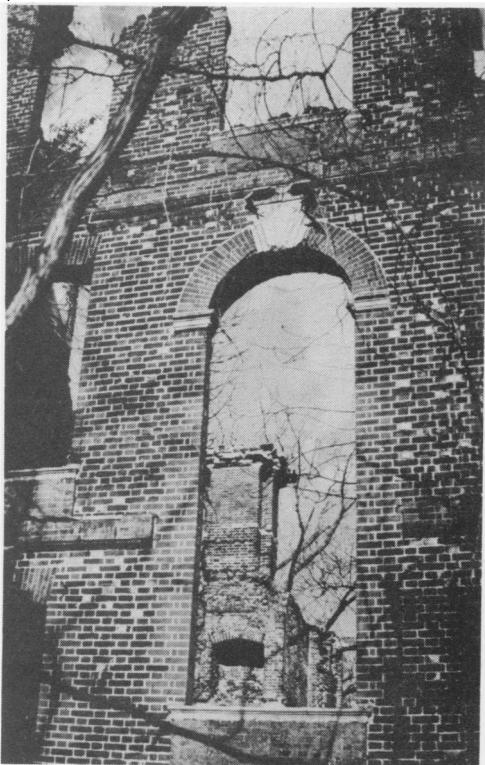


Fig. 21 (left) Rosewell, Gloucester County, Va. (begun 1726)

Some of the finest examples of colonial Flemish bond in Virginia, most notably Rosewell and Christ Church, Lancaster County, employ only scattered glazed headers. This gives the wall a sparkling quality as opposed to the flat effect of a wall devoid of glazing. Rosewell is the only Virginia building to employ panels of rubbed brick, or aprons, beneath the windows, a device common on Queen Anne period buildings in England. (The illustrated section of Rosewell's north wall was largely destroyed in the summer of 1972).

Fig. 22 (right) George Wythe House, Williamsburg, Va. (1752)

Glazed headers ceased to appear in most Tidewater Virginia brickwork by the mid-eighteenth century. An explanation for this phenomenon is that by the 1750's most of the stands of oak, especially around Williamsburg, had been depleted, and other woods such as pine had to be used to fire the brick kilns. Instead of the beautiful blue-gray glazes, pine gave headers only a smutty look which was considered undesirable. As a result the tendency was towards a more even-colored wall with the headers being selected to match the stretchers. The Wythe House in Williamsburg and Carter's Grove, James City County (1750-55), are early examples of major houses having no glazed headers. Concurrently, glazed headers passed out of fashion in England by the 1750's.

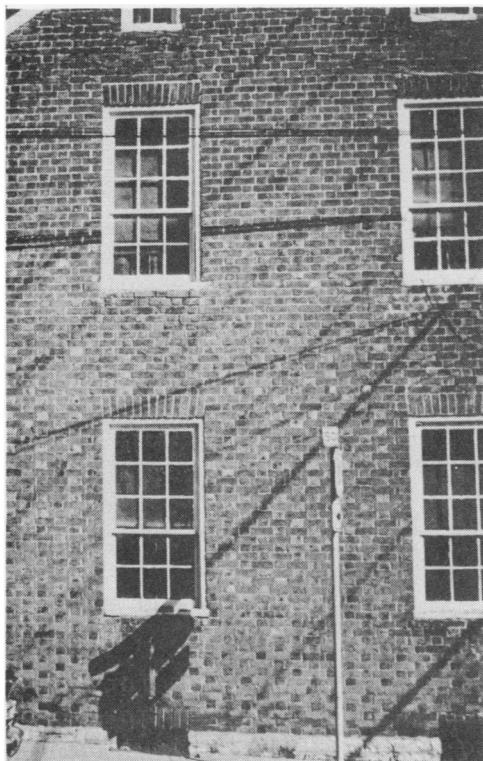


Fig. 23 (left) Morrison House, Harrisonburg, Va. (c. 1822)

While glazed headers generally disappear from use in the mid-eighteenth century, they reappear in some isolated late-eighteenth century buildings. Second growth oak in eastern Virginia allowed for the production of some glazed bricks in this period, but their use was never widespread. Most examples of post-Revolutionary Flemish bond with glazed headers are found in the Shenandoah Valley. The Morrison House, which employs consistent glazing up to the second floor level is one of the latest known examples.

Fig. 24 (right) House at 421 South Second Street, Philadelphia, Pa. (c. 1790)

Flemish bond with glazed headers was used consistently in and around Philadelphia into the early-nineteenth century. The persistence of this tradition accounts for glazed work being found on buildings erected by settlers of Pennsylvania origin in Virginia's Shenandoah Valley. Compared with the glazed-header Flemish bond found in the Tidewater section of Virginia, Pennsylvania brickwork has a more regular, almost mechanical appearance. This regularity resulted from improved brick manufacturing processes that were available in large cities.

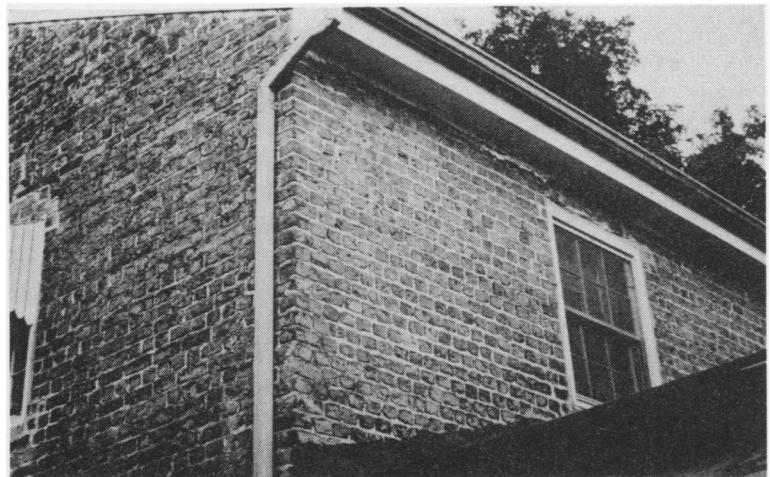
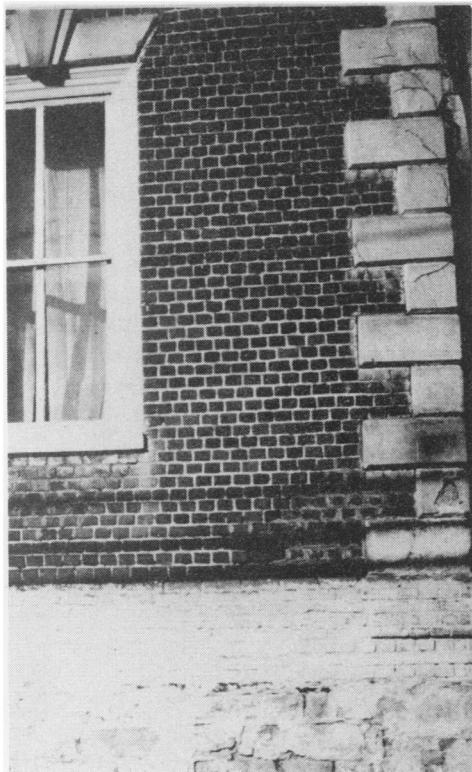


Fig. 25 (left) Williams Ordinary, Dumfries, Va. (c. 1765)

The facade of Williams Ordinary is one of the less than a half-dozen known examples of header bond in Virginia. As its name implies, header bond employs headers consistently in every course. Batty Langley regarded header bond as "especially beautiful."* In America, header bond is common only in Maryland where numerous examples are found. Most of the finer townhouses of Annapolis and Chestertown have header bond facades with the remaining walls in either Flemish or English bond. Being located in a Potomac River port town, Williams Ordinary may have been erected by Maryland masons.

*Langley, Batty: London Prices (London, 1749).

Fig. 26 (right) Old Princess Anne County Jail, Kempsville, Va. (c. 1789)

Header bond may have been employed in this isolated and late example to give an impression of strength to a place of detainment. The side and rear walls are very late examples of English bond.

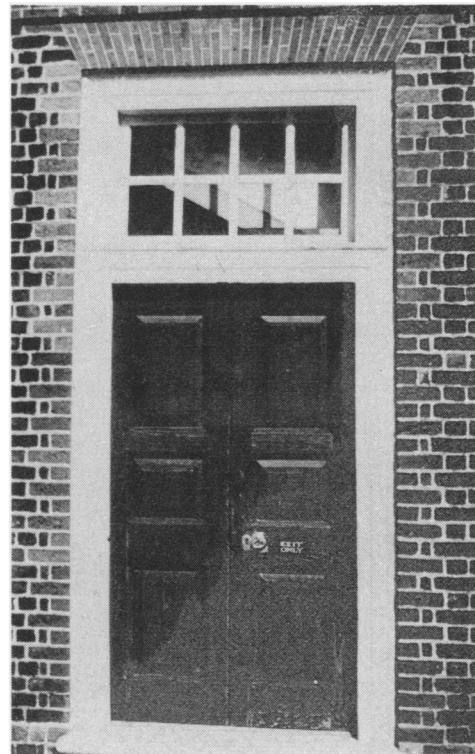
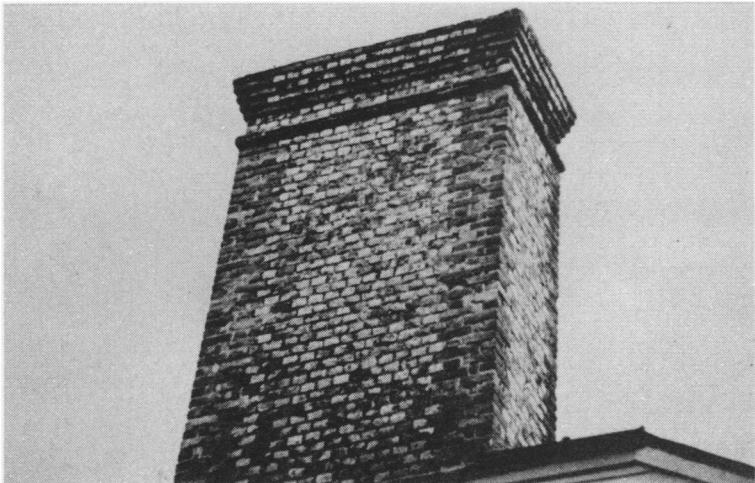


Fig. 27 (left) Marmion, King George County, Va. (c. 1725)

This distinctive chimney stack is a unique example of all-glazed header bond. The blue-gray mass of the glazed headers is set off by the light-red rubbed brick corners. The corbeled cap with string course is a typical finish for colonial chimney caps.

Fig. 28 (right) George Wythe House, Williamsburg, Va. (1752)

Because handmade colonial bricks had irregular edges, obtaining sharp, even lines at jambs and corners offered a problem. The problem was solved with the use of rubbed bricks. Rubbed bricks were made from less thoroughly burned bricks called samels. The samels were a lighter red than ordinary face bricks and were rubbed very smooth with either a hard brick or stone. When set in corners a side and end of the samel had to be rubbed to produce the desired sharp edge. Note the lighter color of the rubbed bricks framing the Wythe House doorway.



Fig. 29 (left) Carter's Grove, James City County, Va. (1750-55)

Rubbed bricks cut and rubbed into special shapes to fit in either flat, segmental, or semi-circular arches are called gauged bricks. Fine gauged work is a hallmark of colonial Virginia masonry; it illustrates the high level of craftsmanship achieved by the colonial bricklayers. Properly laid gauged flat arches or jack arches were always composed of wedge-shaped bricks with the vertical joints aligned with radii from a common point. The Carter's Grove jack arches are two stretchers deep, and feature two queen closers in every other course. The more standard jack arches of the Wythe House follow a stretcher/header - header/stretcher pattern.

Fig. 30 (right) Tower Hill, Northampton County, Va. (c. 1746)

This damaged jack arch illustrates that the arches actually supported only the face brick, and concealed a wooden lintel which supported the main part of the wall over the opening. Deep jack arches are rare on basement windows and are employed only on better quality buildings. Usually basement windows are topped by a simple rowlock segmental arch. When gauged segmental arches are employed in basements they are rarely more than a stretcher deep. Tower Hill has the high water table typical of colonial Virginia plantation houses; the scale figure stands 6'2".

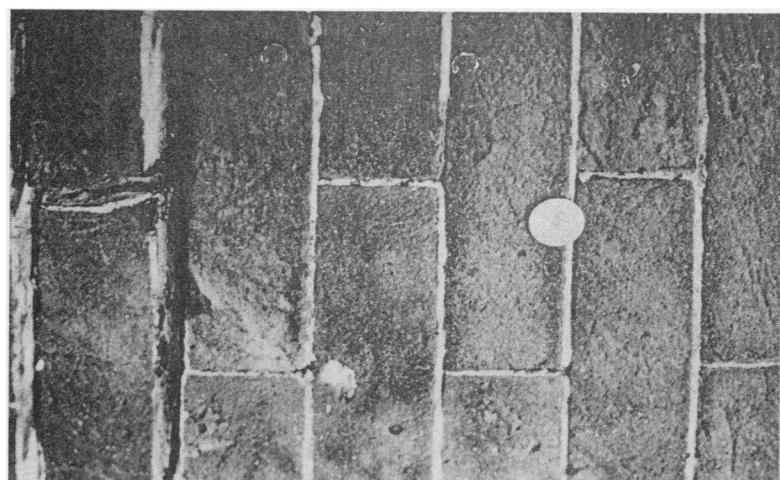


Fig. 31 (left) Indian Bank, Richmond County, Va. (early-eighteenth century)

The jack arch above the main entrance of this Rappahannock River plantation house features a scrolled soffit that is unique in Virginia. Scrolled soffits of this type are relatively common in England, especially on buildings of the Queen Anne period, but are exceedingly rare in America. The c. 1732 section of Holly Hill in Anne Arundel County, Maryland has fine examples of scrolled soffits.

Fig. 32 (right) Detail of jack arch from a late-18th century house, Accomack County, Va.

This detail of a fallen jack arch, with a 25¢ coin for scale, illustrates the thinness of the mortar joints in gauged work. The width of gauged work joints varies from $1/16"$ to $1/8"$. The joints were made with a white lime putty, or a mortar with little or no sand. The joints of gauged work are often called buttered joints.

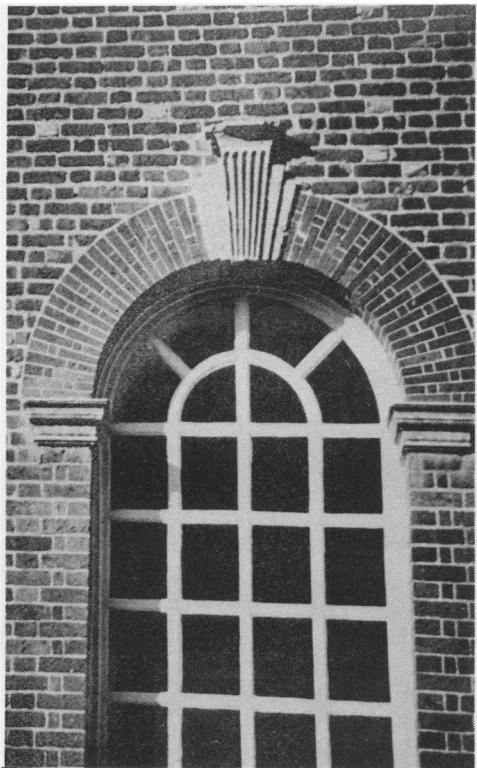


Fig. 33 (left) Christ Church, Lancaster County, Va. (1732)

The semi-circular arches of Christ Church illustrate gauged brickwork at its best. The fine brickwork is emphasized by the stone keystone and imposts. Detailed instructions for laying out gauged arches were available to the colonial mason in English handbooks such as William Halfpenny's The Art of Sound Building (London, 1725).

The brickwork of Christ Church is virtually identical to that of Rosewell, (Fig. 21) suggesting that the two buildings had a common mason.

Fig. 34 (right) Records Office, Williamsburg, Va. (1748)

Gauged bricks were often cut or molded for use in architectural trim, primarily frontispieces. The lack of good building stone in the Tidewater section of Virginia encouraged the use of such elaborate brickwork details. The Records Office pediment illustrates that the colonial masons were quite capable of producing correct academic details from the materials available.

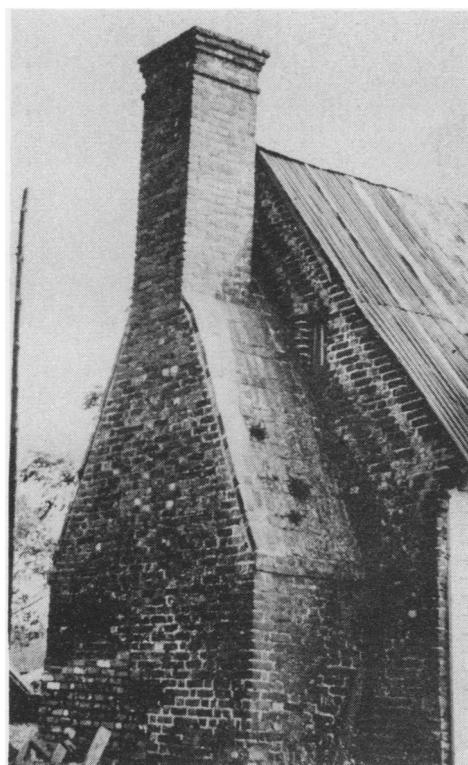
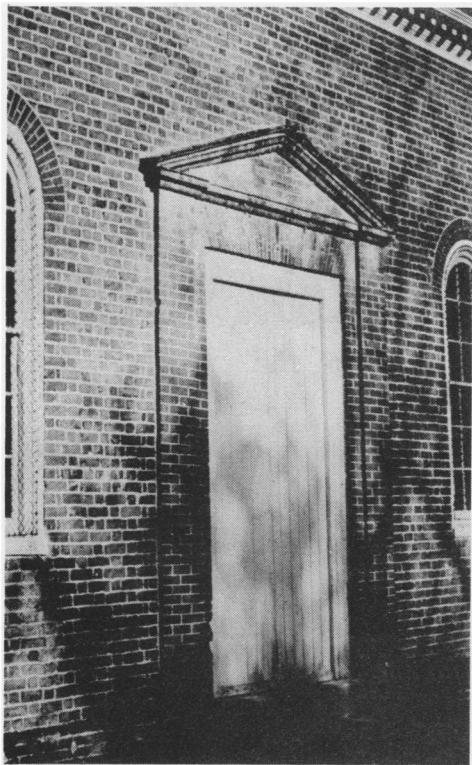


Fig. 35 (left) Lamb's Creek Church, King George County, Va. (1769-70)

The beautiful south entrance of Lamb's Creek Church shows a colonial gauged-brick frontispiece at its most refined. Pilasters and pediment have been reduced to their barest essential elements without being overly simplified. The doorways of Christ Church, Lancaster County, on the other hand, feature richly molded pediments, broken cornice, dentils, pulvinated frieze and molded architrave.

Note the lack of any glazing in Lamb's Creek's walls. As previously noted, glazing had passed out of fashion by the third quarter of the eighteenth century.

Fig. 36 (right) Pear Valley, Northampton County, Va. (c. 1660)

Because of its resistance to heat, brick has always been an ideal material for fireplaces and chimneys. The pyramidal chimney on Pear Valley is one of the earliest of Virginia chimney forms; it is rarely found on buildings erected after the 1710's. The steeply sloped haunches or weatherings are tiled, i.e. covered with bricks with the flat faces slanting to form a smooth, weather-resistant surface. The frieze between the corbeled cap and the string course shows traces of its original white plastering which was a common treatment for colonial chimney caps.

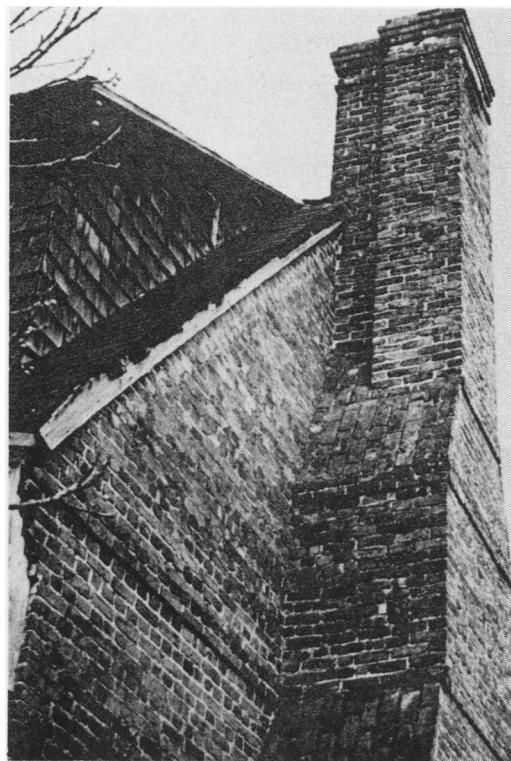
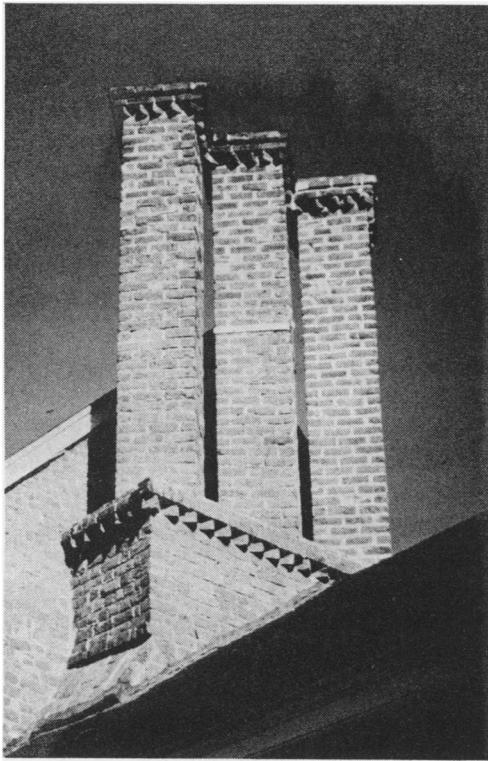


Fig. 37 (left) Winona, Northampton County, Va. (late-seventeenth century)

Winona and Bacon's Castle possess the only surviving sets of seventeenth century diagonally-set chimney stacks in America. The base and caps of Winona's stacks are ornamented with hound's tooth courses which are made of projecting corners of bricks. Hound's tooth (also called mouse tooth) courses were employed occasionally on pre-Georgian buildings but rarely on later ones. They return to fashion in the early-nineteenth century, however.

Fig. 38 (right) Wishart House, Virginia Beach, Va. (c. 1680)

The exterior-end chimneys of the Wishart House use a T-shaped stack which was a common form for chimney stacks from the late-seventeenth century through the 1730's. T-shaped stacks occur both on exterior and interior-end chimneys. Note the characteristic use of two sets of tiled weatherings. The white plaster band below the cap is a common decoration for early colonial chimney caps. The string courses used to frame the weatherings are rarely seen on buildings erected after the 1710's.

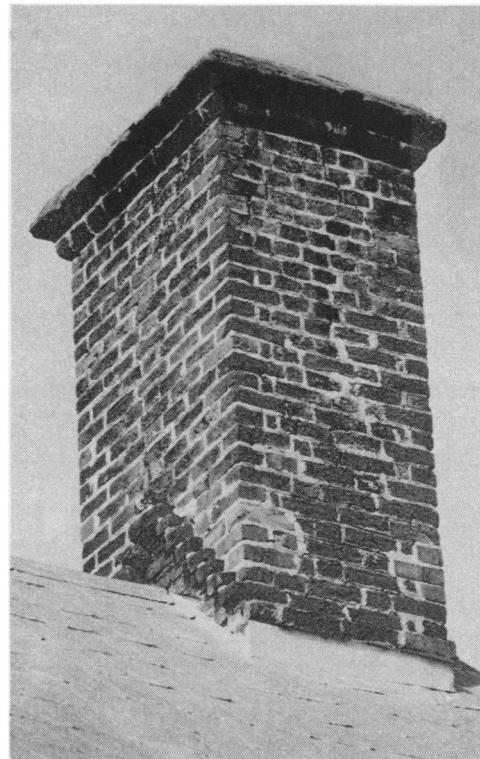


Fig. 39 (left) Liberty Hall, Essex County, Va. (third quarter of the 18th century)

This chimney, with its two sets of tiled weatherings, rectangular stack, corbeled cap, and Flemish bond, is the classic chimney type for simple colonial Virginia dwellings from the 1720's to the 1780's. On such chimneys the stack usually is set away from the roof ridge so that the chimney's outer face is one unbroken plane.

Fig. 40 (right) Roberts House, Isle of Wight County, Va. (mid-eighteenth century)

Although many finer colonial houses have molded brick chimney stacks, the profile of the simple moldings on the example illustrated are unusual. The lowered roofline of the Roberts House reveals the projecting corbeled arch which helped secure the roof against the chimney. It also served as a waterproofing feature.

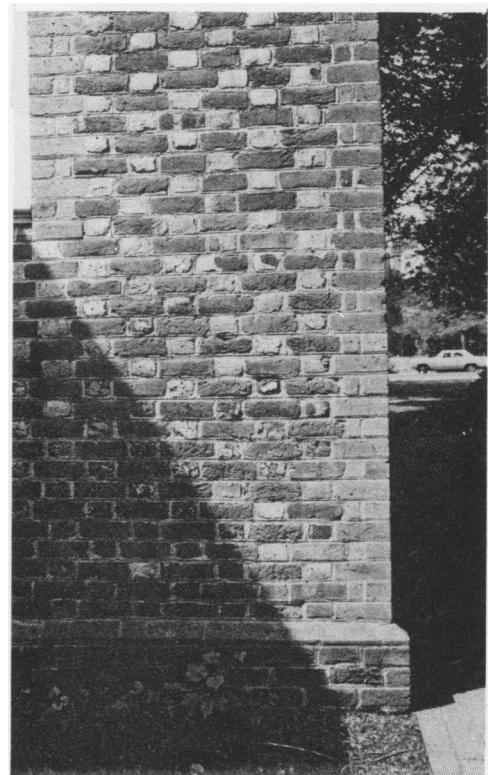
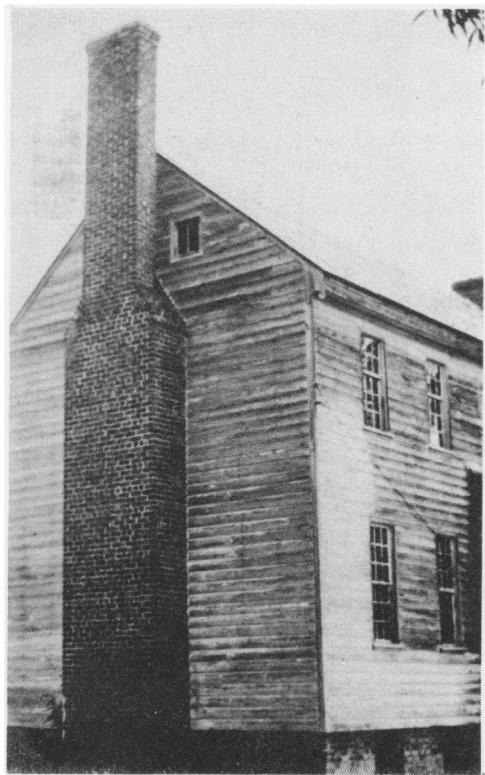


Fig. 41 (left) Ellis House, Surry County, Va. (c. 1800)

Like bonds and other motifs, the chimney forms of Virginia buildings change considerably after the Revolution. The more standard exterior-end chimney of the early and mid-nineteenth century has a straight-sided breast and only one set of weatherings. The weatherings are usually always stepped rather than tiled. The stack is a narrow rectangle rather than the more square one of the colonial period. Three and five-course American bond was preferred over Flemish.

Fig. 42 (right) Hanover County Courthouse, Hanover Court House, Va. (c. 1735)

The foundations of colonial brick buildings were thickened on the exterior, and the top of the projection, or water table, was capped with shaped bricks designed to shed moisture. The standard finish for a water table was one course of beveled rubbed brick laid in Flemish bond as on the Hanover Courthouse. Variations employ quarter-round and ovolو bricks.

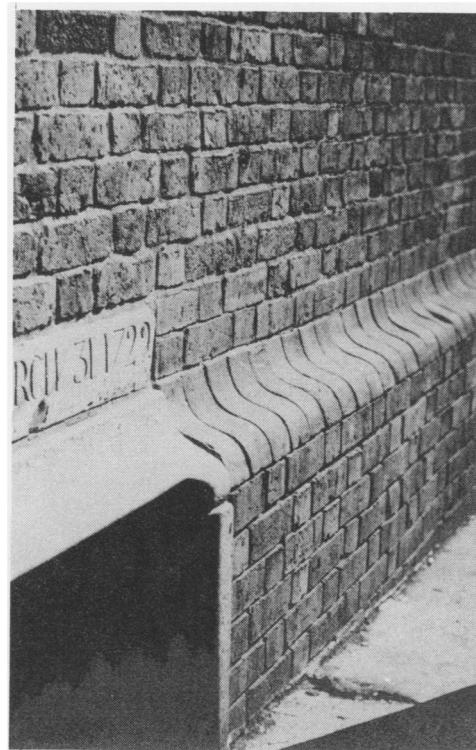


Fig. 43 (left) Carter's Grove, James City County, Va. (1750-55)

The molded pedestal-type water table on Carter's Grove is characteristic of formal plantation mansions. The example illustrated is distinctive for being built up with three courses rather than the more usual two.

Fig. 44 (right) Old South Meeting House, Boston, Mass. (1729)

Water table bricks on Virginia buildings were always laid horizontally. New England water tables, on the other hand, generally were composed of specially molded bricks laid vertically as on the Old South Meeting House. A standard shape for colonial New England water tables was an ogee curve.

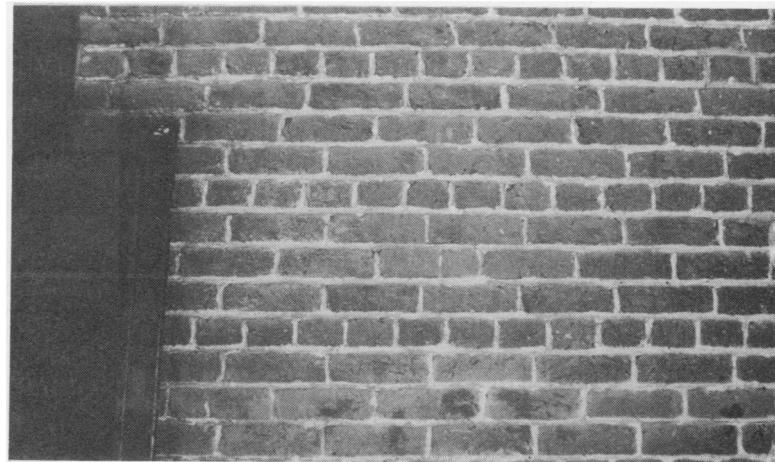
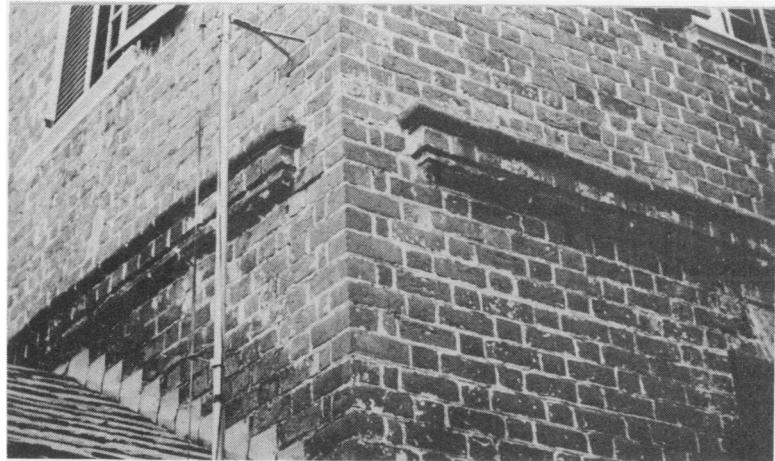


Fig. 45 (left) Brooke's Bank, Essex County, Va. (1751)

Most colonial two-story brick houses in Virginia employed a projecting belt or string course to delineate the floor levels. Belt courses most often were composed of two or three courses of rubbed brick with buttered joints. Molded belt courses as on Brooke's Bank are rare. The use of brick belt courses all but ceased after the Revolution, although high-style Federal houses frequently have stone belt courses.

Fig. 46 (right) West Lawn between Pavilions VI and VII, University of Virginia, Charlottesville, Va. (1817)

Three-course American bond, (sometimes called three-course common bond, and sometimes Liverpool bond) consists of a course of headers alternating with three courses of stretchers. It was considered economical rather than decorative and is found primarily in secondary walls, foundations, and chimneys. Almost never was it employed on Virginia buildings erected before the 1780's.

Brick bonds with two courses of stretchers to a course of headers are all but non-existent in Virginia. They were not favored because the vertical joints tended to align.

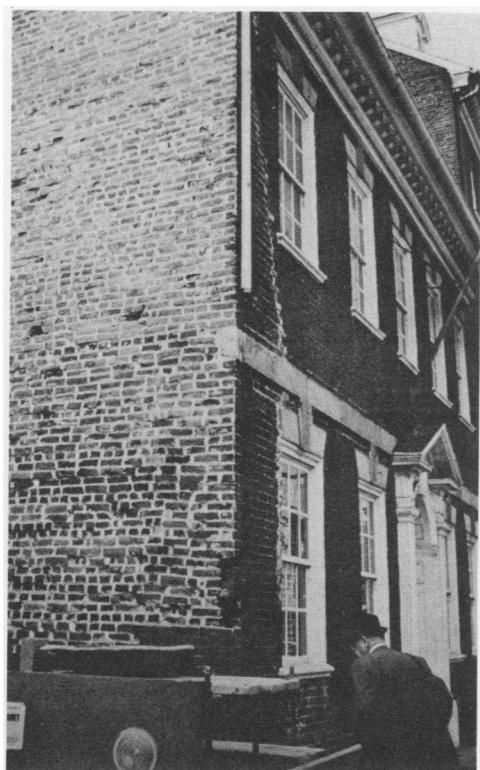


Fig. 47 (left) Short House, Newbury, Mass. (c. 1732)

In contrast to Virginia, three-course American bond appears on a number of early and mid-eighteenth century buildings in New England. (In New England it is usually referred to as common bond.) The brick end walls of the Short House are laid in three-course common and employ simple two-course belt courses laid in Flemish bond. Note the use of odd headers in the stretcher courses to prevent alignment of vertical joints.

Fig. 48 (right) Gadsby's Tavern, Alexandria, Va. (1752)

A form of common or American bond is sometimes found in the party walls of colonial structures in Virginia towns. The temporarily exposed party wall of Gadsby's Tavern has an irregular ratio of stretcher courses to header courses, but stretcher courses predominate.

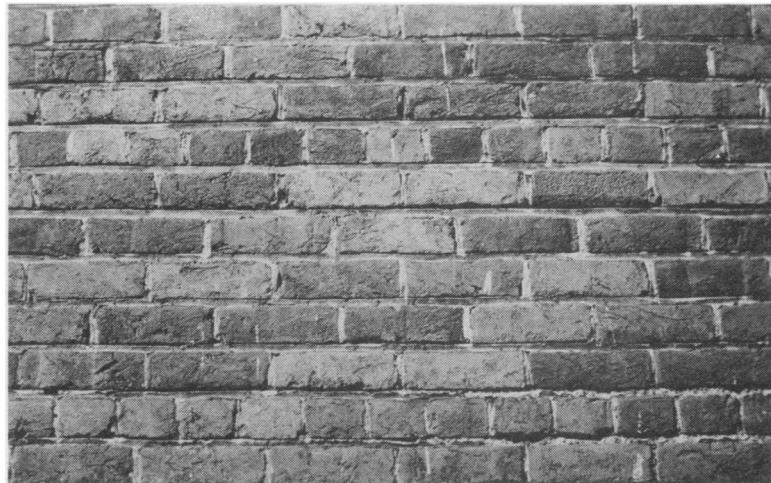


Fig. 49 (left) North Fork Primitive Baptist Church, Loudoun County, Va. (1790)

The corner of this northern Virginia church illustrates the characteristic use of three-course American bond for side walls, and Flemish bond for the facade. Note the use of queen closers at the ends of the header courses.

The two header-size holes in the brickwork in the center of the upper half of the illustration are putlog or putlock holes which were used to support the mason's scaffolding. Most putlog holes were filled as part of the normal completion of construction, but occasionally the mason didn't bother to fill them.

Fig. 50 (right) East Lawn (rear) University of Virginia, Charlottesville, Va. (c. 1825)

During the 1820's five-course American bond (five courses of stretchers to a course of headers) supplanted three-course American bond as the preferred bond for side and rear walls. It was more economical and could be laid quicker than three-course work. The use of five-course bond in Virginia persisted into the late-nineteenth century.

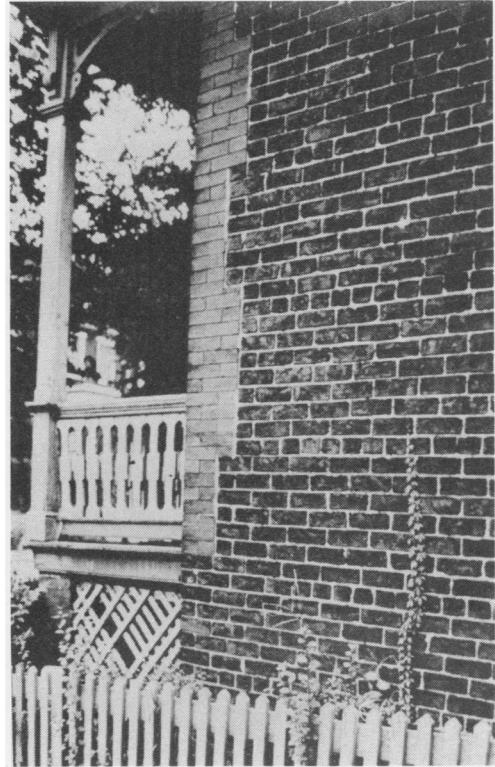
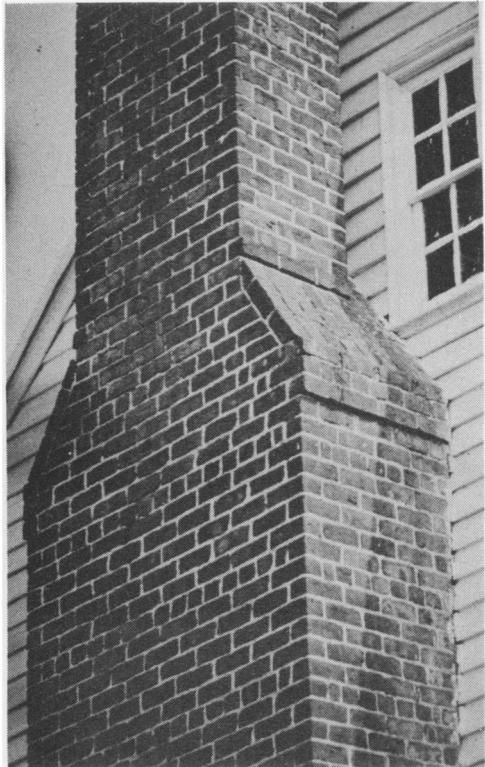


Fig. 51 (left) Booth House, Surry County, Va. (c. 1830)

This example illustrates the use of five-course American bond in an exterior-end chimney. The brickwork is particularly well executed; five-course work usually was not laid with such care. The use of tiled weatherings for a chimney of this date is most unusual; tiling rarely was employed in chimneys erected after the Revolution.

Fig. 52 (right) Townhouse, Church Hill, Richmond, Va. (c. 1870)

Seven-course American bond (seven courses of stretcher to a header course) came into use after the Civil War, particularly in urban areas. It was used most often in conjunction with veneered pressed brick facades. Because pressed bricks were smaller than the common stock bricks used in the seven-course work, the facade bricks could not be bonded directly into the side walls. A method frequently employed to tie the two types of brick together was an irregular quoining system as shown in the illustration.

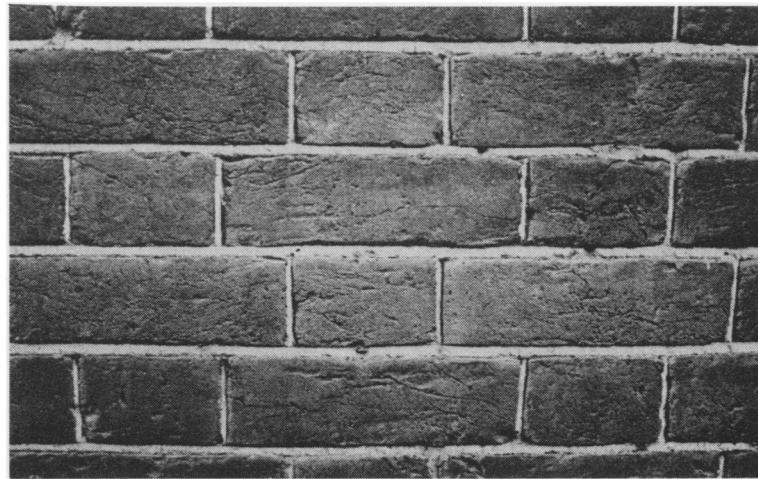
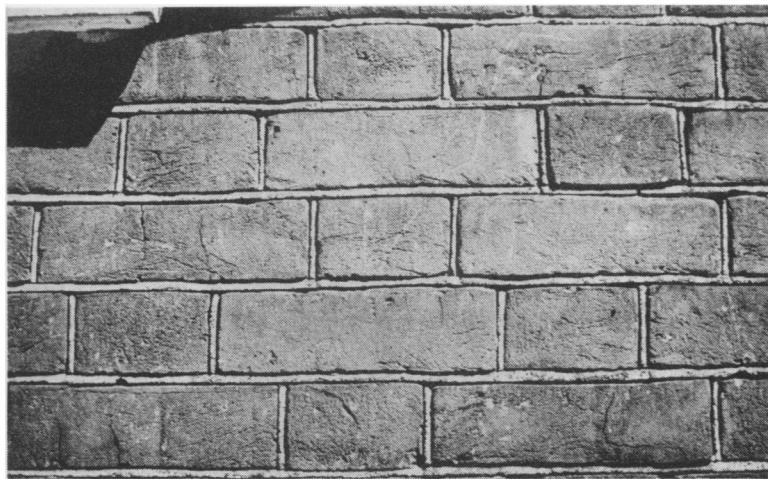


Fig. 53 (left) Yeaton-Fairfax House, Alexandria, Va. (c. 1805)

Although American bond became popular for side and rear walls after the Revolution, the use of Flemish bond for facades persisted well into the nineteenth century. In Virginia, Flemish bond of the early Federal period has a quite different character from the pre-Revolutionary Flemish bond. Improved methods of brick manufacture, available especially in growing urban areas, produced bricks much more consistent in size, texture and color. The tendency, therefore, was towards a very even, precise surface, as opposed to the textured appearance of the colonial wall. Instead of the scored joint, a very regular flattened bead became standard on better-quality Flemish bond.

Fig. 54 (right) Farmers' Bank, Petersburg, Va. (1817)

At its best, Flemish bond of the Federal period has its vertical joints consistently thinner than its horizontal joints. In the examples illustrated the beaded vertical joints are V-shaped because they were too thin to flatten.

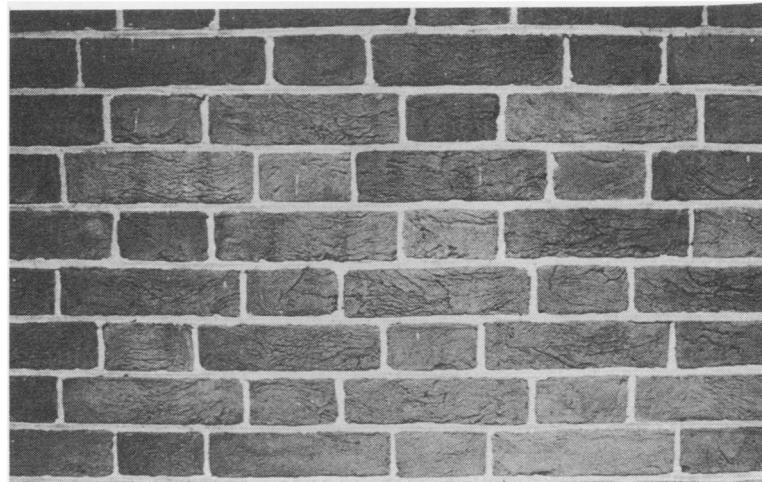
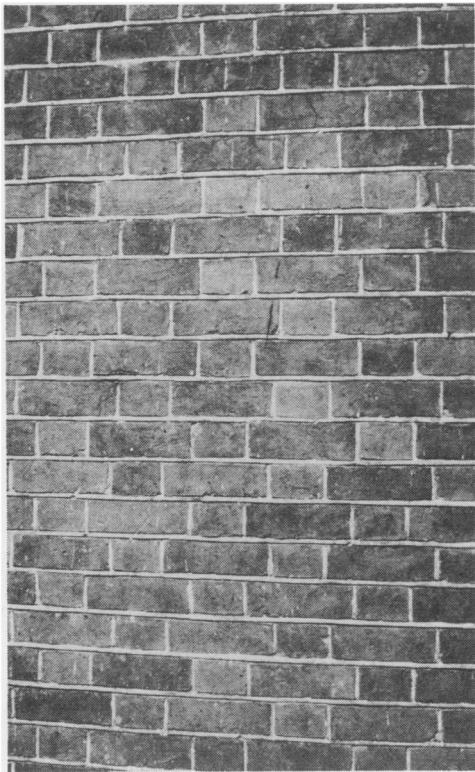


Fig. 55 (left) Rotunda, University of Virginia, Charlottesville, Va.
(1822-26)

Thomas Jefferson engaged Philadelphia masons for the more refined brick-work at the University of Virginia. He was so impressed by Abia Thorn's work on the Rotunda walls that in writing a recommendation for him he stated: "...I believe more beautiful and faithful work has never been done in any country."*

One can better appreciate the quality of Thorn's work as shown in the illustration when it is recalled that the Rotunda's walls are circular.

*Quoted in Jefferson's Buildings at the University of Virginia, The Rotunda, by William B. O'Neal (Charlottesville, 1960).

Fig. 56 (right) Ampthill, Cumberland County, Va. (c. 1835)

Even by the second quarter of the nineteenth century many rural houses in Virginia were still being constructed of brick burnt in temporary kilns or clamps set up on the site. These bricks, of course, did not have the precise edges and smooth surfaces of the bricks produced in commercial urban brickyards. The rural mason, however, wanted his building to look up-to-date, and carefully selected his bricks for evenness of color. Ampthill possesses notably good Flemish bond for a rural house. Typically, its mason did not attempt the fine beaded joint of city buildings, but used a simple flush joint instead.

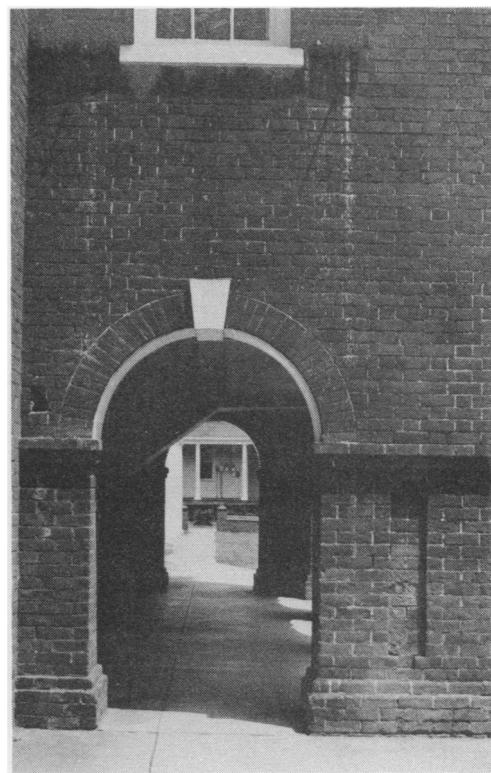
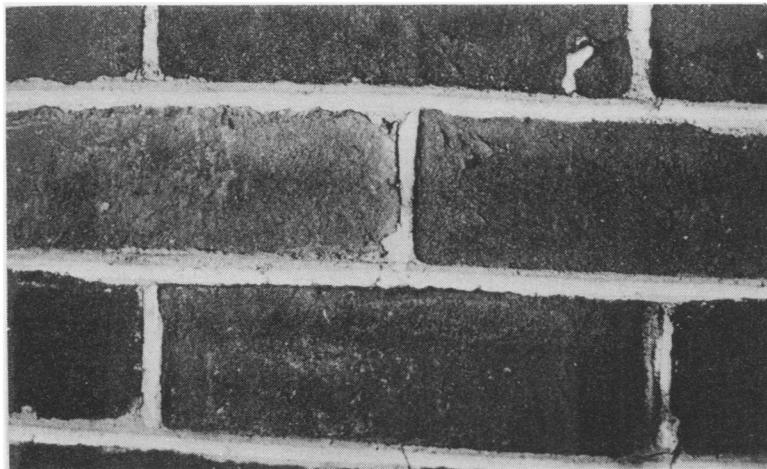


Fig. 57 (left) Farmhouse, Franklin County, Va. (early nineteenth century)

The colonial mason attempted to compensate for the irregularity of his bricks and jointing by scoring the mortar joints. This practice was given up after the Revolution in favor of painting the joints with a fine white line. This example illustrated employs irregular, granular surfaced bricks produced in exactly the same manner as colonial bricks, but the resulting uneven mortar joints are given visual regularity by being painted or penciled with a white line.

Fig. 58 (right) Sussex County Courthouse, Sussex Court House, Va. (1828)

In many early-nineteenth century brick buildings, especially rural ones, the walls were painted red and the jointing white. The motive was to achieve the appearance of uniform color and even jointing in order that the building would look as though it were constructed of the same fine quality bricks found in city buildings. Painting also served to mask unwanted glazed headers that might appear in the walls. In The American Builder's General Price Book and Estimator by James Gallier (Boston, 1836), a price of 3¢ per yard is quoted for "Brick fronts painted one coat, and the joints drawn white."

Sussex County Courthouse retains its original red paint and whitened joints. Such original painted walls should be identified and preserved whenever possible.

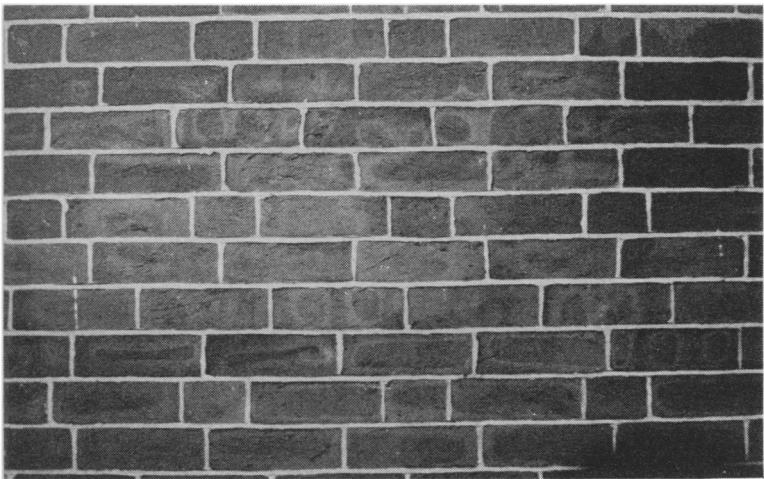


Fig. 59 (left) Goochland County Courthouse, Goochland Court House, Va. (1826)

The side walls of Goochland County Courthouse are laid in a variation of American bond that is somewhat awkwardly termed common or American with Flemish. This variant came into fairly widespread use in the early nineteenth century and was used throughout the remainder of the century. The bond is similar to three-course American except that instead of all-header courses at three-course intervals, a course of alternating headers and stretchers is used. This can occur at intervals of five stretcher courses as well.

Fig. 60 (right) Mahonia Cottage, Page County, Va. (c. 1830)

A regional variation of Flemish bond that occurs primarily in early-nineteenth century buildings in the Shenandoah Valley and western Virginia is called staggered Flemish bond. Staggered Flemish does not have its headers centered above and below the stretchers as in ordinary Flemish. Instead the headers are staggered one above the other resulting in a pattern of vertical stripes. Staggered Flemish is found only on facades. The example illustrated is unusual in that it employs consistent glazed headers.

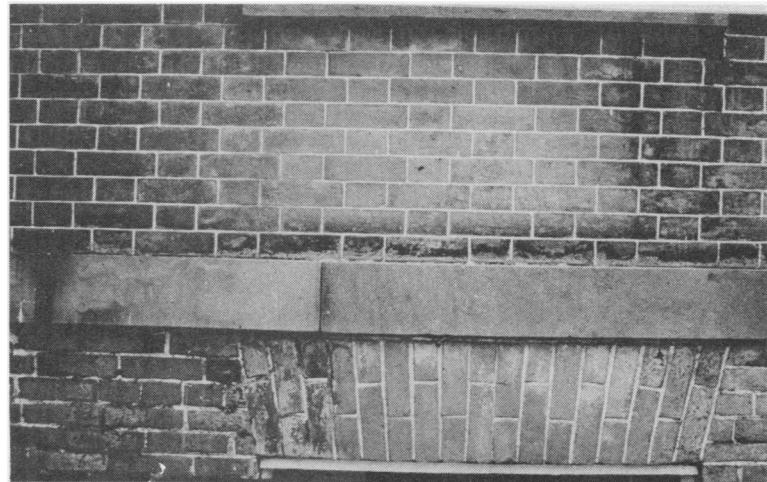
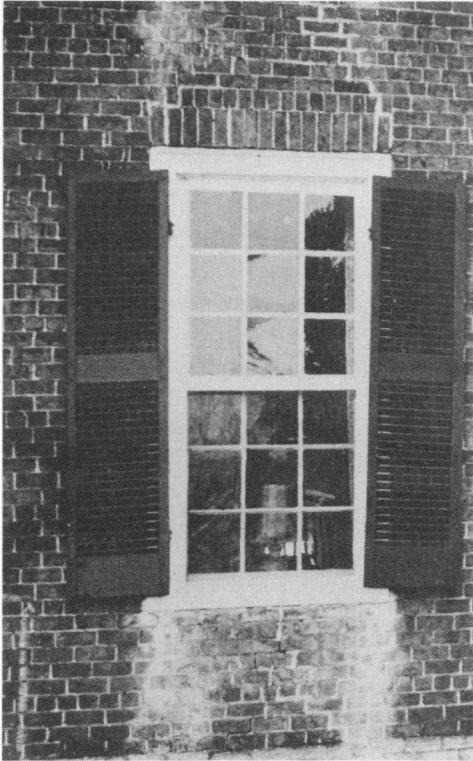


Fig. 61 (left) Montcalm, Washington County, Va. (1827)

Rubbed and gauged work on Virginia houses erected after the Revolution is virtually non-existent. This can be explained by the fact that the colonial bricklayers' guilds required an apprenticeship period of seven years, and during that period the apprentice spent much of his time both rubbing bricks and shaping them for gauged work. After the Revolution the apprenticeship period was reduced to only two years, thus depriving the master mason of most of his manual labor. The master mason couldn't afford to spend his own time rubbing brick, so he quit using it. In contrast with the standard gauged jack arch of colonial times, the flat arch above the windows in the Federal house illustrated is composed regular-size bricks in a soldier and rowlock course.

Fig. 62 (right) Riddick House, Suffolk, Va. (1837)

Even in fine ante-bellum buildings with excellent Flemish bond, no attempt was made at gauged work. The flat arch below the belt course in the Riddick House is composed of regular-size bricks forced to fit in a pattern for which they were not shaped. The result appears crude and sloppy when contrasted with the fine workmanship in the Flemish bond.

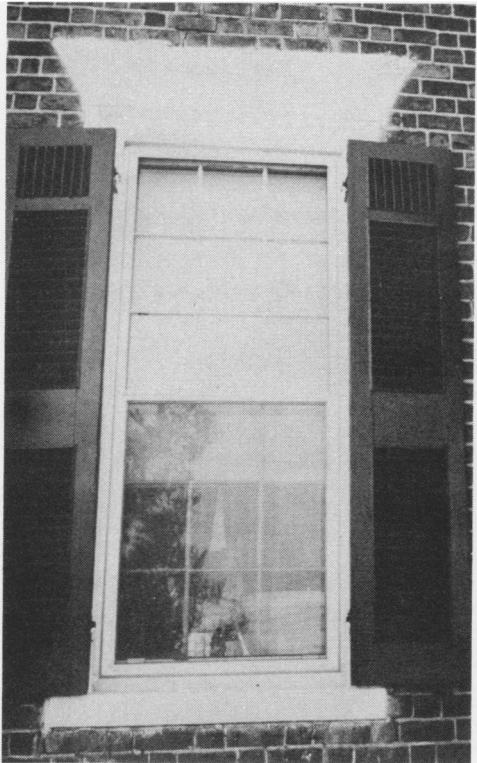


Fig. 63 (left) Locust Level, Bedford County, Va. (early nineteenth century)

The difficulty of obtaining neat brick arches after the Revolution forced masons to turn to other methods of finishing the tops of openings. Stuccoed jack arches became popular, as well as stone or wood rectangular lintels and iron hood moldings. Often the brick bond was carried over the head of the opening with no attempt at a structural motif.

Fig. 64 (right) Hilary Baker House, Church Hill, Richmond, Va. (1810)

The hound's tooth course (composed of projecting corners of diagonally set bricks) was a motif of the late-seventeenth century and returned to use in the early-nineteenth century. It was employed mostly on non-academic houses and outbuildings.

Note the use of the stuccoed jack arch and keystone above the windows.

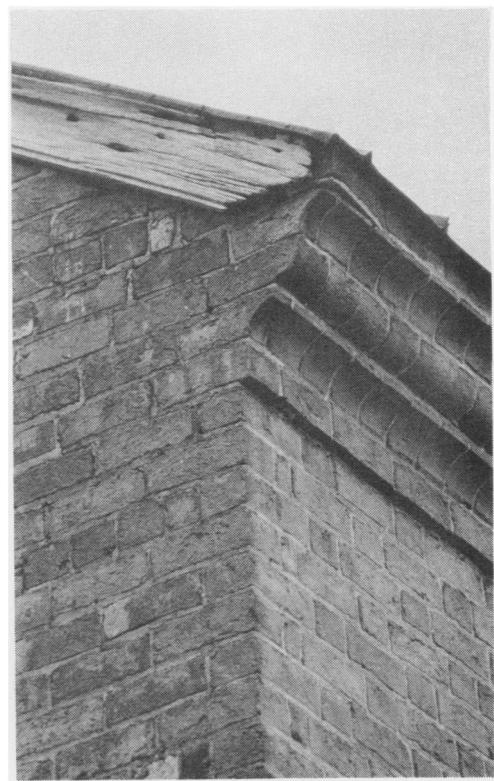
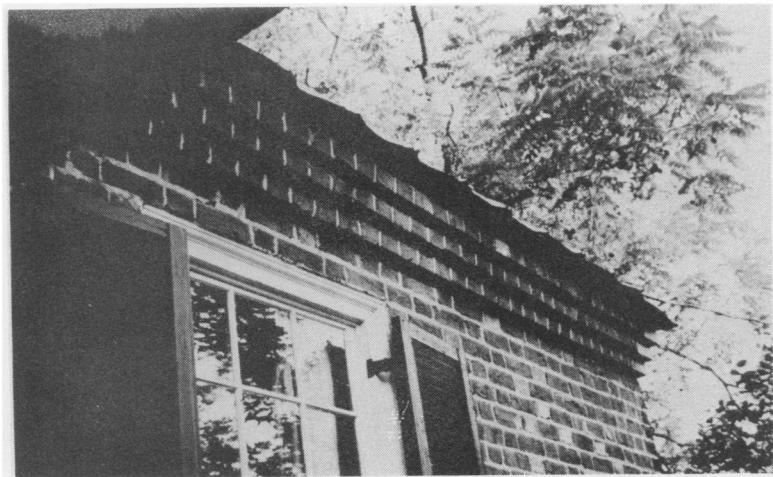


Fig. 65 (left) Hope Dawn, Bedford County, Va. (early-nineteenth century)

Like the hound's tooth course, the corbeled cornice came into popularity in the early-nineteenth century for more simple houses and outbuildings. It was favored over wood cornices in county clerks' offices because of the lessened fire hazard.

Fig. 66 (right) Reedy Creek House, Washington County, Va. (c. 1800)

Although rubbed and gauged work is rarely seen on post-Revolutionary buildings, the molded brick cornice came into fashion in the late-eighteenth century, chiefly in the Shenandoah Valley and southwestern Virginia. Numerous handsome examples, such as that illustrated, are common in these regions, but almost non-existent in eastern Virginia.

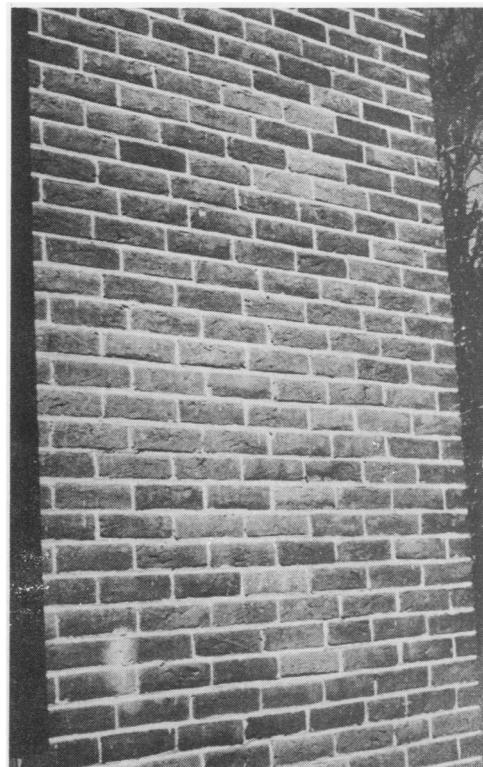
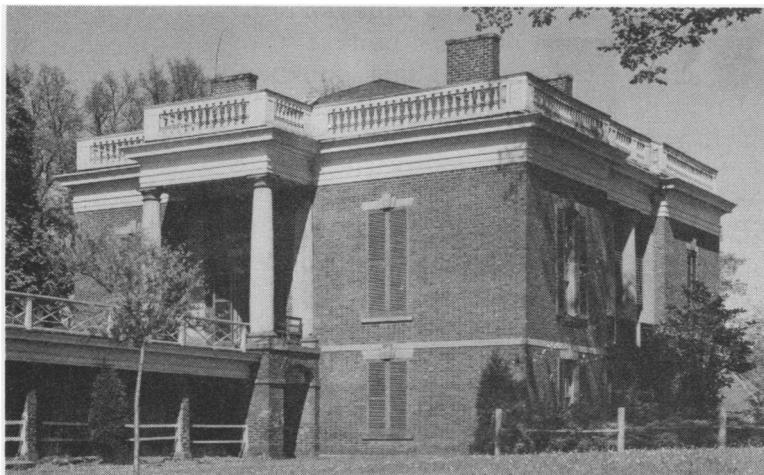


Fig. 67 (left) Upper Bremo, Fluvanna County, Va. (1820)

While most early-nineteenth century Virginia bricks were finished with the standard granular surface, many sophisticated buildings such as Upper Bremo and Thomas Jefferson's buildings at the University of Virginia were faced with oiled bricks. Oiled bricks had very smooth surfaces as the brick molds were lined with copper and wiped with linseed oil rather than dusted with sand. Upper Bremo is one of the earliest documented examples of the use of oiled bricks in Virginia.

Fig. 68 (right) Cobham Park, Albemarle County, Va. (1856)

Stretcher bond (uniform courses of stretchers throughout the wall) came into general use just prior to the Civil War. Early stretcher bond is bonded to the backing brick by specially cut bricks set on a diagonal. Later stretcher bond is more like a veneer and employs bricks of a different size and quality from the backing brick. Such brick veneer is tied to the backing brick with metal tabs. The illustrated example is of handmade brick probably produced on the site. It retains the original paint on the joints.

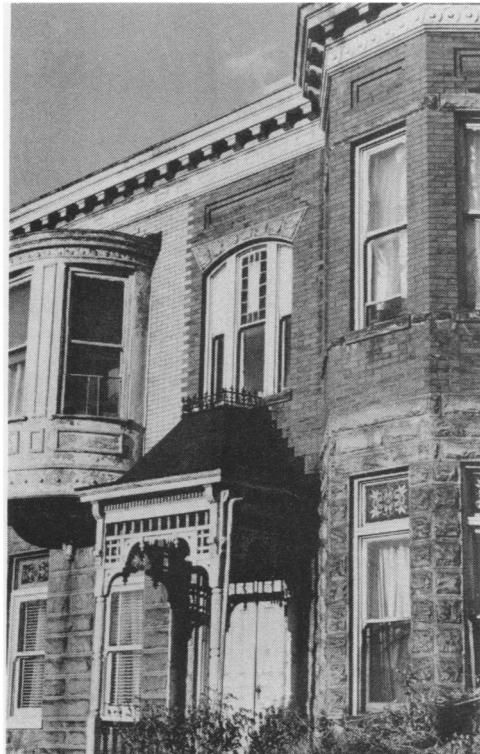


Fig. 69 (left) Armistead House, Williamsburg, Va. (1858)

This Greek Revival townhouse has unusually beautiful stretcher bond walls. The very precise bricks were probably formed in metal molds, and referred to as Baltimore stock bricks in an early description of the house. This type of brickwork is characteristic of fine mid-nineteenth century townhouses and public buildings in most eastern cities.

Fig. 70 (right) Townhouses, W. Main Street, Richmond, Va. (c. 1890)

Brick veneers of the late-nineteenth and early-twentieth centuries almost universally employed pressed bricks. Pressed bricks are made with a stiff clay that is forced into metal molds under very high pressures, and are burnt in gas-fired kilns. Compared with handmade bricks they are very hard and have a consistent density. Buff-colored pressed bricks, which are made from a clay with magnesia and alumina, are as common as red pressed bricks made from ferric oxide clays.

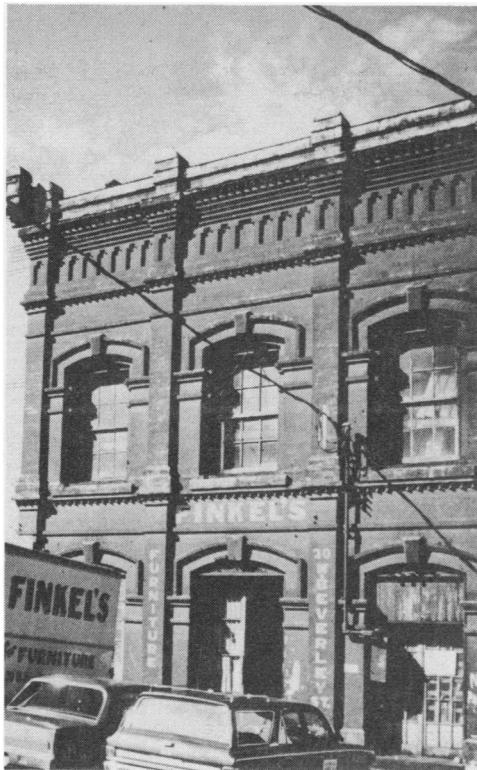


Fig. 71 Warehouse, Wharf Area, Staunton, Va. (c. 1880)

Late-nineteenth century brickwork, not only in Virginia but throughout the nation, developed into a very elaborate art. Exuberant examples of Victorian brick ornamentation can be found even on the most ordinary type of building in most any American city.

The author is grateful for the many pieces of valuable information relating to Virginia brickwork acquired in conversations with Edward F. Heite of the Division of Historical and Cultural Affairs, State of Delaware, and with Paul Buchanan of the Architectural Department of the Colonial Williamsburg Foundation.

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