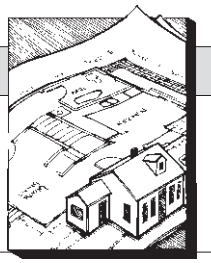

Choosing Windows Wisely

by Gordon Tully

Windows are one of the most expensive elements in a house: A good clad window, installed, costs over $30 per square foot. All the sadder, then, that very few houses have windows that are located and sized to maximum advantage.

The overall building design generally determines the basic size and location of windows and doors relative to sunlight, interior lighting, and view. In this column, I will outline some of the details you should consider when choosing the exact size and specs for your windows.

Choosing a Window Type

I like to solve practical problems first, then work with any visual problems caused by the practical solutions. Here are some points to consider:

- Today, it is easier and cheaper to make windows with large, unbroken panes than small panes. The reverse was true until recently, so all our historic precedents have subdivided windows, although later styles tend to have larger panes of glass than earlier ones.
- Modern projecting sash (casements and awnings) are six times as airtight as sliding sash (double-hungs and sliders). While a good modern sliding sash is much tighter than any sash from the past, I still find it smart to specify projected sash in windy locations and in highly energy-efficient homes.
- Double-hung and awning windows can be left partially open in the rain, while sliders and casements require overhangs for protection. Many so-called contemporary-style houses sport casements under clipped eaves, a deadly combination to be avoided at all costs.
- Casements can open 100%, while sliders and double-hungs open only 50%, and awnings never open enough to admit a real breeze.
- If a window opens onto a narrow walkway or stair, you should use sliding sash so the sash won't bonk passers-by.
- Screens can be annoying. If there is any view, it is good to have a few screened windows intended to be opened, and the rest fixed or unscreened to enhance the view.

Taking only these practical matters into account, one would (and I usually do) specify casement windows protected by an overhang — except where projected sash will be a problem — interspersed with picture windows or unscreened casements.

But there are matters of the heart to consider:

- A house with individual windows with large, undivided sash can look stark and industrial; it can lose its residential "scale."
- While undivided windows provide a clear view, dividers enhance the feeling of being inside — in touch with the elements but safe and protected behind a visual screen.
- An unbroken view can be monotonous.
- Many historical styles require subdivided sash.

There are a number of ways to deal with these problems without compromising the practical issues. My personal solution is to use a variety of casement and awning window sizes, arranging some of them in arrays. I often specify structural mullions to separate the windows in an array, rather than grouping windows tightly together (see Figure 1). The mullions and transoms separating the windows act like the grid of dividers in a Colonial window, only on a larger scale. This type of solution doesn't produce a true 17th or 18-century Colonial look, but it does evoke many 19th and 20th-century styles.

With any kind of sash, you can insert muntins in a variety of ways to provide a traditional-looking breakdown of the window's scale. While these subdivisions create a traditional appearance and help create a feeling of enclosure, there are many issues to consider:

- Even without muntins, a double-hung sash is automatically subdivided by the meeting rail.
- Inserts look phony, in my opinion; but they are the only way to subdivide some brands of windows, such as Andersen.
- Small, true divided lights in insulated glass are prohibitively expensive; and the muntins are very fat.
- At least one major manufacturer tries to imitate true divided lights in full-size insulated panes: Pella inserts metal dividers between the windows and the half-muntins glued to either side. If these prove to be durable, maintenance-free, and reasonably priced, they should offer a good solution.
- If you do succeed in truly dividing the sash, you burden the owner with keeping the muntins painted.

If you want muntins, installing an undivided pane outside a single-glazed divided pane is one good compromise. The opposite system, with the muntins outside, puts the unsightly clips (which hold the undivided pane) on the inside, but avoids the "Little Orphan Annie" blank eye look of an undivided window outside. However, it brings back the maintenance problem of exterior muntins.

There is no right answer to the subdivision issue. Consider the options carefully and make tradeoffs with your eyes open.

Setting Sill and Head Heights

There are many issues to consider when deciding the height for sills and heads.

Head alignment. Must window and door heads line up? This is standard procedure, based mostly on economy (certainly not on historical precedent). Though it is the universal standard for doors, 6 feet 6 inches or 6 feet 8 inches is really too low for most window heads, because it limits upward line of sight. I like to set window heads at about 89 inches (7 feet, 5 inches). Then a 60-inch-high window has a sill at standard table height (29 inches), while the sill of a 52-inch-high window is just

Figure 1. *This facade from a recent project incorporates standard Andersen clad sash without any surrounding wood trim. It would have also been easy to work out the design using traditional windows with dividers. Here, modular windows are grouped to break up the house's long side. I always design windows from the inside out, and often (though not in this design) add exterior horizontal trim to organize the resulting hodgepodge.*

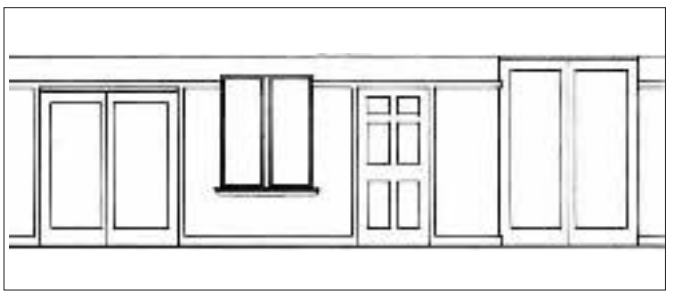

Figure 2. *If you raise windows to provide good views, you need to do something inside to relate the high window heads to the door heads. One way is to use trim to carry the door-head casing around the room. (Make sure all the side casings reach the same height.) Eight-foot (96-inch) patio doors, however, will cut through this 80-inch trim line. If that's the case, they'll look best if you omit casings and simply return the plaster or drywall at the jambs and head, as in the patio door at right. In either 80-inch or 96-inch doors, you'll probably need an extra piece of trim to span the gap between the door head and the ceiling or trim line, as shown here in both the short (at left) and tall patio doors; these look best if set slightly behind the wall plane.*

above the standard 36-inch-high counter height.

If window and door heads don't line up, what do you do about the appearance on the inside and outside? First, don't try to hide the problem. Inside, for instance, you might run a trim band above the windows, thus demonstrating that the lower door trim is intentional and not an error (see Figure 2, previous page).

Eight-foot high exterior sliders or terrace doors look better with high window heads than do the more standard 6-foot 8-inch-high models. Another trick is to put a transom or panel over the door to raise the door head even with the height of the window head.

Sightlines. Vertical interruptions bother us less than horizontal ones do, because our eyes can see around vertical breaks, and we can move our heads to the side easier than we can raise or lower them. So it makes more sense to use repeated vertical bars to break up a window than to use a grid of bars or a horizontal bar. At least one window catalog (Andersen) shows useful diagrams for setting the sill and head heights of windows based on sitting and standing eye levels.

This is only part of the problem, however. People want to be able to look up and down, not just straight out. The actual top of the glass should be well above the eye level of the tallest usual occupant. My eye level is 71 inches, and to me, windows with a glass line at 77 inches cut off the top of my view, like the brim of a hat; 84 to 89 inches works much better.

To take advantage of the higher glass line, the eaves must be higher than normal. One test I use is that someone inside next to the window should be able to look up 30 degrees from the horizontal before their view is cut off by the eaves. Prairie and Bungalow styles, which feature low, broad, and often elaborate overhangs to enhance a feeling of "insideness," don't allow this. But Prairie-style houses compensate for the loss of sky view with continuous windows, which allow the eye to sweep the horizon.

A horizontal bar right at eye level can be exceedingly annoying, or it can go unnoticed. I am not sure why this is, but I'll offer a theory: If the bar is part of a larger array of windows separated by mullions and transom bars of roughly equal size, you see the array and do not notice the bar. But if the bar is the major divider, for instance between the sloped and vertical glass in a sunspace, the bar should not be at eye level.

At the sill, sightlines are very important. In living and eating spaces, if you can't see out horizontally while sitting, you will feel as if you are sitting in a pit. Some windows can be high, of course; but at least one should let you see straight out.

Sill Height Constraints

Before deciding on window size and location, always lay out the furniture. If a couch must sit against a window, that window might warrant a higher sill, so the couch back will not interfere with the curtains. If a table sits next to a window, the sill might well be at 29 inches (typical table height) or 30 inches (which allows the tabletop to run under the overhanging window stool). If the window is opposite a kitchen counter, it is common to set the sill a few inches above the counter. But consider a design in which the counter itself becomes the window sill: this gives a sense of continuity, which can make a small space seem larger.

Low sills can keep a small room from seeming closed in. On upper levels, however, remember that kids can fall or climb out of low windows. Either avoid them, use fixed, tempered glass, or protect kids with a barrier or fixed screen.

Sometimes in renovation work, you need to place a stair or laundry against an existing window with a low sill. Don't hesitate to do this, as there is ample historical precedent. Be sure to leave a pit between the window and the obstruction big enough to clean and wide enough to operate the sash (or remove the storm sash from the inside). And make sure the pit walls are painted, since they will be very obvious from the outside. ■

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