# Is Manufactured Housing in Your Future?

by Gordon Tully

I have a new job with an architectural firm that specializes in the more technical aspects of architecture — solar design, energy analysis, building systems, all areas of special interest to me.

I am currently working with manufactured housing, a term properly reserved for a factory-built house that rides to the site on its own frame and wheels, unlike "modulars," which ride on low-boy trucks. A shorter term for manufactured housing is "HUD-code" housing, reflecting the important fact that these units have been regulated by HUD since 1974 and are exempt from local building codes. You are allowed to call them "mobile homes" but not "trailers" — to the industry, it's a four-letter word.

HUD-code units are in principle very similar to modulars: Few ever move more than once, and some manufacturers build almost identical products for the two market segments. Yet HUD-code units command a startling 30% of the single-family housing market, about six times that of modulars. While there are many reasons for this situation, I believe two are crucial.

## Performance-Based Innovation

The HUD code is largely performance-based, which encourages innovation. Freed from requirements to "meet code" in a prescriptive fashion, designers do what they do best: Solve problems. Almost every complaint I have heard from product designers about the code administration process can be traced to a prescriptive requirement. Performance codes give wings to invention, while prescriptive codes stifle it.

Enforcing performance codes is difficult, of course, and beyond the time and skill of a local building inspector — hence the prescriptive nature of normal codes. The HUD code is administered by third parties who are specialists, with technical backup. Plants and individual units are inspected and unit designs approved by these specialists. You have to run any innovation through the mill, but at least there is a mill ready to process it.

Manufacturers can work out complex tradeoffs — such as the choice between stiffness and cost — by trial and error (build one, drive it, fix it, improve the next one), tuning the quality level to the market. If the unit is finished with taped and spackled gyp board, floors and sidewalls must be beefed up to control over-the-road cracking, which adds cost. If you want cheap, you get panelized walls, which can flex at the joints.

The industry has developed a healthy ethic of competitive sharing. One builder figures out a new way of doing something, exhibits the design at the next show, and within months, the entire industry is using it. Patents are scorned.

A second key aspect of the industry is the sharp division between builders and retailers. Once out the door, most units go to a retailer's lot, where they are sold like cars. The retailer usually takes care of installation.

Cost-cutting is promoted by this system, for good and evil. Manufacturers can tune their highly standardized products to an exquisite level of value engineering. Very low nonunion factory wages and an efficient assembly process cut labor costs to around 8% of the product's cost, compared with 40% or more for a site-built structure. Thus, trimming material costs is an obvious strategy. Some roof trusses have struts made from 2x4s ripped in thirds. A typical axle complete with tires, springs, and brakes costs about $300.

*This two-section "double-wide" shows that within the limits of a one-story ranch design, a HUD-code home can be made to look very similar to an ordinary site-built home. As you add amenities — wider overhangs, steeper pop-up roofs, permanent foundations with low sidewalls, better detailing, custom materials — HUD-code home prices approach those of panelized and modular homes. But the advantages of the HUD code remain.*

## The Image Problem

Today's HUD-code units, though far better than the old mobile homes, still share some of their image problems: overcrowded "parks," units scattered around the countryside like junk cars, silly gee-gaws attempting to make the typically low-pitched, eaveless roofs look "house-like." Under consumer pressure, installers often cut costs to the detriment of the unit's longevity: We all read of improperly secured mobile homes demolished by hurricanes and earthquakes. As a result,

## Improved Manufactured Houses

*These elevations illustrate how HUD-code designs can be tweaked to produce a nicer-looking house. A slightly steeper roof pitch from the factory and the site addition of gable trim and a front porch (below) give the home a "custom" feel.*

communities often legislate against all forms of manufactured housing, associating it with undesirable developments and occupants.

Such bans miss the point that HUD-code construction can provide another way of getting to a desirable end: housing that a community agrees is appropriate, and that buyers can afford. The pressure is on communities to accept designs that are cheaper to make in the factory and require minimal on-site work — simple boxes with low-pitched roofs and no overhangs. The pressure is on the manufacturers to make products that will fit in — more complex forms, with steeper roofs, generous overhangs, and good siting.

Each community strikes its own balance between appropriate development and costs, and many mistakes are made. Housing of all types, not just HUD-code, ends up in the wrong place because of low consumer standards and intense cost pressures. HUD-code units get the brunt of the criticism not because they are inherently "tacky," but because they dominate the low end of the housing market.

In my view, the industry will have to get over its allergy to context. Houses need overhangs, contextually appropriate form and materials, and sensible site planning. These requirements are compatible with low-cost construction; it is simply a matter of giving these community concerns priority over the wall-mounted beer taps and jacuzzis that embellish even the lowest-cost units.

Companies toward the high end of the market (many of which also make modulars) are responding to these needs. A well-built modular/HUD-code design, a 1,200-square-foot two-bedroom cape with a fully expandable attic, oak trim, and no texture on the gyp board, can be purchased at the factory for just under $30,000, including window coverings. Some HUD-code units, notably in California, are indistinguishable from site-built developer housing.

### What's in It for You?

For nonfactory home builders, these developments have significant implications. As the industry evolves and matures, you are more and more likely to find HUD-code units in your future. What is an appropriate response to this clever new way of driving site-builders out of business?

I suggest that the more you know the better you will fare. If you think of the HUD-code industry as a resource, you may find that its products may help you deliver an affordable house at a competitive price and still make a living at it.

There is plenty of demand for customizing standardized products; the cost of the unit often represents much less than half the total project cost, when land, transportation, site development and on-site modifications are included. Installing mobile homes has traditionally been a down-and-dirty kind of work, but I suspect it will need its share of craftsmen, certainly at the high end.

Finally, big developers are beginning to buy HUD-code products, and they will help bring HUD-code housing up to a level where it can compete head-to-head with panelized, modular, and stick-built homes. Once these products are perfected, there is plenty of room for small builders to use them on difficult or isolated sites, where special foundations and on-site modifications are needed.

As Americans have to make do with less, we must make choices about where we place our priorities. HUD-code manufacturers may not have made the ideal tradeoffs, but they understand the process and are trying to build a good product for a minimal cost. You can help make their products better, and more to your liking, by learning how to work with this crazy, fascinating industry. ■

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