

Chapter 17

BUILDING WITH GLASS

GLASS is coming into its own as a building material for private homes, and if you want to build some interesting and decorative ideas into your home, you should consider glass as a medium. Structural glass, for example, can be

used for many purposes, and it can be useful as well as ornamental. A piece of structural glass in back of the kitchen range makes a surface that can be cleaned of grease and dirt in a matter of seconds with a damp cloth. Glass for



Fig. 1. When glass blocks are to be used for exterior walls, they must always be set up in mortar.

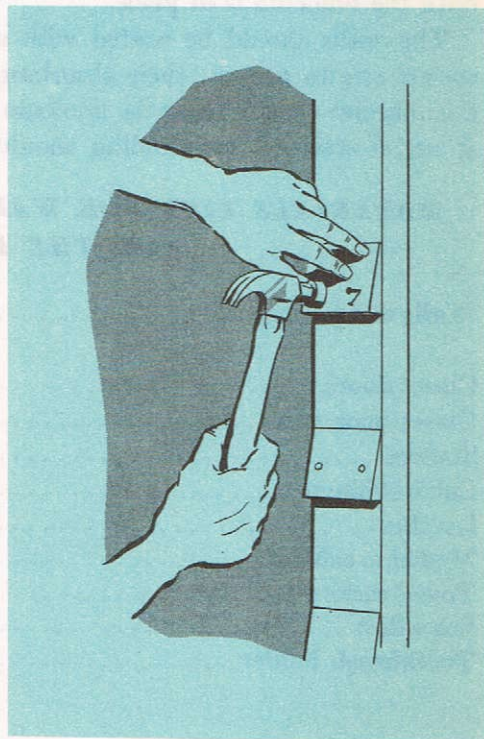


Fig. 2. Nailing the wood wedges to the frame.

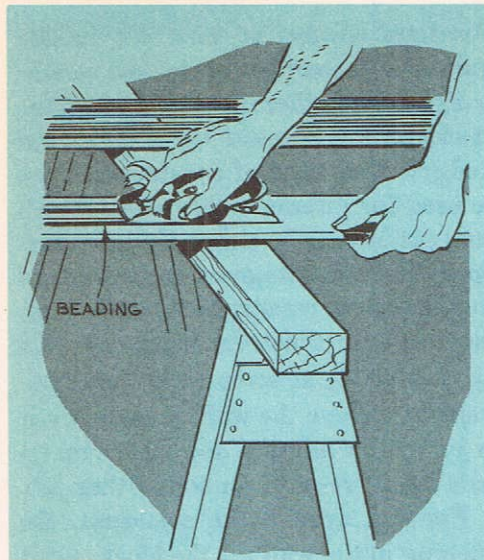


Fig. 3. Planing off the beading on one side of the starter strip.

this purpose comes mounted on plasterboard. The plasterboard sticks out beyond the glass for an inch or more, so the glass can be easily put in place by nailing the edges of the plasterboard to the wall studding. A full-length structural-glass mirror in the bedroom is well worth having. Structural glass comes either flat or corrugated and

Glass blocks can be used to very good effect for either inside or outside walls. They will not only bring additional light to dark rooms, but further, a glass wall or section of wall can have a very pleasing appearance.

These blocks are translucent but not transparent. In other words, while light will pass through them, it is not possible to see through them.

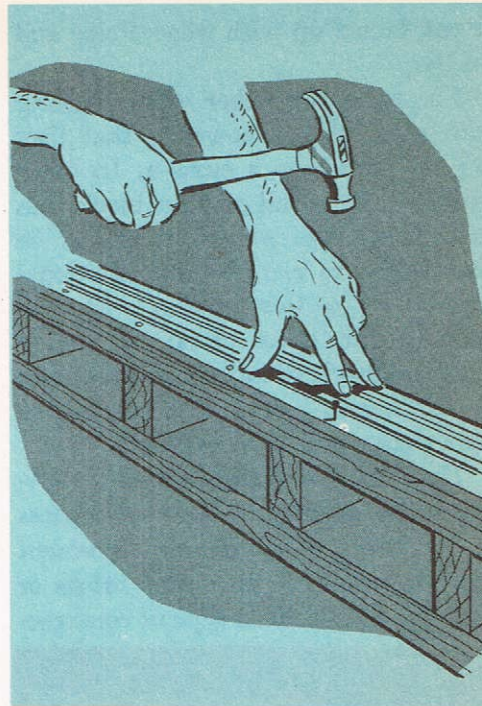


Fig. 4. The side of the starter strip with the beading removed should be placed face down on the sill of the opening and then nailed.

can be fastened by the method just mentioned, or by means of special wood-molding.

GLASS BLOCKS

Glass blocks are hollow inside and are tightly sealed around the edges, so that they have considerable value as insulation and can be used on outside walls without fear of excessive heat loss.

The standard sizes of glass block are $5\frac{3}{4}$ ", $7\frac{3}{4}$ " and $11\frac{3}{4}$ " square. The edges of each block are corrugated and sanded so that they will bond to mortar

or can be set up with wood strips and wedges.

You must remember when working with glass blocks, however, that they are no more than a curtain. In other words, while a wall of glass blocks can support its own weight, it cannot be counted on to provide any additional support. For this reason, when an opening for glass blocks is cut in either an inside or outside wall, it must be reinforced, just as if a window or door were going to be installed.

There are two methods used for setting up a section of wall with glass blocks. One is to set them up in cement mortar, just as if they were bricks or masonry blocks. This type of construc-

tion must always be used for outside walls as it is completely air- and weather-tight. The other method is to set the blocks up by means of wood strips and wedges. This type of construction can be used for interior work where a wall does not have to be either air- or water-tight. The advantage of the wood and wedge type of construction, aside from the ease with which the blocks are laid up, is that if, at some later date, you want to remove the wall, you can do it in just a few minutes and all the materials can be re-used for some other job.

For the work to be a success, the opening in the wall for the blocks must be cut to the correct measurement. If you want a wall of glass blocks, your

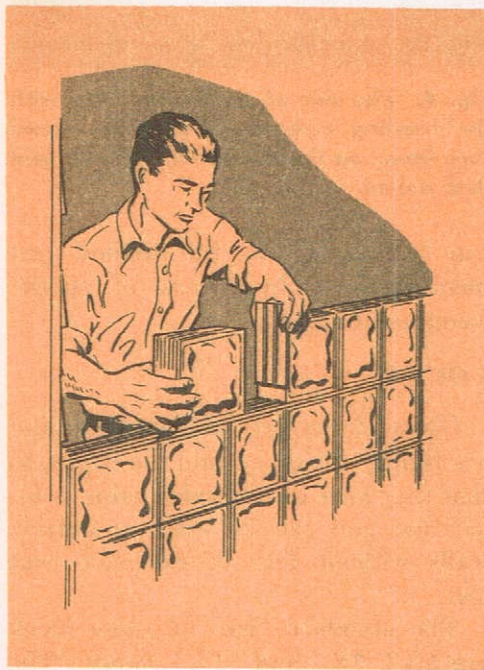


Fig. 5. Placing the wood strips in the vertical joints between the blocks.

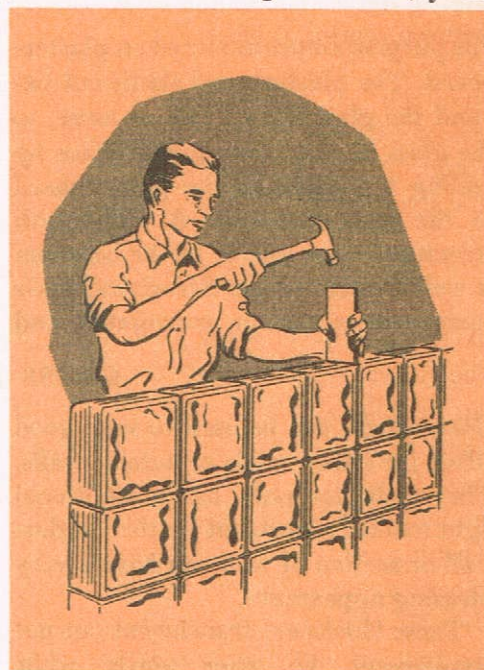


Fig. 6. Tapping down the strips of wood at the vertical joints.

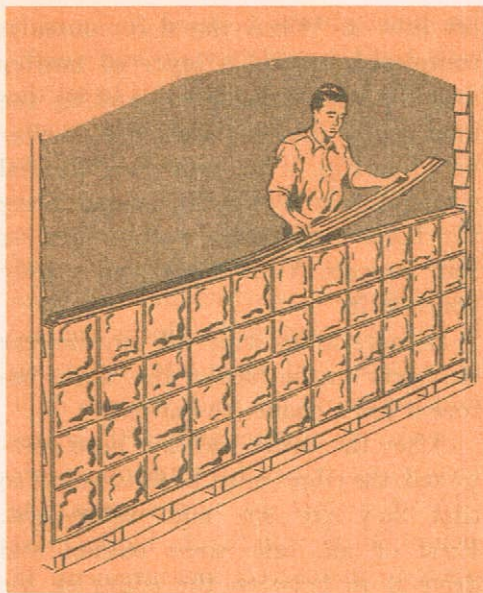


Fig. 7. Horizontal beading strips are used between courses of blocks.

first job is to get a table from your dealer showing the exact size that the rough framing of the opening must be for a section of glass blocks of the size

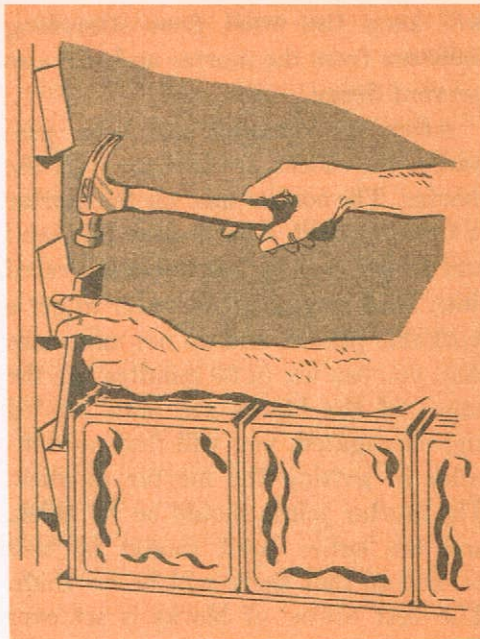


Fig. 8. As each course is completed, the wood wedges are driven down to hold the blocks in place.

you have chosen as the most desirable for your purpose.

SETTING THE BLOCKS IN MORTAR

After the opening has been made to the correct size, the next step in laying up the blocks with mortar is to make a chase in the top and sides of the opening. This can be easily done by nailing an exterior wood casing around the opening so that it will overlap the blocks at the sides and top by at least $\frac{3}{4}$ ". No chase is required along the sill. In fact, to make a chase at this point would be to invite trouble from moisture that might well seep in between the

blocks and the edge of the wood trim.

The next step is to line the sides and top of the opening with expansion strips. These strips are made of fiberglass and can be purchased from your local dealer. They are needed to take up the difference in expansion and contraction between the glass blocks and the wood framework around the opening. An expansion strip is not required along the sill. The sill should, however, be coated with asphalt emulsion. This

will keep the wood from absorbing moisture from the mortar and will also prevent decay.

After the opening has been prepared, the blocks are laid up with the mortar. The correct mix for the mortar is 1 part cement, 4 parts clean fine sand and 10 per cent by volume of hydrated lime. Add enough clean water to get a workable plastic, and do not mix more than you can use in 30 minutes. As the edges of the blocks are both sanded and corrugated, you will find no difficulty in getting the mortar to stick. The mortar joints should be $\frac{1}{4}$ " thick, and the entire joint should be well packed so that there will be no voids. The first course of blocks is set over the asphalt-emulsion base. Mortar is applied over the asphalt and the blocks

set into it. When the first course is completed, spread a layer of mortar over the tops of the blocks and lay the next course into this horizontal mortar bed. See Fig. 1. To provide additional strength, wire reinforcing is used along the horizontal joints every three or four courses. Your dealer can supply you with it.

Be careful to wipe off any mortar that gets on the face of the blocks before it has a chance to harden.

After the entire wall has been completed, the edges must be finished off so that they are air- and water-tight. First of all, take some oakum and drive it in between the edges of the blocks and the inside face of the chase. Finally, put caulking compound over the oakum.

INSTALLING THE BLOCKS WITH WOOD STRIPS AND WEDGES

As was mentioned before, this method of construction should never be used for exterior walls.

The size of the opening should be determined by checking over the manufacturer's table. Along with the glass blocks, you will also need a number of beaded wood strips and wedges. After the frame has been made, make sure that it is plumb and level. Next, nail wood wedges to the 2" x 4"s that make the sides and top of the frame. The point of each wedge should face up. The location of the wedges will depend on the size of block used. If $5\frac{3}{4}$ "

blocks are used, the wedges should be spaced 6" on center; if $7\frac{3}{4}$ " blocks are used, put the wedges 8" apart, and so on. See Fig. 2.

Now you have to prepare a base strip for the first row of blocks. This is done by taking one of the beaded wood strips and planing the beading off of one side. See Fig. 3. Put the strip on the sill of the opening with the beaded side facing up. This first strip should be nailed into place. See Fig. 4. Lay the first course of blocks along this strip. Be sure that the beading fits into the depressions made for it in the sides

of the blocks. Strips of wood, also with beading on them, are put between the blocks. See Fig. 5.

Tap these gently down into place. See Fig. 6.

When one course has been finished, lay a strip of wood beading across the top (Fig. 7) and then tap in the grooved wedges at the sides to hold the blocks securely in place. See Fig. 8. Continue up the wall in this fashion until the last course has been put in.

When the last course is in place, the header wedges are driven in. The wall is now complete except for the trim. The trim is nailed around the edges of the opening to cover up the wedges. Some 1" x 3" stock will be sufficiently wide for this job. If you wish, the wood trim between the blocks can be painted to give additional decorative effect.

Glass blocks set up in wood can be used to make the ends of coffee tables, bookcases and similar items.