Residential Housing Market

Residential housing design affected by energy crunch

Steel Framing: Less Costly Than Wood

Steel framing in residential construction costs up to 20 percent less than wood, according to a cost analysis study just released by Zinc Institute Inc. (ZI). The study was made to determine and compare both material and labor costs for framing single family housing in galvanized steel and wood. The comparative data obtained will enable contractors and builders to better evaluate the galvanized steel framing alternative for single family home construction.

The survey was confined to single family dwellings in one-story, two-story and bi-level configurations in five regions of the United States and one in Canada. The framing examined was floor joists and exterior and interior wall studs. Framing costs here compared in a representative city in each of the six regions. The regions and cities selected were as follows:

<table>
<thead>
<tr>
<th>Region</th>
<th>Representative City</th>
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<tbody>
<tr>
<td>A. Northeast</td>
<td>Pittsburgh, Pa.</td>
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<tr>
<td>B. Southeast</td>
<td>Atlanta, Ga.</td>
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<tr>
<td>C. Midwest</td>
<td>St. Louis, Mo.</td>
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<tr>
<td>D. Northwest</td>
<td>Portland, Ore.</td>
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<tr>
<td>E. Southwest</td>
<td>Tulsa, Okla.</td>
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<tr>
<td>F. Canada</td>
<td>Toronto, Ontario</td>
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</table>

The framing examined was floor joists and exterior and interior wall studs. Framing costs here compared in a representative city in each of the six regions. These regions and cities were selected to provide a representative cross section of varying economic, material availability/cost, and labor cost. Surveys were conducted to determine local lumber and galvanized steel prices in the various economic regions. Material costs were then calculated for an identical wood and galvanized steel framed house. Labor requirements for framing interior and exterior walls and floor were determined locally in the various regions. Addition of the material and labor costs gave the total cost for framing the prototypical unit in the six regions.

Results: Galvanized Steel Framing Costs Less

The galvanized steel and wood figures are directly comparable since they represent costs for identical units, designed to the same standards, in the same locations. In addition, both galvanized steel and wood material prices have been discounted for quantities representing the same number of housing units.

For a single story home, galvanized steel framing costs, including both material and labor, were below those for wood framing in four of the six regions selected. For example, in Atlanta, galvanized steel framing costs were about 10 percent less than those of wood. In Pittsburgh, the representative city in the Northeast region, galvanized steel framing costs were about 14 percent below wood framing. And for Tulsa in the Southwest region, a 17 percent cost saving with galvanized steel framing was noted. In Portland, where very low cost lumber is available, the total cost of galvanized steel framing is higher than wood. However, in all six areas, the labor cost for erecting galvanized steel framing is substantially below that for erecting wood. As wood prices rise when construction increases, galvanized steel framing will become even more of a cost saving alternative.

Energy: Catalyst For Change in ’80s

The soaring cost of energy is the catalyst for sweeping changes in the housing industry, according to a survey of home builders.

All sectors of the new home market have been affected by the energy crunch, and even more severe changes are expected five years from now. Builders report that basic housing designs, the way buyers shop for a home, the way homes are sold, financing techniques, and the affordability of new homes all face significant modifications.

A national survey of builders, commissioned by The DOW Chemical Company, disclosed that:

• 84% of builders foresee basic changes in the housing product within the next five years

• the primary change predicted by builders is in smaller, more compact housing

• virtually all builders rate attic and wall insulation as more important to their buyers than traditional new home amenities such as central air conditioning and kitchen appliances

• 97% of builders said energy-saving features would be important to them personally if they were buying a new home

This study is the third of its kind on home energy issues commissioned by Dow. As in the two previous studies of homeowners and real estate professionals, in-depth telephone interviews were conducted by an independent research firm, Opinion Research Corpor-
ation of Princeton (NJ). National and regional samples were compiled from a survey of 743 builders in 30 major metropolitan areas.

“The objective of our builder survey was to collect data that would be useful to, and possibly be acted on by housing industry principals to help their market in a volatile, conservation conscious decade,” said Robert J. Schallenkamp, residential product manager at Dow.

The survey results show builders have not only responded to consumer demands for energy-efficient housing, but typically are doing so at no extra cost to buyers. Virtually all builders include attic (96%) and wall (98%) insulation along with caulking and weatherstripping (96%) as ‘standard in their homes. More than eight of ten builders also offer storm or thermal-pane windows (88%) and storm or insulated doors (82%) at no extra cost.

**Built-In Benefits**

In addition to including energy-saving features as standard, builders are merchandising these built-in benefits more strongly with their customers. Eight of ten builders now emphasize home energy efficiency as a sales point, as opposed to only 18 percent five years ago. And 88 percent are convinced that energy efficiency will be even more important as a selling point five years from now.

This sales emphasis mirrors what is most important to buyers today—controlling energy consumption. Eight-four percent of builders report that current home buyers are more concerned about energy costs today than they were several years ago, when dishwashers and central air conditioning were more likely to influence the buying decision than insulation.

The importance of energy-saving home features to buyers is most evident when compared to the appeal of traditional new home amenities. Asked to rate the importance buyers place on a variety of home features, two of three builders (67%) ranked attic insulation as extremely important, followed by wall insulation (63%). Kitchen appliances and central air conditioning—long regarded as most popular with new home buyers—were next at 49 and 42 percent, respectively. Storm windows were cited as extremely important among buyers by 43 percent of builders surveyed. Other traditional amenities such as a fireplace (22%), patio (18%) and landscaping (15%) were ranked at the bottom of the buyer’s shopping list.

The drive for energy-efficient housing has led builders to insulate virtually every potential home energy loss area, including slabs and foundations. Three of four builders report that they offer insulating sheathing as standard to their buyers. In addition to its application below-grade, insulating sheathing is being used by builders in place of fiberboard and plywood sheathings to achieve greater R-values, according to Housing Industry Dynamics, Inc., a Philadelphia-based market research firm that specializes in the housing industry.

The alternative to using insulating sheathing over standard 2” x 4” wall framing would entail a switch to 2” x 6” wall construction with extra cavity-fill insulation—a costlier alternative and one that would be less effective thermally.

“Builders had to control operating (heating and cooling) costs or risk losing customers,” said Benjamin F. Leaman, chairman of Housing Industry Dynamics. “The increased use of insulating sheathing...
shows builders are responding to consumer demand for well-insulated homes; they are taking the most thermal and cost-effective approach possible”

**Insulation Most Important**

Builders recognize that energy efficiency and insulation are synonymous to their customers. This has been reflected in what buyers will pay more for, what they talk most about, and what they are most aware of.

According to builder estimates, a well-insulated home would be worth on the average nine percent more to their buyers than a similar home that is not as energy efficient. Twenty-nine percent feel it would be worth at least 11 percent more.

The importance of insulation to home buyers is underscored by the fact that most builders (62%) regard it as the single most important energy-saving feature to their customers. The type of heating and cooling system was considered to be most important to buyers by 24 percent.

In addition, three of four builders believe the average home buyer is somewhat to very knowledgeable about the different insulation products and methods on the market today.

This knowledge apparently is incorporated when consumers are house hunting. Eighty-two percent of the builders surveyed cited insulation as the most discussed energy-saving feature by buyers considering a new home purchase. Sixty-eight percent reported questions on the type of heating and cooling system offered; 56 percent asked about windows and doors.

“Insulation is neither a glamorous nor readily visible new home feature, yet it has become an absolute necessity in today’s energy environment. Buyers understand and want well-insulated homes, and they are making it a top buying priority when shopping for a new home,” said Schallenkamp at Dow.

Builders apparently are aware of the increased conservation consciousness that is being exhibited across the country. Virtually all (95%) builders report that they and their sales staffs feel confident at being able to handle questions from buyers regarding energy-efficient homes.

**Reduced Rates**

Builders are overwhelmingly in favor of assistance from lenders in meeting the demand for energy-efficient homes. Eighty-five percent of builders were in favor of preferential financing for the purchase and construction of such housing. In fact, nine of ten builders expressed a willingness to adapt their current building practices in order to qualify for lower interest rates.

However, most builders seem hard pressed to find such programs. Only six percent of builders nationwide said they are aware of lenders in their communities who offer lower mortgage rates to home buyers for the purchase of energy-efficient homes. Even fewer (2%) report the availability of discounted rates for construction loans.

Not surprisingly, with the inflationary economy and rising mortgage rates of the housing slump of 1979, discounted mortgage rates were one of the most popular techniques builders used to attract customers to their home models or subdivision sites. Traditional techniques such as newspaper advertising (45%) and word-of-mouth referrals (37%) were still the most popular with builders.

“It is apparent from our survey results that builders have made a serious commitment to upgrading the energy efficiency of housing in the future,” said Schallenkamp. “But builders cannot do it alone. There is a need for active involvement from all sectors of the housing industry to achieve the goal of reduced home energy consumption.”