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## NOTES ON DICHROMATIC BRICKWORK IN ONTARIO

ANALYZED

by T. Ritchie

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#### ABSTRACT

The use of dichromatic brickwork (bricks of two colours) for the decoration of buildings was fashionable in Ontario in the last century. The fashion frequently involved the use of buff or yellow bricks at the corners and around window and door openings of red brick buildings, and arranged in decorative designs in the walls. Examples are given of various decorative features used in dichromatic brickwork, including diamonds, zigzags, bands and crosses.

#### RÉSUMÉ

Le briquetage dichromatique (brique de deux couleurs) utilisé pour décorer les bâtiments était à la mode au cours du siècle dernier. La mode dictait souvent la pose de briques couleur chamois ou jaune, dans les coins et autour des fenêtres et des ouvertures de portes de bâtiments en brique rouge, que l'on disposait en patron décoratif dans les murs. Divers exemples de modèles décoratifs utilisés dans le briquetage dichromatique sont donnés, y compris losanges, de zig

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## NOTES ON DICHROMATIC BRICKWORK IN ONTARIO

by T. Ritchie \*

Examples of dichromatic brickwork (bricks of two colours), usually occurring as walls of red brick with buff bricks at the corners and around window and door openings, are common in Canada, particularly in Ontario where many buildings featuring this decorative treatment were constructed in the 1870's and later. The use of such brickwork, according to Gowans,<sup>1</sup> followed a fashion for the use of polychromatic brickwork and masonry that came into favour in English architecture of the mid-19th century.

The polychromatic fashion of the 19th century was in large measure a revival of the use of patterned brickwork that had been introduced to England in mediaeval times. Early brickwork, however, was of subdued colour contrast, achieved by selecting darker coloured bricks and arranging them in a simple diaper (diamond) pattern or variations of it. The new fashion called for sharply accentuated colour contrasts such as black bricks in a background of bright red brickwork, as well as the use of complex patterns or combinations of patterns.

Buildings designed by William Butterfield did much to promote the use of the fashion in England. The polychromatic decoration that he employed in All Saints Church, London (commenced in 1849) attracted great attention and provided inspiration for other architects. It featured a background of pink brickwork with black bricks forming bold stripes, bands and patterns, and additional black bricks set in diaper, zigzag and other decoration of mediaeval inspiration.

The new architectural fashion came into use in Canada with surprising rapidity, for many buildings erected in the 1870's featured dichromatic brickwork. Its quick application suggests that Canadian architects and builders kept up-to-date with the latest developments in English architecture or that English architects and builders continued to bring with them the current styles in building. In Canada, however, dichromatic rather than polychromatic brickwork was generally employed; it usually consisted of yellow or buff bricks on a red background, except in those regions where the clay for brickmaking normally burned to a yellow colour, in which case red bricks provided the colour contrast. Contrasting colour was applied at the corners of buildings, along the sides of door and window openings, in arches, and in decorative bands and patterns.

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Buildings of dichromatic brickwork in Ontario show great diversity in the way colour contrast was used as well as in the extent of use. Its application in many cases did not require any great skill on the part of the bricklayer; for example, in a house in Merrickville (Figure 1(A)) the colour contrast was obtained simply by the use of yellow headers to contrast with the red stretchers in brickwork of Flemish bond. In other buildings, however, more intricate designs were often employed, such as in the house at Nobleton shown in Figure 1 (B) with its striking, decorative use of zigzag corners, bands, panels and arches.

Certain common features or principles of design observed in many examples of dichromatic brickwork are outlined in these notes, which describe buildings in Ontario believed to have been built in the decades of the 1870's and 1880's when dichromatic brickwork was very popular with builders.

### Diamond and Zigzags

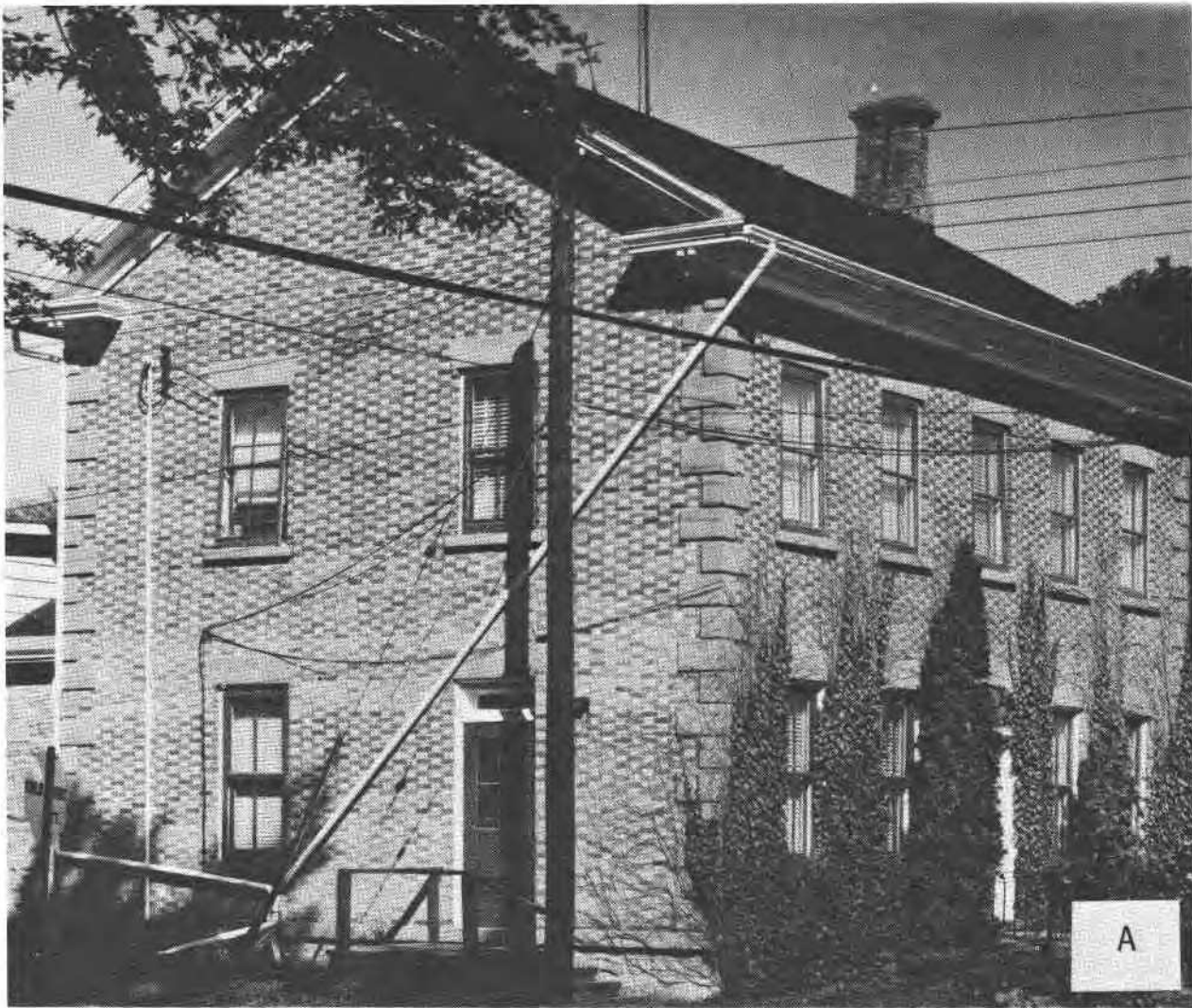
Much dichromatic decoration was based on the diamond pattern, which the bricklayer could easily work into a wall; when he laid a brick he located it not directly over the brick beneath it but offset from it, usually by a half or occasionally a quarter of the brick's length ( $1/2$  lap or  $1/4$  lap). If he selected certain offset bricks of successive courses to differ in colour or shade from those of the rest of the wall, the bricklayer could create diagonal lines in the brickwork and these diagonals could be used to form the diamond pattern shown in Figure 2, a traditional brickwork decoration; the amount of overlap governs the slope of the lines and thus the shape of the diamond.

By reversing the slope of diagonals zigzag lines could be formed, as in Figure 3(a), a farmhouse built in 1873 near Alliston. The bricklayer incorporated not only vertical zigzag lines in the walls of this building but also diamonds, crosses, and other embellishments. Decoration could also be based on half-diamonds and diamonds within diamonds, as shown in Figure 3(B), the wall of a building in Belleville. Colour-contrasting bricks used without being offset produced vertical lines in a wall and when laid in continuous courses formed horizontal bands.

### Corners

Various arrangements of colour contrast at the corners of buildings are sketched in Figure 4. Those of the top row are based on a half-brick as the start of the pattern, with the brick of the next course projecting beyond it by a half-brick, except for an arrangement involving a three-quarter brick projection. For the various arrangements a numerical expression is given. In this way the pattern  $1/2: 1: 1-1/2: 2$  starts with a half-brick and has subsequent projections from the corner of one brick, a brick and a half, and two bricks.

The corner arrangements shown in the bottom row of Figure 4 start with a full brick and continue with a projection of a half-brick per course. All the patterns except the last of the bottom row are symmetrical.



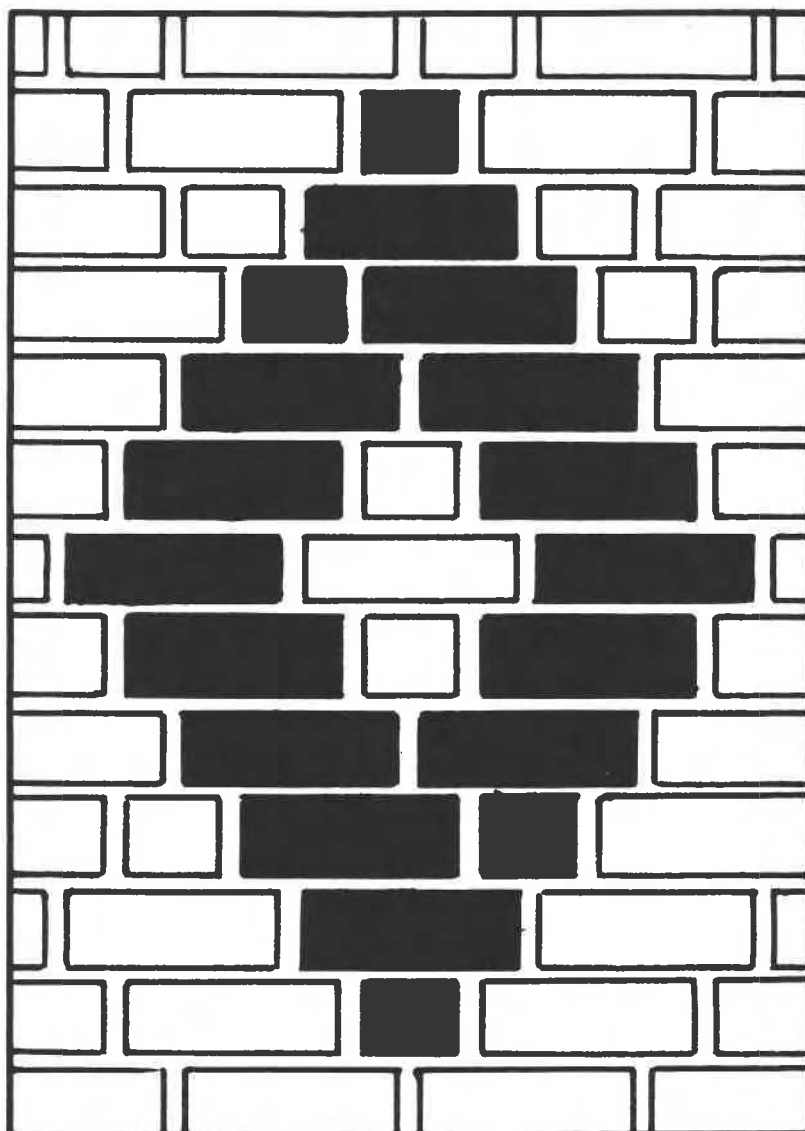
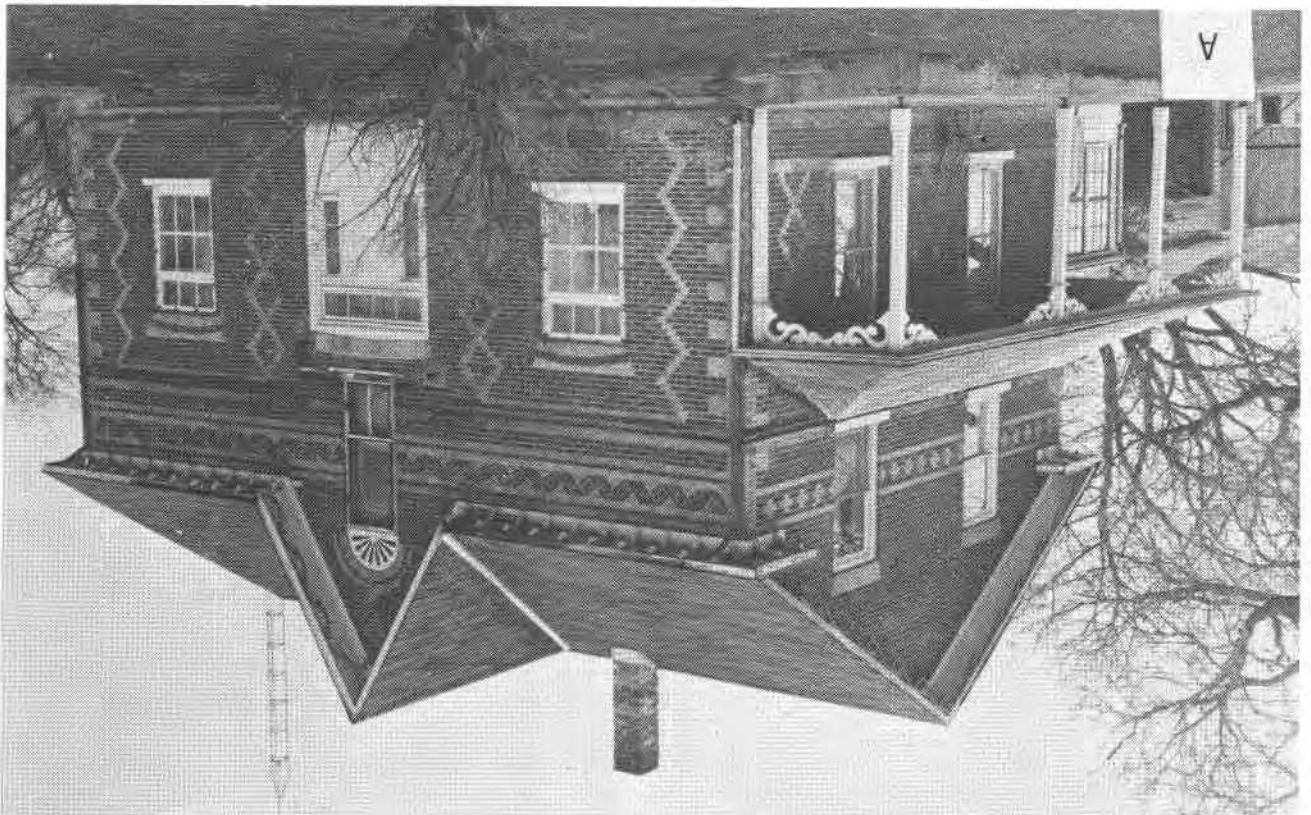
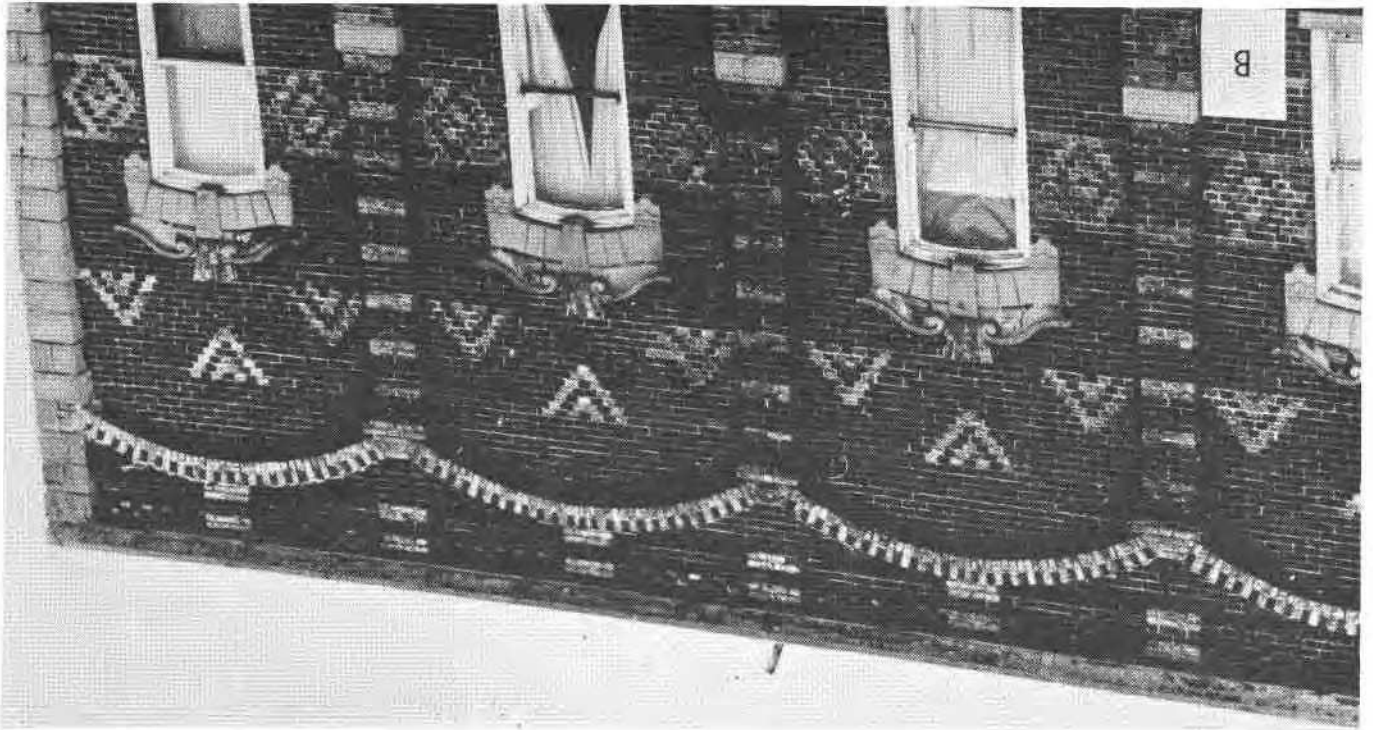


Fig. 2 Diamond pattern formed by the sloping lines made by offsetting bricks of successive courses.

Fig. 1 (opposite) (A) House at Merrickville with dichromatic brick of yellow header bricks and red stretchers in Flemish bond.  
(B) Highly decorative dichromatic brickwork of house at Nobleton.

Fig. 3 (A) Farmhouse near Alliston with zigzag, diamond and other decoration.  
(B) Decoration of building in Belleville with half-diamonds and diamonds-within-diamonds.



In some buildings the corner design was also used at doors and windows. For example, in the house at Jasper shown at the top of Figure 5, the pattern illustrated in Figure 4(A) is continued in the arches above windows and doors. Another example of the use of one design at corners, windows, and doors is shown in the middle of Figure 5, a farmhouse near Courtland in which the pattern of Figure 4(C) may be seen. Another feature of its brickwork is the string of individual crosses, each centred beneath a short band outlining the top of the walls. In some cases the design used at the corners was repeated only in the upper parts of the door and window openings, as illustrated by the bottom example of Figure 5, a house in Merrickville whose builder used the design shown in Figure 4(B).

The use of dissimilar designs at the corners and elsewhere is illustrated in Figure 6, a farmhouse near Brownsville; its four corners are of the design shown in Figure 4(F), while around doors and windows, in the arches, and in the bay projections the design of Figure 4(A) was used.

Where corner designs of wide projection appear (Figure 4(E)), contrasting bricks were sometimes fitted in the projection to accentuate the diamond pattern. This may be seen in Figure 7, a house at Hagersville whose bricklayer did not correct a mistake he made in one of the diamonds (adjacent to the roof of the front porch). Crosses in the gables and a form of double-diamond pattern in the walls provide additional decoration of the brickwork.

### Brick Quoins

Various arrangements of brickwork used in imitation of the cornerstones of masonry construction are sketched in Figure 8. Decorative treatments in conjunction with brick quoins include zigzag and diamond decoration such as that in the house shown in Figure 3. It has quoins of the design depicted in Figure 8(C). Quoins of the design sketched in Figure 8(B) were used in a farmhouse near Bishop Mills (Figure 9) that has decoration around windows and doors of the type shown in Figure 4(A).

### Other Corner Treatments

The corners of certain brick buildings were outlined with vertical strips of contrasting colour, as in the example shown in Figure 10, a building in Brooklin that has corner strips two bricks wide. In addition, vertical strips one brick wide were provided alongside the top third of each door and window, the tops merging into the arch bricks. The bottoms of such strips were provided with a sort of arrow-head design. Horizontal lines were also provided by a four-course band above the stone foundation and two thin bands at the mid-height of the wall, one a single course and the other a double course. Another band three courses high and incorporating dentils was placed along the top of the walls.

A striking example of vertical corner strips and dichromatic decoration in general is St. Paul's Lutheran Church (Figure 11) in Morrisburg where

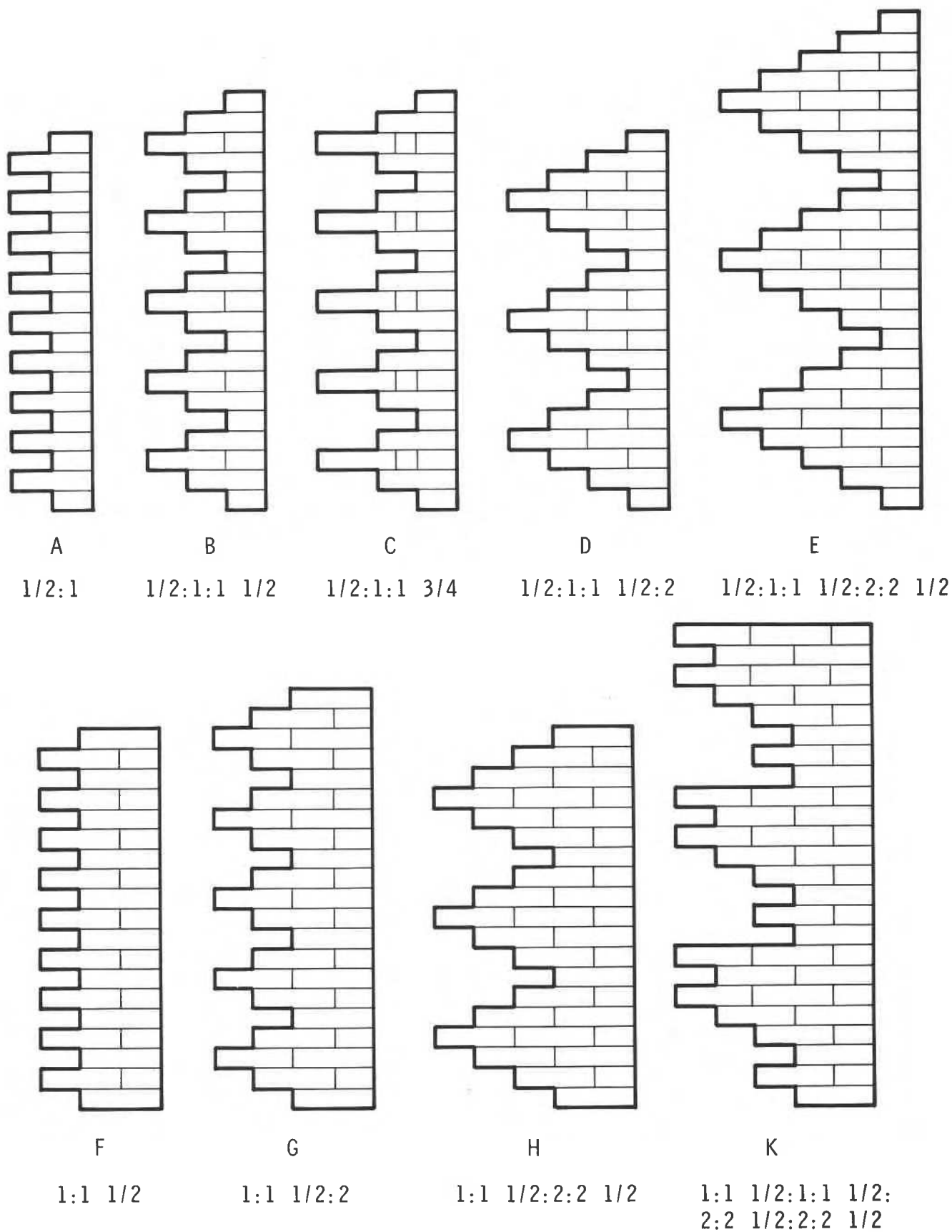


Fig. 4 Corner arrangements of colour-contrasting bricks.

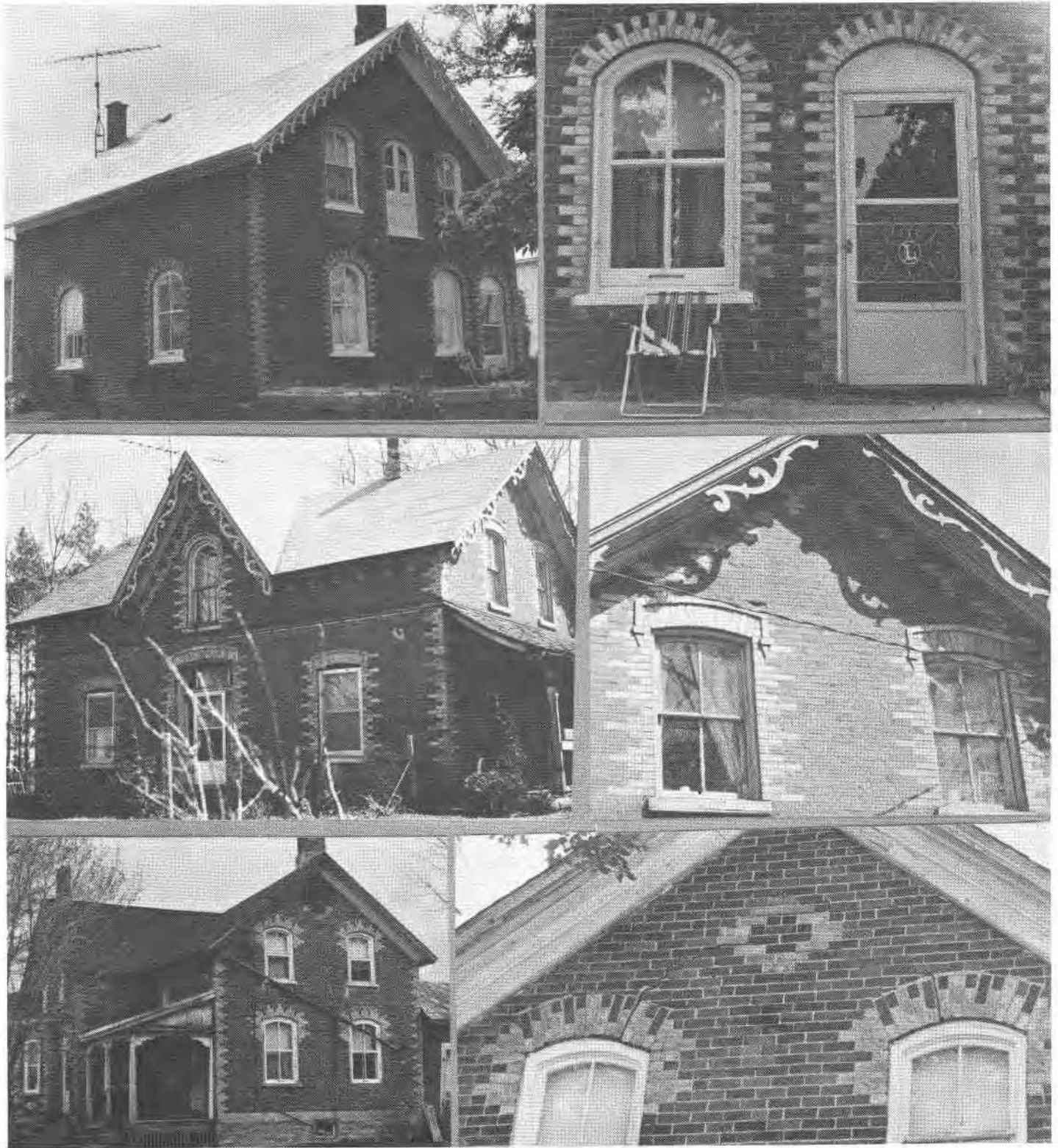


Fig. 5 Examples of the same pattern used at corners, windows and doors.



Fig. 6 Dissimilar designs at corners and elsewhere of a farmhouse near Brownsville.

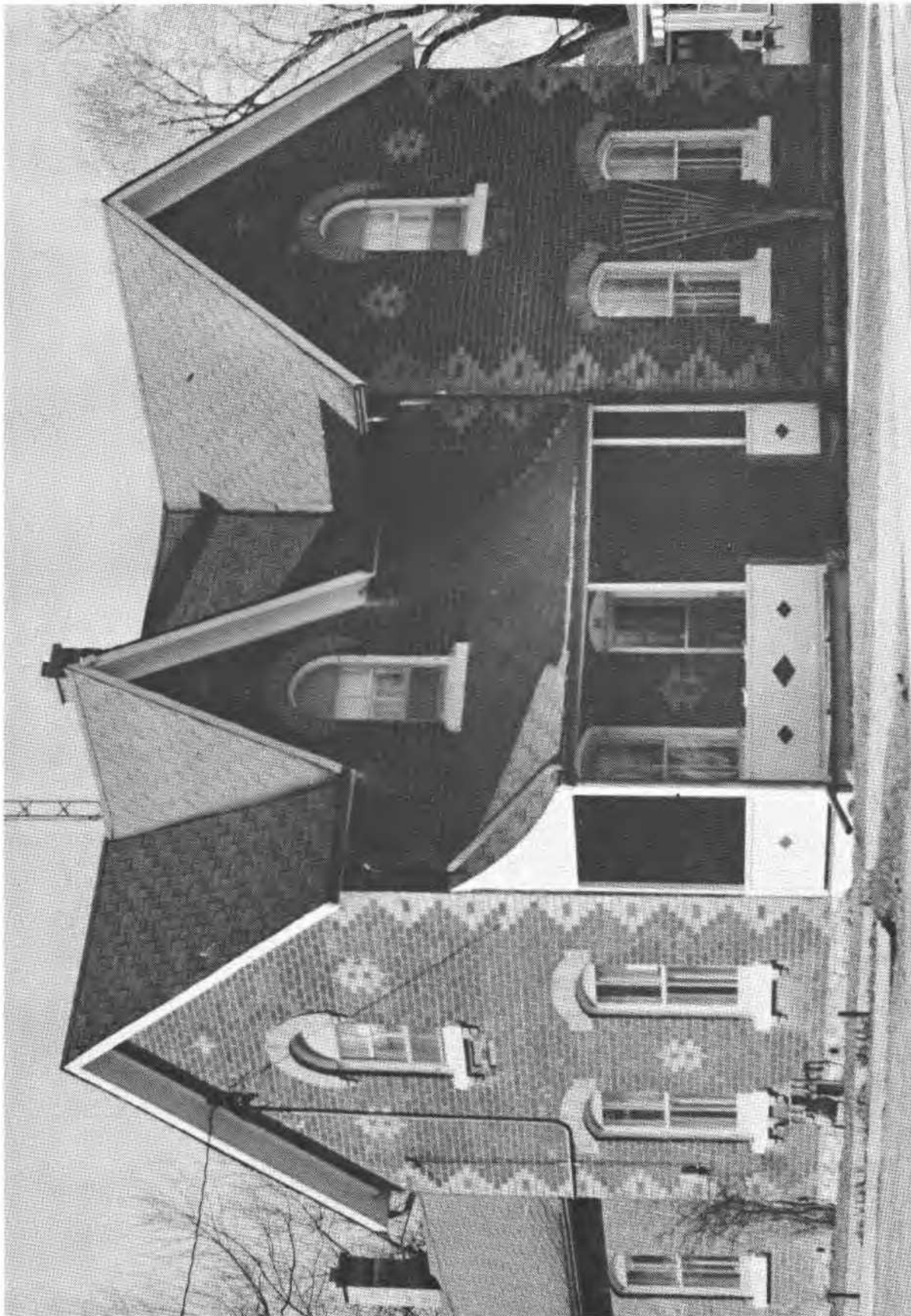
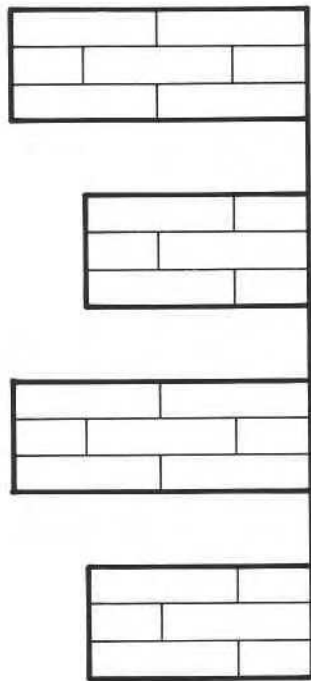
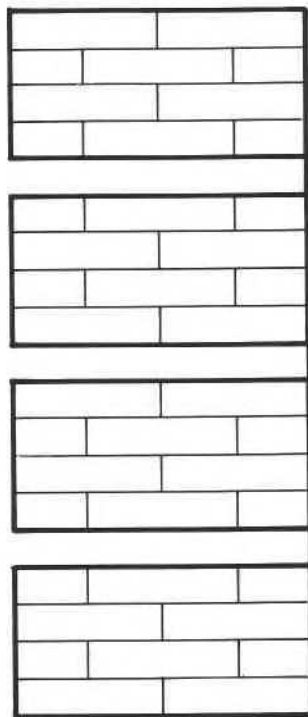


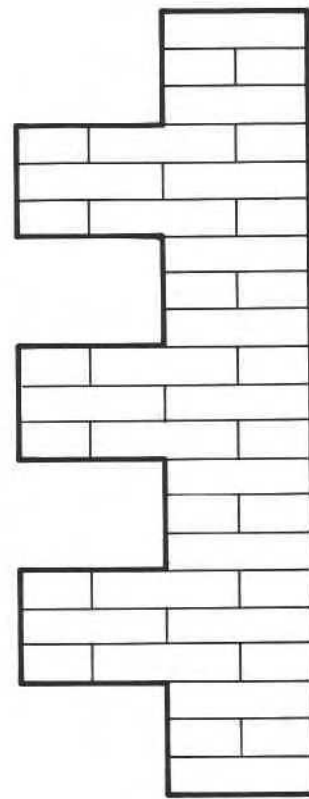
Fig. 7 Diamond design at the corners of a house at Hagersville.



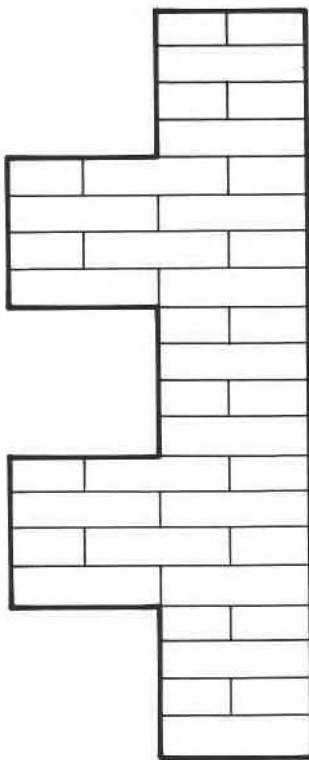
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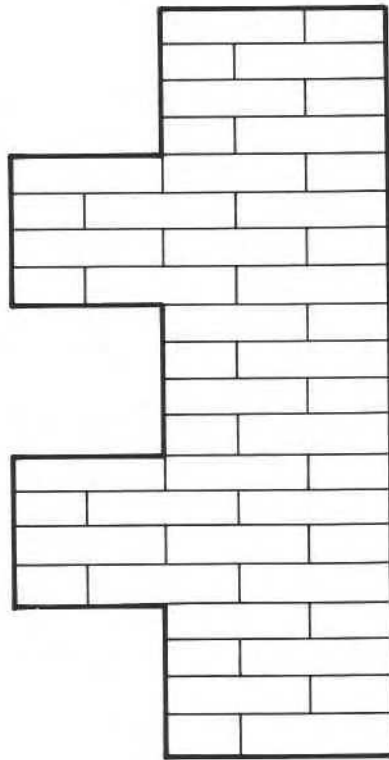
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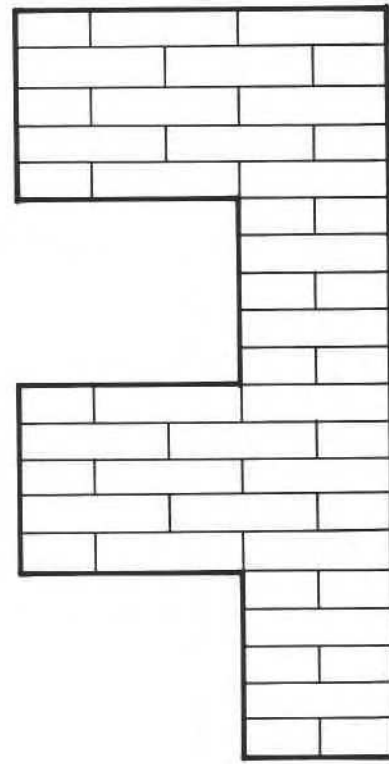
C



D



E



F

Fig. 8 Brick quoins.

strips have been used in pairs at the corners of the tower, at the corners of the building, and at intermediate positions along the walls. Horizontal bands connect each pair of strips, giving them a ladder-like appearance. Other dichromatic decoration includes the equilateral Gothic arches over windows and doors and the series of small lancet arches along the tops of the walls.

### Arches

Examples of dichromatic treatment of arches include the lightning pattern (Figure 12(A)) derived from the arrangement of the bricks in a Dutch arch over the door of a house near Merrickville; other examples of this decoration may be seen in houses in Almonte and Morrisburg. The window arches of the Merrickville house are camber (jack) arches (Figure 12(B)); another treatment of this same type of arch, without contrasting colour, is shown in Figure 12(C), an arch of a farmhouse near Pakenham.

Segmental arches shaped like the segment of a circle were constructed in various forms and with various colour effects (Figure 12(D-K)). In the three-ring segmental arch of Figure 12(D) no colour contrast was used, whereas in similar arches of Figures 12(E) and 12(F) the central ring was fitted with bricks providing colour contrast. In the same way, the arch of Figure 12(G), without colour contrast, may be compared with arches of similar, although slightly deeper, construction (Figures 12(H) and 12(K)) that have been provided with contrasting colours.

### Brick Colour

The colour of the burned clay bricks used for dichromatic brickwork came from the chemical and mineralogical composition of the clay, the temperature of burning, and the kiln atmosphere. Many Ontario brickmakers produced red and buff bricks according to the location of the clay in their deposit: clay taken from the top few feet, from which lime had been leached, burned red, whereas clay dug from the lower levels burned to a buff colour. Such was the case for brickmakers using the widely distributed "Erie Clay" described by Baker<sup>2</sup> in his 1906 study of the Ontario clay industries. The upper, weathered portion, termed by Baker "red-top clay", burned red; clay from lower levels of the same deposit burned buff or white, thus affording the brickmaker the opportunity to manufacture bricks of both colours.

Brickmakers using other Ontario clays, particularly the Leda clay of the Ottawa area, found that their bricks burned red regardless of where in the deposit the clay was obtained, a situation that led at least one brickmaker to alter artificially the normal colour of his burned clay. He was Thomas Clark of Ottawa, who found that by adding marl to the clay he could produce a white brick. In 1876 a patent<sup>3</sup> was issued to him for the manufacture of white bricks from "a composition of matter composed of from one-fourth to one-third or thereabouts, of shell marl, and from three-fourths to two-thirds of aluminous clay or thereabouts, the proportions varying





Fig. 11 (above) Decoration of St Paul's Lutheran Church, Morrisburg, by means of vertical "ladder" and Gothic arches.

Fig. 9 (opposite, top) Brick quoins of farmhouse near Bishops Mills.

Fig. 10 (opposite, bottom) Decoration of a house at Brooklin by means of vertical strips and horizontal bands.



Fig. 12 Arches.

according to the quantity, more or less, of oxide of iron contained in the clay." Another means of obtaining a white brick from red-burning clay was to add ground limestone to it.<sup>4</sup>

### Conclusions

Not long after the polychromatic fashion was introduced to English architecture about the middle of the last century, Canadian architects and builders began to use colour-contrasted brick construction for decorative effects, usually with buff bricks on a red background. Such dichromatic work was particularly popular in Ontario in the decades of the 1870's and 1880's. Although it has continued to be a part of brick construction, the extent of its use has declined, as has the ornateness and complexity of the designs used in such work.

Dichromatic decoration of brickwork includes a wide variety of treatments of corners, window and door openings, arches, and other parts of the building. Several of the designs were produced by offsetting bricks from one course to the next to form diamonds, half-diamonds and zigzags, while bands, crosses and other decorations were also formed from bricks of contrasting colour. Combinations of the various decorative effects have produced buildings of striking appearance and have made dichromatic brickwork an interesting part of the history of building.

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3. Canadian Patent Office Record, Vol. IV, No. 11, November 1876, Patent No. 6689.
4. *Scientific American Supplement*, No. 190, August 23, 1879 (p. 3021).

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