

Punching Holes in the Wall

by Gordon Tully

One of the skills of a good designer is organizing windows on the exterior of a building in a handsome way. Another is placing windows in the walls of a room to enhance the space and make it easy to furnish. A supreme test of a designer is doing both of these at once.

Here are a few guidelines to help you get the windows right.

Furniture First

No one should design a house without drawing in the furniture. Ideally, the designer should know exactly how high and wide the major furniture pieces will be and where they will go. Barring that, windows should be placed to accommodate typical furniture arrangements.

In either case, windows should be placed so that walls are wide and high enough to furnish. This doesn't mean you can't put furniture in front of a window. You shouldn't be afraid to

place a window behind the spot for a couch, for instance, but if you do, set the sill high enough that people can operate the sash without moving the couch.

Sometimes furniture requirements will select a window location for you. In one case, I had to set a prominent dormer off-center from the prominent garage door below so that it would be on-center with the bed. In another, I had to compromise the outside spacing between two windows in order to provide room for a bed between them (see Figure 1).

Locating Windows in the Wall

When a rectangular shape occurs in a wall, the viewer's eye unconsciously extends all the edges and corners, in effect creating an invisible grid on the wall. If you bounce window heads and sills around in one room, it gets difficult to control the various lines generated by the edges.

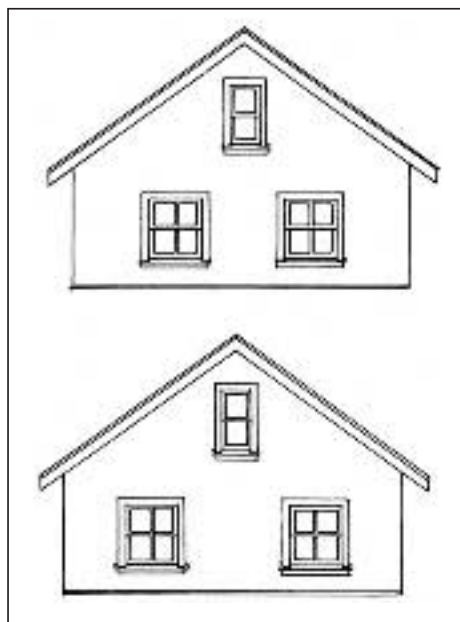


Figure 1. In the top drawing, the windows are spaced to create roughly equal wall segments, a desirable design goal. Below, the windows are respaced almost to the quarter points to improve the furniture placement for two beds inside; this compromise doesn't look bad and vastly improves the interior.

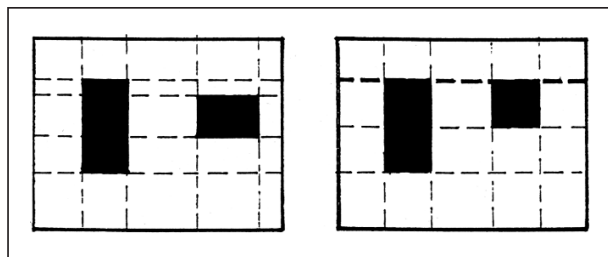


Figure 2. Windows create an amazing number of "invisible" rectangles as the viewer's eye extends edges to form a grid on the wall plane. Deliberately placing windows can achieve an orderly result, as in the drawing at right. The smaller window is half the size of the larger, is aligned at the top, creating a strong horizontal line, and is spaced symmetrically. The number of rectangles is reduced by two-thirds compared to the arrangement at left.

This doesn't mean window heads have to line up like washing on a line at door head height—although that is a worthy organizing principle I use a lot. Lining up some of the main grid lines with each other and with other architectural features will create order when there are multiple openings (see Figure 2). Not only does this minimize the number of grid lines, it also suppresses minor ones by emphasizing major ones.

There are two other common ways to deal with this phenomenon. You can subdivide the wall with posts, between which are placed infill panels, as in the Japanese and Modernist manners (see Figure 3). Or you can punch the wall with round or oval windows, which do not "radiate" lines except from their axes.

A couple of months ago I criticized round windows. But they sometimes do offer a wonderful way to punch a window into a complex shape; in such situations a square, octagonal, or rectangular window might create too much visual complexity as its corners interact with the various wall and roof angles.

Dealing with Glare

Glare is unpleasant and depressing. It is created when a relatively small, bright light source occurs in an otherwise dark room. To minimize glare, bring light in from several different directions, including overhead, and paint the room in light (highly reflective) tones. The size of the windows is not very important, except that a few very small windows in large dark walls create glare, as in prison dungeons. Grouping many small windows together, however, creates an excellent glare-free effect if the room is light in color.

Keeping Things in Scale

To get the scale right, don't make the glass lights too big. Small dividers—window muntins—were outlawed during the modern era, but they are back with the Post-Modernists and neo-Victorians, and never left the great world of the tract house.

These days, most people use those awful snap-in muntins over their multiple-pane glazing. A more aesthetic approach is to use single glass with

true divided lights, plus an extra clip-on pane. This, of course, eliminates sealed interior glazing and argon-filled units.

One compromise is to use only two or three true divided lights of multiple glass in a sash. I have also seen half dividers glued onto each side of a sheet of double-glazing. This makes you blink when you look closely, but is effective, if labor intensive.

Why not just use big sheets of glass? Because we seek to create an appropriate scale effect in the windows, which if undivided, look like "Little Orphan Annie" eyes—great, staring, blank holes like the eyes of a skeleton or the oversized windows in an office building. However, large unbroken sheets often look fine when they go to the floor, as in sliding glass doors, because they cease being eye-holes and become wall panels or doors.

Finding the Right Size

One of the principal errors made by naive designers is to assume that a big view demands big windows. Large picture windows overwhelm a small room and actually keep you from being intimately involved with the view. A picture window is like a movie or TV screen, making you a passive spectator. Everything is spilled out at once, with no surprise or adventure.

Smaller windows, however, draw you into a more active and pleasing interaction with the landscape outside. A small window placed on axis with the door into a room, for instance, will powerfully frame a view and attract you like a magnet. When you finally reach the window, the view is just as vast as it would be through a large window.

Maintaining Good Proportions

A useful rule for good proportioning is to repeat the same shape whenever you can. To compare two shapes, draw their diagonals—if the diagonals are parallel, the two shapes are the same, that is, of the same proportion and orientation.

In window design, the key visual elements are the individual lights of glass, the sash, and the overall window. Consider a double-hung window.

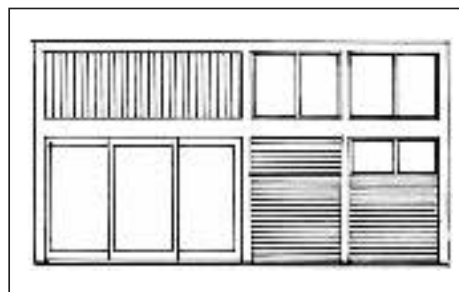


Figure 3. In Japanese and modern traditions, the rectangles created by holes in the wall are extended vertically and horizontally by posts and beams. This can achieve some subtle results and a restful and organized appearance.

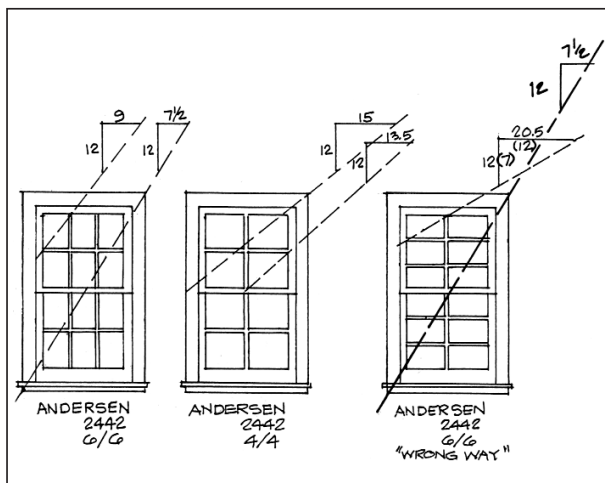


Figure 4. Muntins help break down the scale of a window and can create pleasing proportions. In a typical 6-over-6 sash (left), the diagonals of the individual lights roughly parallel the diagonal of the entire unit. In a 4-over-4 sash (middle), the almost square lights relate similarly to the almost square sash. In the right-hand drawing, the proportions of the lights in a "wrong way" 6-over-6 sash are almost exactly the same as that of the window, but the diagonals are not parallel, so the unit looks odd.

In a classical 6-over-6 window, the individual lights are similar in proportion to the overall window (see Figure 4). In a more contemporary 4-over-4 window, the lights are similar in proportion to the upper or lower sash. But in a 6-over-6 made two lights wide and three lights high, the lights, though in the same proportions as the overall window, are turned 90

degrees; since the diagonals are not parallel, they look odd, at least in a traditionally styled design. (A modernist might like the effect, however.)

High and Low

High windows are a terrific help in bouncing light around, creating interest and drama, and maintaining privacy. Remember two things: if the win-

dows brings in raking light, as in a clerestory, the plaster or wallboard should either be roughened or be absolutely smooth, to avoid showing up irregularities.

Also, remember that operable sash up high require remote operators.

These come in three flavors:

- Motorized operators for extended sash (casements, awnings, and skylights). These are expensive, unattractive, an inevitable maintenance problem, and sometimes indispensable.
- Remote cable operators. I have yet to get one in a house, but I spec them often and have bags of literature on them.
- Long poles with a loop or hook at the end. Anyone over 50 will remember these from school. They are a nuisance, but they work with any kind of sash.

You should also occasionally consider very low windows or skylights, especially in rooms up under the eaves. They give a childlike playfulness to the room, precisely because only a child or someone sitting on the floor like (or with) a child can look directly out of them. Make sure a child or pet can't get out! And make sure the glass is tempered, per code.

Another good place for short, wide windows is between the counter and overhead cabinets in a kitchen. ■

Gordon Tully is an architect practicing in Cambridge, Mass. He also teaches a course in residential renovation at the Harvard Graduate School of Design.