

Stone

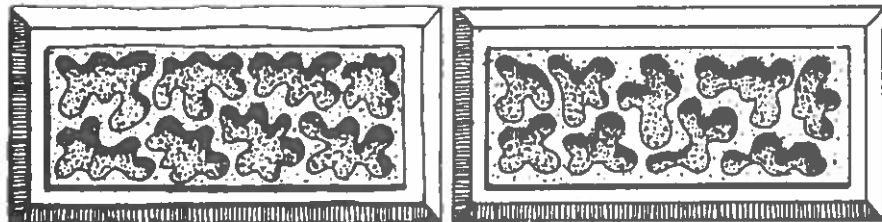
When looking at stone construction here are some basic points to consider:

*Where did the stone come from? Was it quarried locally or did it have to be brought from some distance? Remember that transportation was difficult in the nineteenth century and the closer the source of material was to your building site, the better. Desirable stone, like the sandstone of the Wallace and Pictou areas, was regularly shipped by water to other parts of the province and to New England. People in your community may know where stone was quarried locally and geological maps often mark abandoned quarries. Visiting these sites will help you identify local stone when examining a building.

*How was the stone laid to make the wall? If the stone was cut square and laid in straight even courses (rows) it was called "ashlar". If it was very uneven, using uncut stone, it was called "random rubble".

*How much trouble was taken to "dress" (shape) the stone? Some stones can be cut much more easily than others. Sandstone, for example, is much easier to cut than granite. During most of the nineteenth century cutting was done by hand so that a flat or decorative finish on stonework involved much work, and hence expense.

*Mortar holds the stones together and also serves as a cushion to support the stones. The mortar that shows is called the "joint" and can be shaped in various ways (recessed, raised, etc.) to stress the way the stone has been laid. Generally speaking, the thinner the joint the finer the stonework because the stone has had to be cut with a very flat surface to fit together closely. Until the end of the nineteenth century mortar was usually made of a mixture of lime and sand. Later, portland cement, which was much harder, replaced lime. The colour of the sand used in the mixture determined the colour of the mortar.



There are many decorative finishes that can be used on stone and this is one of the most complicated. When the edges of the stone are bevelled it is called "rustication". When the surface looks as if it has been worm-eaten, it is called "vermiculation". Thus, this could be described as "rusticated, vermiculated ashlar".

Masonry can be damaged in many ways. Pollutants in the air can discolour it or attack various materials. Rain or ground water can seep into cracks and dissolve mortar or minerals, or freeze and cause pieces to break off. Notice if masonry near the bottom of a wall is in poorer condition than that above it. Rising damp can often cause this deterioration.

Restoring and cleaning masonry is a complicated process that calls for expert advice. For example, sandblasting, which is now common, is one of the most destructive ways of cleaning masonry. It can destroy the hard outer surface of brick, exposing the vulnerable, softer interior or remove the decorative finish of stonework.

If you are interested in learning more about masonry, the following book is helpful: McKee, Harley J. Introduction to Early American Masonry; Stone, Brick, Mortar and Plaster. Washington, D.C., National Trust for Historic Preservation, 1973.

Adapted from an article by Stephen Archibald, Curator, Nova Scotia Museum; first published in The Occasional, Vol. 5 No. 2, p. 20.

info

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Looking at Masonry

In the early days of European settlement virtually all buildings in Nova Scotia were made of wood. It was a convenient material, available everywhere and easily worked. Furthermore, wooden buildings could be erected quickly, which was essential in our harsh climate. To build with stone and brick involved having a source of materials, workmen with specialized skills and the extra time and money necessary for this type of construction. One sign of Nova Scotia's growing maturity was the construction of more masonry buildings around the beginning of the nineteenth century. As the century progressed, commercial buildings and superior residences of stone and brick became more common, although wood was always the most popular building material.

There are a number of reasons for building with stone or brick. If skillfully used, masonry will survive indefinitely. Also, when fire was a constant and very real threat, a building of non-combustible materials was particularly desirable. Fires cleared large sections of most of our towns, at one time or another, and victims who learned their lesson rebuilt in masonry. A less tangible reason for using these materials was status. Because masonry was more expensive and desirable than wood, it set you apart as someone of substance.

Brick

Bricks have been used for thousands of years and good quality bricks can be made with very little equipment. Occasionally bricks for a building were even made on site from clay excavated for the basement.

To make bricks, clay is mixed with sand, molded in a wooden box without a top or bottom (so the brick can be easily removed), dried for several days and then baked in a kiln. The bricks near the fire in a kiln might be distorted and discoloured by the heat, those on the outside might still be soft, while those in the middle were just right. The bricks were sorted for quality (consistent in size and colour) and the best were used for the front of a building and poorer ones for the sides and for the interiors of walls.

By the middle of the nineteenth century several brickyards in Nova Scotia had machines, worked by steam engines, which molded bricks and produced a product much harder and more consistent than handmade bricks.

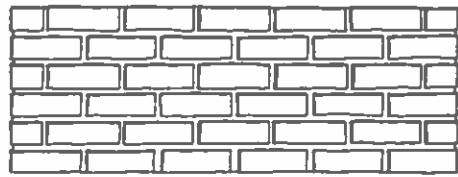
When looking at brick construction, here are some points to consider:

*Examine the quality of the brick. Are the bricks on the sides of the building more irregular in size and colour than those on the front? If the bricks have a very uneven surface or irregularities, like pebbles in the clay, they may have been hand made.

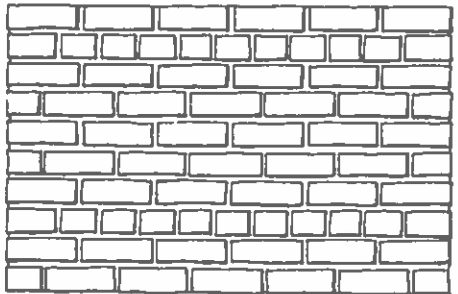
*The way that bricks are laid in a wall is called the "bond". There are many different bonds, some of which are easier and cheaper to lay than others. Also some bonds were more popular at various periods. When looking at a brick bond you will see either the side of a brick (stretcher) or the end (header).

*A similar mortar was used for brick and stone. If the bricks were good quality a very fine joint could be used, sometimes as little as one-sixteenth of an inch. If the bricks were not a consistent size a thicker joint would be necessary to keep the courses level.

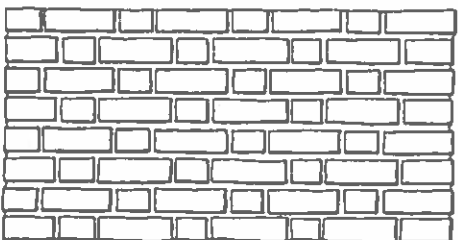
Brick Bonds



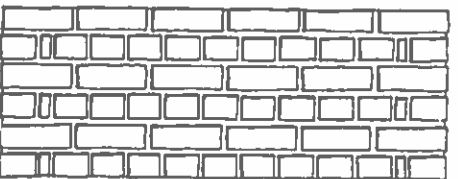
Stretcher bond is the commonest bond used today and the least interesting to look at. In modern buildings it is often used as a veneer to cover concrete block or other less attractive building material.



American common bond consists of a row of headers between approximately five rows of stretchers. This bond was very common in the last half of the nineteenth century. Sometimes you will find stretcher bond on the front of a building and American common bond on the sides and back.



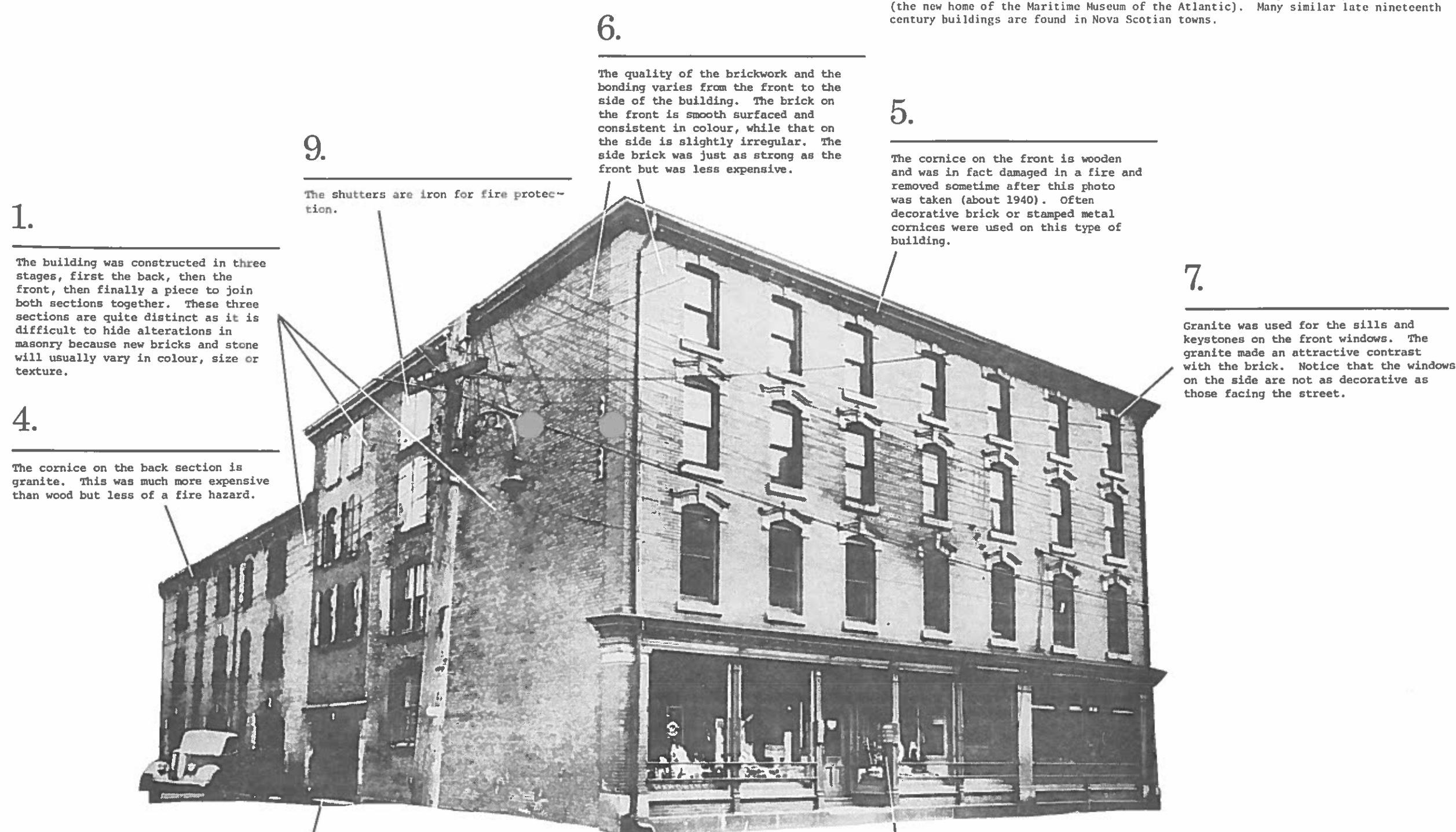
Flemish bond consists of alternating headers and stretchers. It is one of the most attractive bonds and was particularly popular in Georgian buildings. Some recent, "colonial" style banks were built with this bond. Notice the headers above and below a stretcher make a "cross".



English bond consists of alternating rows of headers and stretchers. This bond is not too common in Nova Scotia.

Looking at a Masonry Building

As an example of the variety of things you can look for when examining a masonry building, here is the William Robertson and Son ship chandlery in Halifax (the new home of the Maritime Museum of the Atlantic). Many similar late nineteenth century buildings are found in Nova Scotian towns.



1. The building was constructed in three stages, first the back, then the front, then finally a piece to join both sections together. These three sections are quite distinct as it is difficult to hide alterations in masonry because new bricks and stone will usually vary in colour, size or texture.

4. The cornice on the back section is granite. This was much more expensive than wood but less of a fire hazard.

9. The shutters are iron for fire protection.

6. The quality of the brickwork and the bonding varies from the front to the side of the building. The brick on the front is smooth surfaced and consistent in colour, while that on the side is slightly irregular. The side brick was just as strong as the front but was less expensive.

5. The cornice on the front is wooden and was in fact damaged in a fire and removed sometime after this photo was taken (about 1940). Often decorative brick or stamped metal cornices were used on this type of building.

7. Granite was used for the sills and keystones on the front windows. The granite made an attractive contrast with the brick. Notice that the windows on the side are not as decorative as those facing the street.

3. Granite was used for the sides and sills of the loading doors because it was stronger than brick and would be less likely to be damaged while moving heavy items in and out.

2. Granite was used for the foundation above ground. Below the surface less expensive and attractive ironstone was used.

8. The narrow columns are cast iron. They are common on this type of shop front but are often overlooked because they were made to look like stone or wood. Use a magnet to test for iron.