The Great Mystery of House Design: Scale

by Gordon Tully

I have often tried to condense a book-length topic into a single monthly column, but I have never tackled one quite so daunting as "scale." Yet nothing is more basic to design.

All the different definitions of scale have something to do with relating the apparent size of a building with the real size of a human being. This is important because people find it disturbing if they discover that a building is not the size they thought it was.

For example, you can't make a large house cozy by reducing everything by half: it just becomes a big dollhouse. Conversely, you can't create a sense of awe by doubling the size of everything in a building — it looks like an Alice-in-Wonderland fantasy.

To appreciate the real size of a building, you need to have something "human-scaled" that you can relate to.

For about 2,500 years, Western architecture was dominated by the classical orders (Doric, Corinthian, etc.). The proportions of these orders were more or less fixed, so the columns and entablature (the horizontal bands of detail running over the columns) in a small building were an almost exact small-scale replica of those in a large building.

Classical architects were keenly interested in the human body. So how did they relate their buildings to the humans who used them? One key is that there are always elements in a building that people must use and which therefore can't vary much in size. Among these are steps, railings, and windowsills. As long as these elements are not artificially "scaled up" for effect, you can use them as rulers to set the real size of the building.

Doors can set a lower limit on the size, since people can't comfortably go through a door lower than about 6 1/2 feet high. But doors in classical buildings can be twice that high, so you need other clues to tell you how big things are when monumental doors are used.

Texture and detail help set the scale, especially in houses. Bricks have a known size (except for the awful, scaled-up "jumbo" bricks sometimes used for economy). Even the elongated, thin Roman bricks help you set scale. Siding can help, but you need to be cautious about the spacing. Wide composition siding on small houses distorts the scale, as does narrowly spaced bevel siding on a big house.

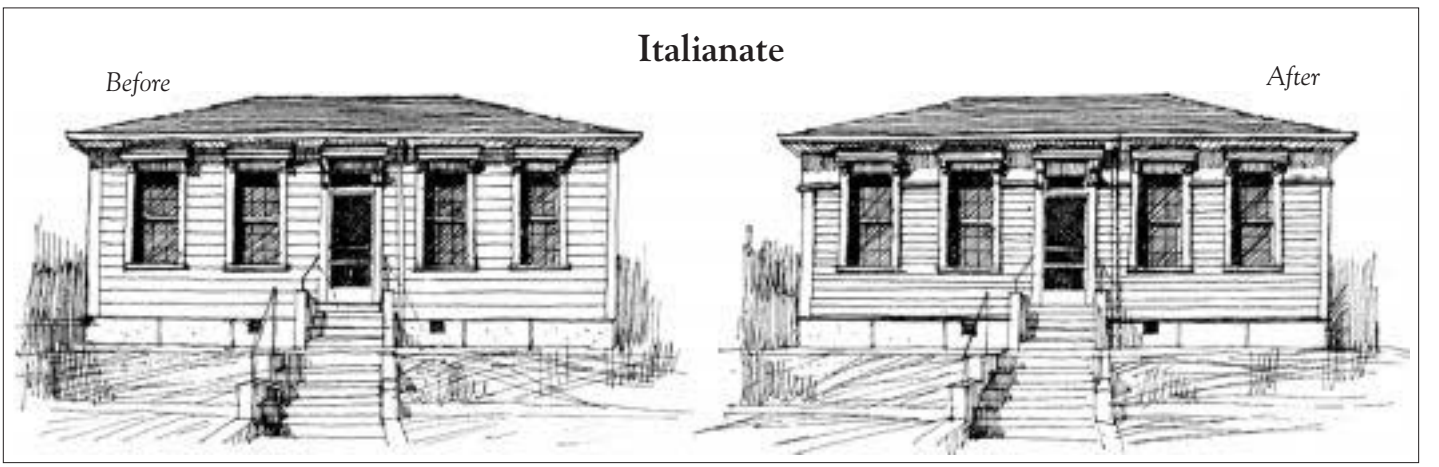
Yet oversized siding materials can be used to good effect, if you contrast them with ordinary siding to show by comparison that the other materials are "out of scale" — that is, exaggerated.

Besides bricks and siding, small elements like gutters and downspouts, mailboxes, light fixtures, and door numbers play a role in setting the scale. So does landscaping: Leaves and flowers have known sizes.

Looking at the building as a whole, two key scale-giving devices involve horizontal lines. First, each story of a building needs to be defined in some way, using windows, doors, a horizontal trim band, or an offset in the wall. Second, key lines that establish ordinary window or door height can run through tall windows, creating a transom. This device allows you to use tall windows while maintaining an intimate "residential scale."

Another clue to scale is the width of windows. Many classical buildings include tall, narrow windows, establishing that the windows are ordinary size, only taller. When you scale windows up proportionally in both directions, their shape doesn't provide any hints about their real size.

So far I have mentioned the techniques for setting the scale of a building. There is a deeper matter, however: What "scale" do you want to achieve? Residential or monumental, for example? To understand this most basic meaning of "scale," we need to look at another design rule. The overall form



This mid-19th century "Italianate" style house, at left, looks like a little house with a tiny door. The trim band and material change added at door height, at right, solve the scale problem. I also show narrower siding. The 8- or 9-inch boards on the original exacerbate the scale problem.

of a building needs to be subdivided, with the subdivisions organized into dominant and subordinate forms. My favorite metaphor for this requirement is that a house must be like a family, with mother and/or father elements surrounded by children.

The basic subdivision in most houses is that between roof and walls. The standard ranch house is simply divided this way, the only other major scale-giving feature being an emphasized front door. I don't think this is enough — the usual ranch always looks to me like a model of a house and not the real thing.

Once you have subdivided the overall building, you usually must subdivide each element again. For example, the wall beneath the roof may need a porch, or recess, or projecting wing. The roof itself may need dormers, or a smaller adjoining roof over a projecting wing, etc. Continue this process until you arrive at something (like a door, window, balustrade, or stairway) that has "human scale" and establishes the real size of the building.

When you experience the building, your eyes (and your body, as you move through it) automatically take in each level of subdivision, working down from largest to smallest until you focus on key scale-giving elements.

In the traditional Colonial, the key element is almost always the front door. In Queen Anne houses, bungalows, and the like, it is often a front porch. Prairie School houses, like other modern styles, often suppress the doorway, with the building composed as if it were a giant piece of sculpture, relying on window patterns or decorative trim to set the scale.

Now we are ready to look at the difference between the intimate "residential scale" and the more abstract and intimidating "monumental scale" of a big office building or factory. The key to achieving residential scale is to keep subdividing until you get down to something small and intimate, like a brick or a shingle.

A good example involves windows. Monumental windows often have enormous panes. In a small house, if all the windows have big panes, you have "overscaled" a crucial element. The windows are like L'il Orphan Annie's eyes, blank and lifeless. The easy remedy is to insert muntins, but another approach is to create a mix of large and very small windows, showing by contrast how big the large ones really are.

Probably the best way to learn how to "set the scale" of a building is to look at examples that don't work, and try to set them right. So I will cut short the words to leave room for illustrations (derived from *A Field Guide to American Houses*, by Virginia and Lee McAlester, published by Alfred A. Knopf). Learning to recognize "good" scale will vastly increase your enjoyment of architecture, and maybe help you design and build better. ■

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Mansard

Window muntins don't help this eclectic "Mansard" house from the '80s. Accepting (with a gulp) the mansard roof and the arched windows, the main scale problem is the arch over the door — but the windows also need a transom bar, as shown, to cue the viewer that the widows are oversized.

Gambrel

The "el cheapo" gambrel, simply pasted onto this two-story production house, creates a gable end which has no clear division between the stories. Combined with the wide siding, it makes the house seem very small. Also, the low garage eaves, combined with the low lights in the garage door and the high dormer window sills, make the main house seem "monumental" in scale. The fix: Use narrower siding, move the break in the gambrel roof inboard, lower the dormer windows to match those on the gable, raise the garage roof, and lift the garage door lights to the top.