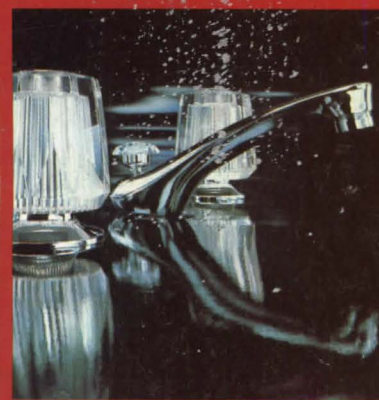
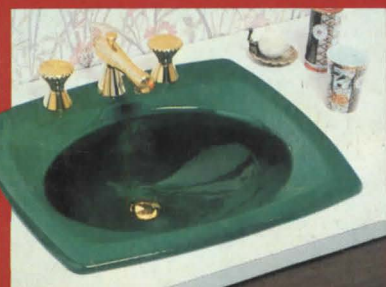


housing

Product Preview for 1981





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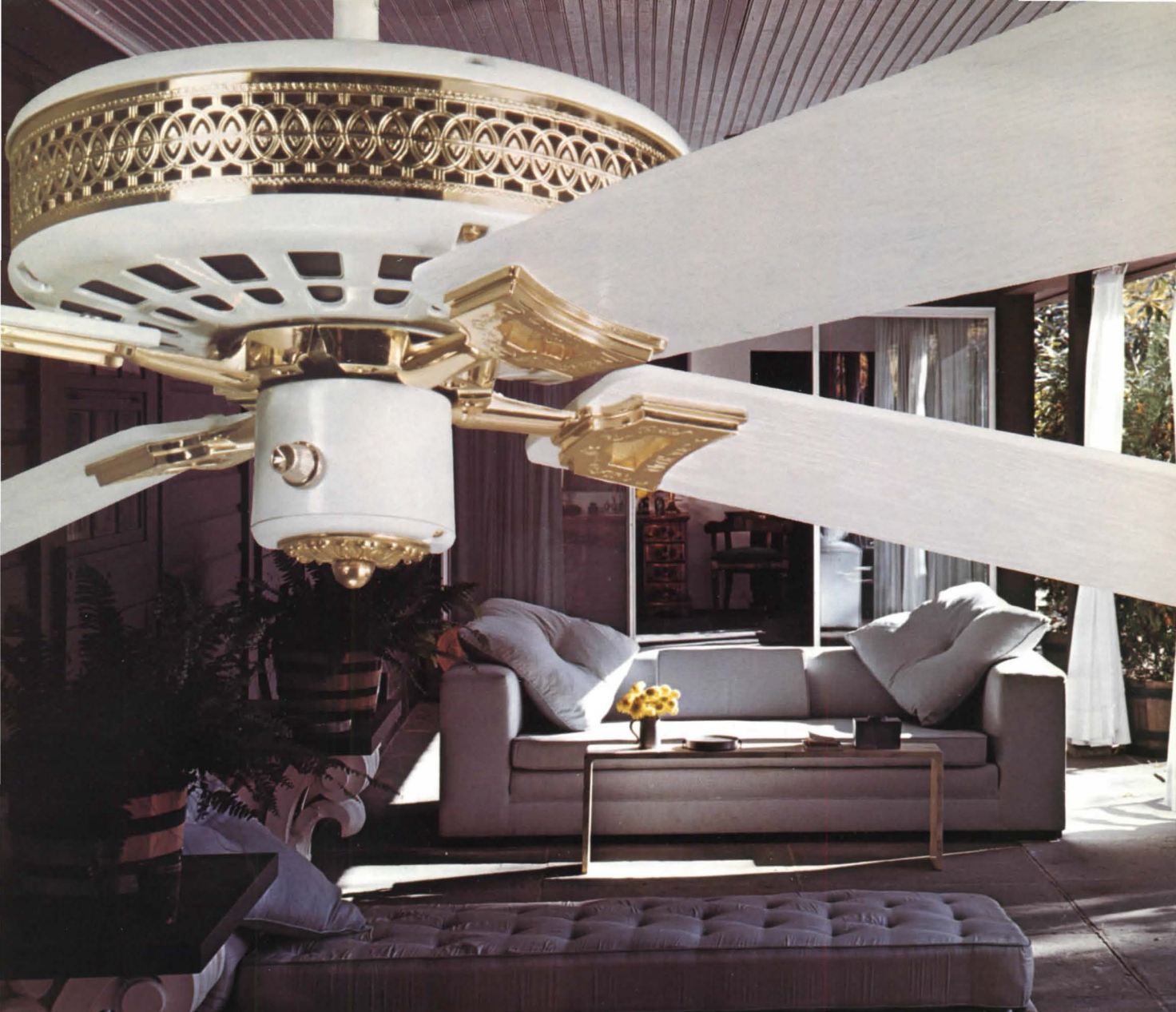
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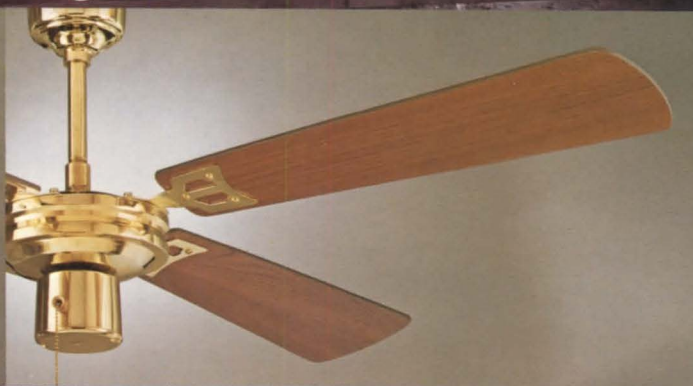
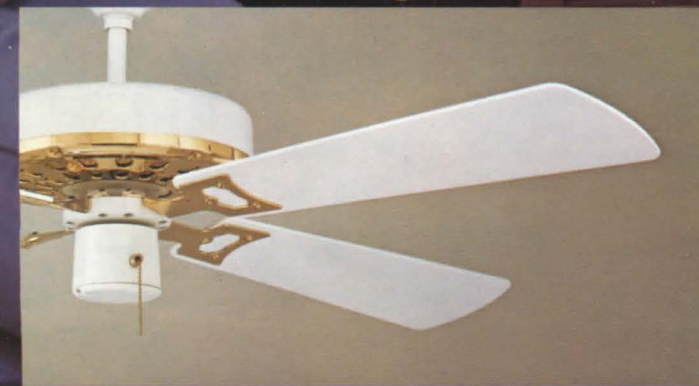
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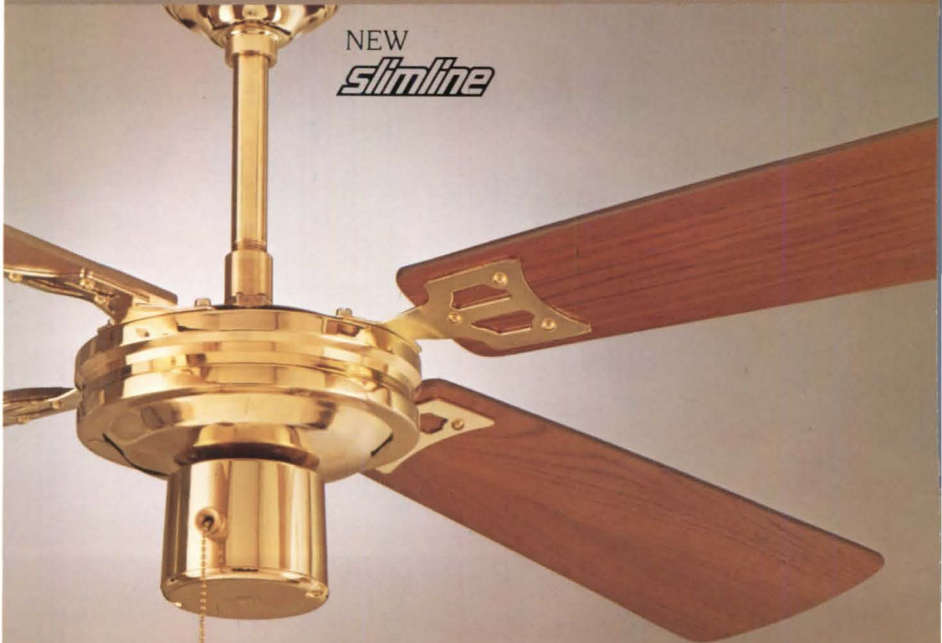
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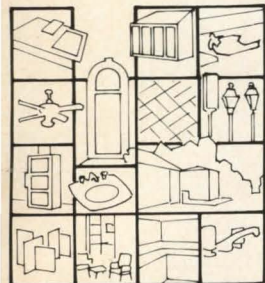
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NEW
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Fourteen of the 193 items featured in our Product Preview for 1981. Cover design by Jan V. White



p. 85 p.90 p.102 p.112
p.104 p.87 p. 88 p. 93
p.106 p.94 p. 99 p. 87
p. 99 p. 84

CODES	39	Unreasonable codes? Take 'em to court!
COMPANIES	22	Why Canadian builder Costain builds in the U.S.
CONDOS	34	Oregon developer trots out a new concept
	34	Fast route to a one-day sellout
COSTS	39	Builders show the feds how to cut costs
DESIGN	72	The 300-sq.-ft. home and other ideas for the '80s
ENERGY	44	Solar credits for builders: Out West, some; elsewhere, none
	78	New show house is a showcase of energy-saving ideas
LEGISLATION	18	Eleventh-hour HUD bill cuts Sec. 235
	18	Congress orders mortgage bond phase-out
	18	New state laws counter local slow-growth ordinances
	20	Some HUD programs to change—but which ones?
MANAGEMENT	60	Four builders set strategy in an unpredictable market
	62	George Writer: Mixed use in Denver
	65	Nelson Chatelain: Nostalgia in New Orleans
	68	Carl Griffith: Prefab in Watertown, Conn.
	70	John Morrison: Mobile homes in Eugene, Ore.
MARKETS	51	Housing Demand Index
MERCHANDISING	74	A 466-sq.-ft. apartment with built-in sales appeal
MONEY	9	Experts say fixed-rate mortgages will survive
	14	High rates have stalled an expected recovery
	14	Want more sales? Here's the answer
PEOPLE	24	Jay Janis resigns from the Federal Home Loan Bank Board
	30	Richard W. O'Neill, former <i>House & Home</i> editor, dies
PLANNING	31	Council on Development Choices has new suggestions on density
PRODUCTS	83	New crop of building products for 1981
DEPARTMENTS	7	Editor's page
	108	Reader service card
	127	Classified
	132	Advertisers index
	134	Literature
NEXT MONTH		Merchandising ideas to help you cope with an on-again, off-again market . . . Will leased land provide the answer to affordability? . . . Passive solar in a new guise: The Envelope House . . . plus a new quarterly feature HOUSING's Construction Cost Guide

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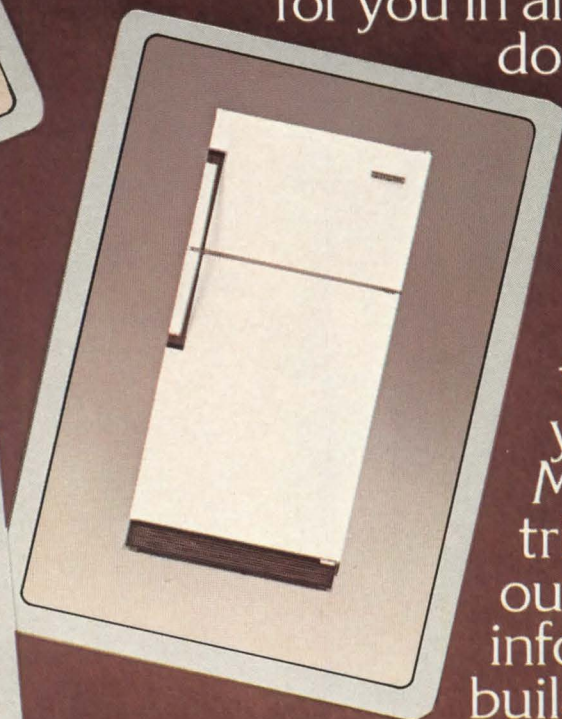
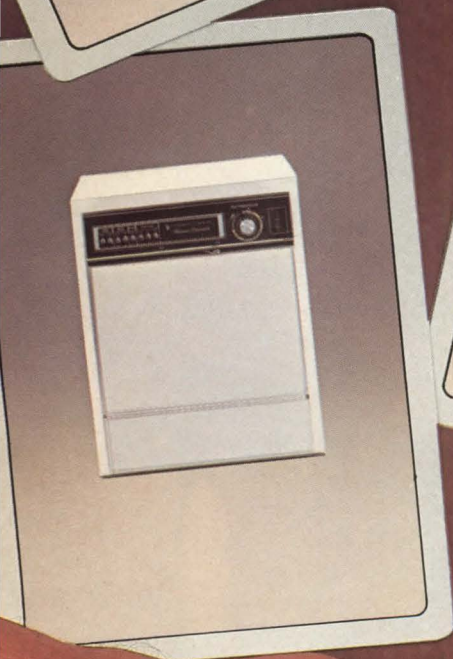
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Coping with change: The future belongs to the nimble



Once upon a time the business of merchant building was pretty simple. Lay out a single-family subdivision on quarter-acre lots. Furnish two or three models if the job was large enough to justify them. Arrange for 20-year, 80% mortgages at 7% or 8% interest. And sell to first-time buyers — mostly young couples with kids. Well, that's no longer how it is, as any builder knows. Hasn't been for years, in fact. Merchant building has become a complex business fraught with uncertainty. And, as we start the second year of the '80s, changes come thicker and faster than ever.

Take all those new financing methods, for example. Add the new buyer types — such as singles and career couples — with their special expectations. Consider, too, the growing stature of housing as an investment — partly a plus, of course, but also a minus because inflated values have made it harder than ever for first-time buyers to buy. Throw in an unpredictable — and unprecedented economic climate, with the prime rate breaking the 20% barrier twice in less than nine months. And don't forget (as if you could) the ever-longer delays in getting projects approved by local officials.

Given all those changes, it looks as if survival in the '80s will go to the nimble — the builders who are flexible, adaptable and willing to examine unorthodox ideas like those put forth by marketing expert Ken Agid in his look at future housing (p.72). Agid, a Californian, speaks of 300-sq.-ft. living units, "the one-person kitchen" and borrowing planning approaches from the designers of yachts. Outlandish? Perhaps. But much of what he predicts shows up in a Washington, D.C. rehab project — a seedy hotel recycled into condo apartments and offices. (p. 74).

Agid sees change as an opportunity rather than a problem. So do the four builders whose story starts on page 60. We asked them how they are changing their ways to deal with an uncertain future. Their answers are as varied as their locales — Watertown, Conn.; Eugene, Ore.; Denver and New Orleans. One explores a joint-venture with a mobile-home maker. Another launches a mixed-use, in-city project. The third takes on a prefab line and also goes back to his first love — remodeling. And the fourth enlarges his houses while his competitors are shrinking theirs. In fact, the four builders have little in common except successful track records and a willingness to try something different. Will that willingness get results? HOUSING will follow up in future issues to find out.

Richard W. O'Neill

The housing industry lost a forceful spokesman and critic when Dick O'Neill died in late November (see p. 30).

Dick was the chief editor of this magazine for six years. He also organized and led industry roundtables, served on President Johnson's National Commission on Urban Problems, published a weekly letter of news and opinion and was an advisor to builders and building-product manufacturers. And he wrote five books — the latest of which, *The Homebuyer's Guide for the 80's*, appeared only weeks before his death.

Dick was not the sort of man you forget. He was physically imposing, mentally quick, highly articulate and an expounder of ideas that aroused strong reactions — pro and con. He was, in a word, an original. For that reason above all others, he will be missed by an industry that is one of the last bastions of individuality.

— JOHN F. GOLDSMITH



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Experts say fixed-rate mortgages will survive

Despite all the gloomy predictions, don't assume too quickly that long-term, fixed-rate mortgages are dead and gone. Even though the variable-rate instrument offers some much-needed relief for S&Ls—which are now staggering under the impact of high rates—economic realities suggest that fixed-rate mortgages are likely to be around for quite a while.

The most telling reason is this: Long-term, fixed-rate instruments play a vital role in the U.S. capital markets.

Investor concerns. Homebuyers are no different from corporations in one respect. When they take on a sizeable debt, they want to be confident they can repay it. And the best way to do that, of course, is to have a predictable, set schedule of payments that they can relate to expected income.

On the other end of the financing process are investors, who also have long-term aims or obligations. Retired people, for example, want to set up a steady income stream. And pension funds need investments whose returns they can be assured of when they have to pay benefits 20 or 30 years hence.

"The fixed-rate instrument pervades the marketplace from the seller all the way down to the buyer," says B. Daniel Evans Jr., the E. F. Hutton and Co. vice president who watches the bond

market. "I don't believe floating-rate notes are going to replace the traditional instruments."

His assessment is particularly compelling for housing at this point, as the S&Ls expansion into consumer loans, corporate debt and other areas makes housing more dependent on the same capital markets as corporations.

To get the money for consumer loans, the S&Ls will have to sell off many of their home loans as soon as they make them. And the buyers of those loans will likely be pension funds and similar investors.

More variables. Without a doubt, new loans like variable-rate mortgages will be used increasingly in the years ahead. For self-defense, thrift institutions want as many as possible of the new loans that they retain in their own portfolios to have variable rates. That way, when the rates they must pay to attract savings rise, they will be able to count on a like rise in the interest they earn from mortgages.

Federal regulators are moving swiftly to give both commercial banks and thrifts an easier time in writing flexible mortgage instruments, with less restrictive limits likely soon.

Advance Mortgage Corp. of Detroit even goes so far as to say that by the end of the decade, mortgages of 30-year duration will no longer be offered. Advance predicts that the typical

mortgage will give the lender an option to require payment at the end of seven to 10 years. Even in this scenario, however, the monthly payment schedule would be the same as that of a conventional 30-year mortgage. And the actual life of most mortgages is only seven to 12 years, anyway.

Political fix. Aside from the economic reasons for the continuation of long-term, fixed-rate mortgages, there are political reasons they will survive even though their numbers may diminish. The standard mortgage "is just too popular" to disappear, says Jay Janis, ex-chairman of the Federal Home Loan Bank Board (see page 24).

That popularity is reflected in the consumer pressures on regulators to limit the up-and-down movements of payments on mortgages. For example, the regulators presently will let the rate rise by no more than 5% over the mortgage's life, and in increments of no more than 1/2% every six months.

Scrambling. Political and investor problems with the variable-rate mortgages explain why lenders have been scrambling for new ways to preserve the fixed-payment characteristics while still incorporating some insurance against sharp rate savings.

One such solution: the shared-equity mortgage [HOUSING, Sept., '80], which gives the lender a slice of the gain in price of the home purchased with the loan.

Another solution: a fixed-payment mortgage with variable rates. It was described by John G. Medline, president of the Wachovia Bank and Trust Co. of Winston-Salem, N.C. at a recent hearing held by banking regulators on variable-rate mortgages.

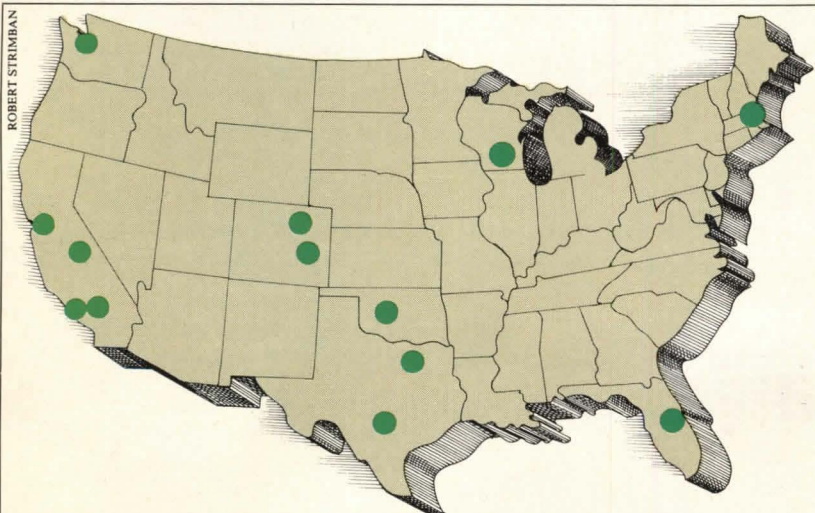
Medline said that since last October, Wachovia has been writing loans whose payments remain level as interest rates rise or fall. What changes is the proportion of monthly payment going to interest: It is adjusted to reflect the prevailing interest rates in the money markets.

Conceivably, the shifts—when upward—could mean that payments would not cover all of the interest due, and a negative amortization would occur. As a result, the principal balance outstanding would increase which would mean the bank was lending the homebuyer more money automatically. This would extend the life of the loan beyond its original term.

At least one prominent S&L official, Leonard Shane of California's Mercury Savings and Loan has endorsed this approach.

—G. DAVID WALLACE

McGraw-Hill World News, Washington



Best bets: now Boston's in there

In this quarter's Housing Demand Index, Boston is among the lowest-risk markets for builders (as long as interest rates don't shut the industry down). Reasons include a booming high-technology industry and local government cooperation.

Other good bets: Oklahoma City; Los Angeles; Orange County; San Antonio; San Jose; Dallas; Fresno; Madison; Seattle; Denver; Orlando; and Colorado Springs.

Want to learn more? See the Index, which starts on page 51.

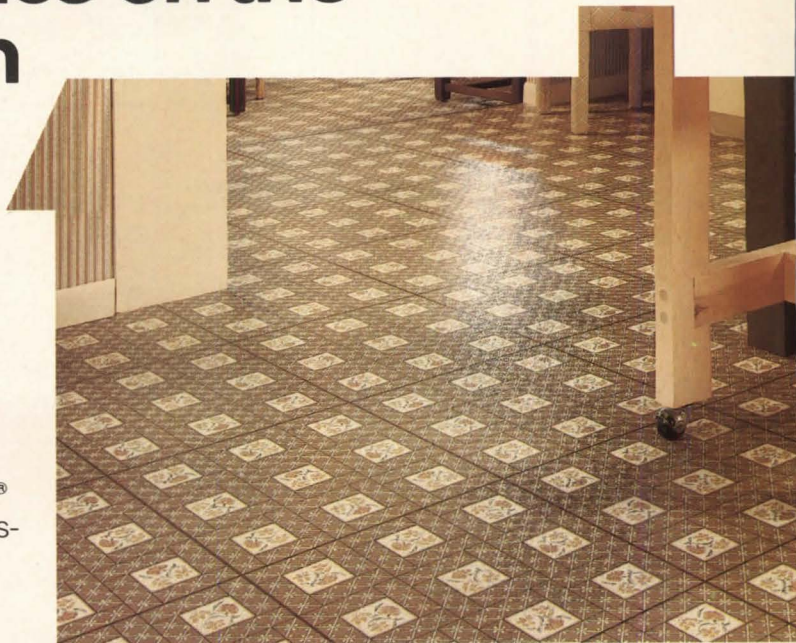
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Rates stall an early recovery

The outlook for housing in the next quarter or two has turned from tempered optimism to whole-hearted gloom. Even though forecasters are standing firm on predictions of 1.4 to 1.7 million starts for 1981, the rebound is not expected to start for awhile.

Forecasters give these reasons:

- The Reagan administration's avowed commitment to knocking down inflation, which probably means continued high interest and mortgage rates.

- The Federal Reserve Board's inclination to keep rates up to push inflation down.

- The rapid rise in the prime rate during the fourth quarter. On Nov. 1, it stood at 14½%; by mid-December, it had skyrocketed to a record 21%.

Builder pessimism. The NAHB has changed its tune to take note of the rapid rise in interest rates. In October, forecasters at an NAHB outlook conference predicted a "slow but steady recovery during 1981." Now, says Chief Economist Michael Sumichrast: "We really don't have much hope for the next four to six months."

To show how much interest rates affect housing starts, NAHB points to what happened in October. As rates U-turned upward, starts (seasonally adjusted) U-turned downward by 4.4% (*as did sales; see story below*).

Fed policy. Right now the housing industry has little to be happy about with the Federal Reserve Board, which can have a major effect on the industry's health.

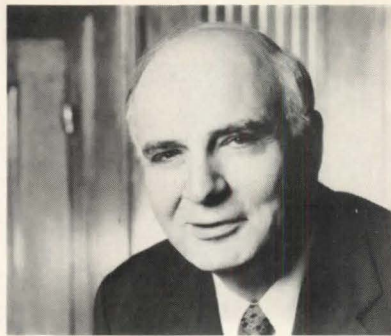
Want more sales? Here's the answer

It's just as you've suspected all along: offer an interest rate the homebuyer can live with.

That's one finding of Advance Mortgage Corp.'s quarterly survey, *U.S. Housing Markets*. The survey found that when rates were in the neighborhood of 12% in August and September, sales shot up dramatically, which points to a high level of pent-up demand.

But in October, when rates crept up above the consumer threshold (13½% in most areas, 14% in California), the party was over. Sales and starts were both cut—"as with a knife," one observer says.

Ready. "How big is pent-up demand?" asks Advance's Robert S. Mylod. "Here's an indication. Last summer, when the market rate was 12¼%, a Detroit lender tried a one-



Fed's Volcker:
Cut inflation first

Economists who recently heard Fed Chairman Paul Volcker testify before the House Banking Committee believe that the Fed is prepared to knock the economy back into a recession—if Fed officials think that's what it will take to calm inflation.

Stalled recovery. The National Association of Realtors blames the Fed for October's decline in new and existing sales—which was, it notes, the third straight monthly drop for new-home sales.

Jack Carlson, NAR chief economist, says that further credit tightening could lead to another housing downturn. He predicts that mortgage rates won't likely drop below the 13%—14% range for the next two years.

Another projection that spells hard times ahead: New York financial analyst Henry Kaufman of Salomon Bros. recently predicted a new peak for the prime rate in 1981. His prediction was 25%. —D.O.L.

week experiment with an 11½% rate. His applications increased 40 times."

But when the lender reverted to 12¼% the following week, applications fell almost to the former level.

Interesting ideas. Many builders are reducing costs to buyers by somehow making financing more manageable, says Mylod. One "almost standard" builder strategy is to buy down mortgage rates.

California builders have come up with some innovative approaches:

- "Silent Seconds," 20% second mortgages on which no payments are due for two years, on top of a 70% first mortgage.

- Shared equity mortgages, in which a private investor will make the buyer's down payment in exchange for a percentage of the appreciation upon sale of the house. □

BRIEFS

Housing starts stayed even from October to November, at an annual 1.5 million rate, the Commerce Dept. reported. Single family starts fell by 5%. Existing home sales fell 3% to 3.2 million, reported the National Association of Realtors.

New home sales fell in October for the third consecutive month, Commerce reported. New sales were down 4.4% from September, to a seasonally adjusted annual rate of 548,000 single family houses.

New construction spending inched up 0.4% in October, but residential construction rose 1.9%, Commerce said. Non-res spending fell 1.2%.

Construction contracts let in October were almost identical to those for September, showing a general stagnation of the construction recovery that had begun, reported McGraw-Hill's F. W. Dodge division. Non-residential contracts were up 6% in dollar value from October 1979, while new residential building contracts were "virtually even with the year-ago amount."

A solar survey by the President's Council on Environmental Quality shows positive public regard for solar development. The survey found that 61% of those polled believed solar was the energy option that the country should concentrate on developing; a majority polled have heard about the various technologies available for home use; and that 20% of those polled were considering a home solar installation soon, or had already done so.

A paid vacation means something other than what you might think in Stuttgart, Germany, where widows, widowers and other elderly singles are paid to vacate their apartments by the local government. The reason: to make space available for young families. The elderly singles are paid up to \$5,000, *Parade Magazine* reported, and move in with relatives or to municipal homes for the elderly. West Germany has a severe housing shortage—more than 1 million units, *Parade* reported.

Correction

A merger mentioned in "Ahead for S&Ls: a lesser role in housing" [*HOUSING*, Dec. '80] was incorrectly identified. The merger made by California's Glendale Federal Savings was with San Mateo-based West Coast Federal Savings and Loan, not with the Los Angeles-based Coast Federal Savings, as the article stated.

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This 30" modular cooktop range comes with both easy-to-plug-in grill and griddle elements for grilling, barbecuing, frying and even stir-frying—right on the cooktop, at the same time. Plus two conventional surface elements, a full-size self-cleaning oven and a convenient storage drawer. And you'll find install-

Today's homemakers are looking for versatility in their kitchens. Include the range with more great ways to cook than they can shake

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Eleventh-hour HUD bill cuts Sec. 235 funding

The new HUD appropriations bill severely scales down one major housing effort: an earlier HUD move to subsidize up to 100,000 starts under Sec. 235. The bill, passed in late November, funds all HUD programs for the fiscal year which began Oct. 1.

In a pre-election move, the Carter administration tried to stimulate the industry, but was unable to do so because HUD did not have the money to fund the more liberal Sec. 235 program—created by Congress earlier this year—to subsidize home ownership by higher-income families.

The Congressional conference committee which hammered out the final funding bill allocated money for a more conservative Sec. 235 program. It will cover only 15,000 to 20,000 units for lower-income families.

The scaled-down Sec. 235 subsidizes mortgages up to \$55,000 and brings buyers' interest rates down to as low as 4%; down payments are only 3% to 5%.

Give and take. For most other HUD programs, the conferees split the difference between what the House and the Senate had voted in their respective bills. However, conferees adopted the Senate's higher figures for two programs:

- \$125 million for HUD's solar energy and conservation bank, expected to begin operations next summer.

- \$5.7 million for the department's Fair Housing programs.

Other HUD programs fared this way:

- Low-cost direct loans for housing for the elderly received \$855 million.

- Community Development Block Grants were given \$3.77 billion.

- Urban Development Action Grants were kept at \$675 million.

- Rehabilitation loans of \$186 million were approved.

- Research and development received \$44.6 million—a 10% cut.

Reductions. Budget-cutters in

Congress are requiring the administration to make across-the-board cuts totalling 2%—a goal that the new Reagan team is expected to approach with enthusiasm.

The Office of Management and Budget, an administration agency, will wield the knife, but no single program is to be trimmed more than 3%. For HUD, though, that totals more than \$700 million—and most will come from subsidies. —DONALD O. LOOMIS

McGraw-Hill World News, Washington

Mortgage bond phase-out ordered

The fog has lifted over Congress's intentions regarding tax-free mortgage revenue bonds—and it's bad news for housing.

The bonds, which typically fund mortgages three to four percentage points below the market, have been under threat of a total ban since legislation was first proposed in April, 1979. Now, legislation passed last month permits the bonds currently in the pipeline to proceed. New issues may be floated under certain restrictions for two years. But the bonds will be barred almost completely after Dec. 31, 1983.

Despite charges that the bonds often subsidize middle-income buyers, the new rules have no explicit income limits for borrowers.

Restrictions. Here are the new

rules for bond issues planned for between Dec. 31, 1980 and Dec. 31, 1982:

- Houses funded generally cannot cost more than 80% of the average area price, and mortgagors cannot have held other mortgages within three years.

- No state and its localities may issue mortgage bonds totaling either a) 9% of the average principal on mortgages let in that state in the preceding three calendar years or b) \$200 million, whichever is greater.

- The effective rate charged on loans may not exceed by more than 1% the actual yield on the bonds, and the loans may be made only for rehab or new construction—not for the rollover of existing loans. —STUART JACKSON

McGraw-Hill World News, Washington

New laws counter local production curbs

California has passed a spate of housing bills that, among other things, counter slow-growth ordinances and focus attention on local housing needs. The new laws, effective January 1, are aimed, in large part, at putting more affordable housing within the reach of Californians. Specifically:

- When challenged by developers, localities must now demonstrate that slow growth ordinances are necessary to protect the public health, safety or welfare.

- Cities and counties may no longer ban mobile homes, and local agencies must let mobiles be secured to permanent foundations.

- State housing programs are changed to permit 1) low-interest loans on mobiles for low and middle-income buyers and 2) state-subsidized financing of mobile-home parks and subdivisions.

- Cities and counties are required to zone enough land for residential use to

keep housing production in balance with job-creating efforts and projected population growth.

- Insurance companies may now invest in second mortgages and wrap-around mortgages, thus increasing available funds for these instruments.

- Cities and counties must 1) include housing programs in their general plans; 2) consider regional housing needs in their planning and zoning decisions; 3) zone enough land for residential use to keep housing production in balance with job-creating efforts and projected growth.

Support. The California Building Industry Assn. lobbied hard for the bills. Says BIA legislative advocate Norman Jachens: "All these bills are a start in the right direction, although we realize we can't get all the world in one legislative session."

The BIA is most pleased with the anti-slow-growth bills. BIA President George Gentry points out that slow-

growth ordinances not only boost housing prices but also tend to foster disputes between government bodies.

Despite earlier opposition, most local governments were in general agreement with the bills in final version. Support also came from two state legal-aid groups.

Opposition. The bill requiring local governments to put housing programs in their general plans and to consider regional housing needs met strong opposition from the state's 58 counties. Builders credit its passage to Assemblyman Mike Roos (D-Los Angeles). Roos says local governments can do their share to curb spiraling land costs by ending delays in the permit process, and allowing higher densities plus more reasonable development conditions. He notes that his bill and the others enacted are the first state legislative moves that govern local decisions affecting housing. —TOM ARDEN

McGraw-Hill World News, Sacramento

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We did it to impress home buyers.

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Our Solid State Electronic Control Dishwasher is so advanced, it gives your buyers almost unlimited control over cleaning levels and energy use.

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HUD program changes ahead—but which ones?

Wide-ranging proposals to change federal housing policy substantially have been offered to President-elect Reagan by his Urban Affairs Task Force. The panel, headed by San Diego Mayor Pete Wilson, made recommendations including:

- Lumping present subsidy programs into single block grants that would give a locality greater control

over how the money is spent.

- Replacing present Sec. 8 rental subsidies with a "voucher" system to give eligible families "much greater freedom of choice" in picking a place to live.

- Giving builders an up-front capital grant for subsidized housing, instead of continuing the "enormously expensive" subsidy of mortgage payments

over 30 to 40 years.

If these recommendations are adopted, they would be the most sweeping changes in housing policy since President Nixon decreed his famous moratorium in January, 1973. This moratorium cut off all ownership and rental subsidies, and led to the adoption by Congress of the major programs that HUD manages today.

Rent control refusal. Another significant recommendation: That the federal government withhold all grants to cities which have rent-control laws. The House of Representatives passed such a constraint in its version of the 1980 Housing and Community Development Act, but that provision was removed in a compromise of the House-Senate conference committee [HOUSING, Oct. '80].

Several other task force recommendations would not have such a strong effect on HUD programs. These include:

- Adopting the Kemp-Roth tax-cut bill, which would reduce income taxes for individuals by 10% a year for three years, and

- Adopting the Kemp-Garcia bill, which would allow the creation of tax-reduced "enterprise zones" in blighted urban areas.

Costs unknown. Mayor Wilson had no cost figures on any of his task force proposals, but he acknowledged that some could cost more at the outset than the programs that they would replace.

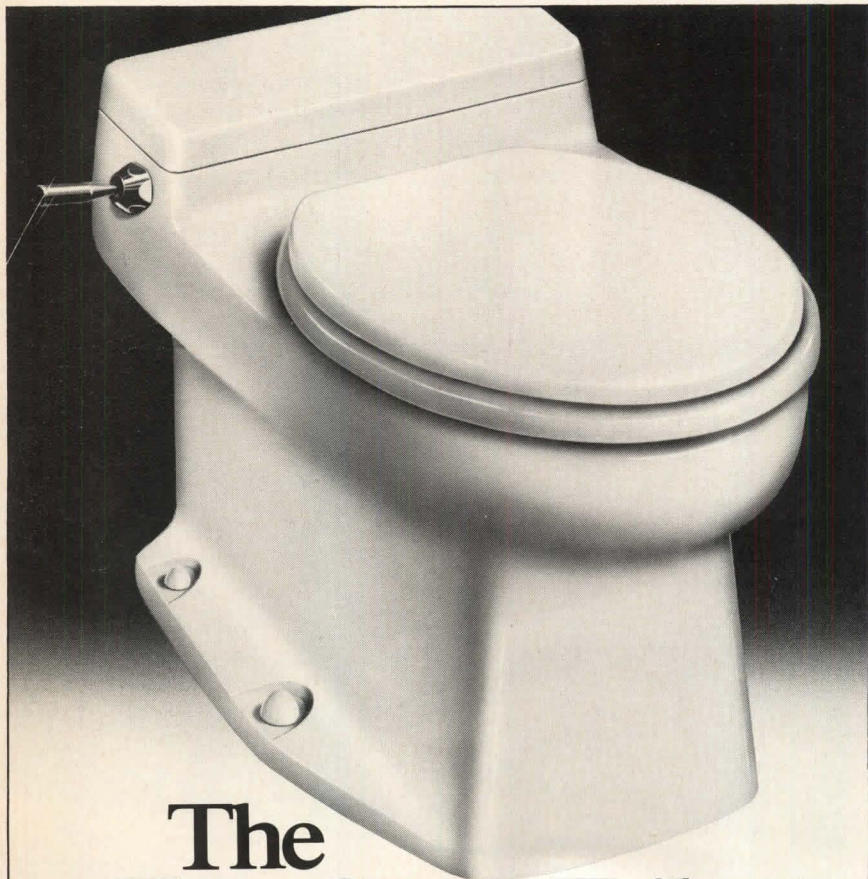
This would be particularly true with the capital grants program. Although "the potential savings are enormous," Wilson admitted that "the initial outlays...would be substantially greater" than those needed for existing programs. One way around this problem would be to phase in the new programs over several years. Or, they could be limited to the same spending levels of the programs they would replace.

Inflation obstacle. It's not all certain that the new administration will adopt these and other task force proposals. As Wilson noted, the suggestions are for Reagan "to do with as he chooses."

One reason he may choose not to follow them: the proposals would be at odds with Reagan's stated top priorities of reducing inflation, cutting the budget, and lowering taxes.

Reagan's Budget Task Force includes James Lynn—formerly both a HUD secretary and a director of the Office of Management and Budget—and Paul O'Neill, a former deputy director of OMB.

—D.O.L.



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The Energy Saver 17 from GE could be helping you rent apartments right now. Just call your General Electric contract supplier.



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Why Canada's Costain builds in the U.S.

Grant Duff, president of Toronto-based developer Costain, Ltd., didn't want to be a copycat when he entered the U.S. market in 1977.

Costain's U.S. approach has indeed differed from those of counterparts such as Genstar and Cadillac-Fairview—both in timing and location. But Costain has entered the U.S. market for the same reasons that have attracted many other Canadians. Among them:

- It projects U.S. housing production will rise by 30% in the 80s, compared to the 70s. But it foresees Canadian production falling by 15% this decade.

- It prefers the larger U.S. market. (The U.S. population is ten times the size of Canada's.)

- It can build with fewer obstacles. Says Duff, "It takes at least three years to bring land to use (in Canada), whereas in the U.S. it can take only six to nine months."

- It can get financing more easily than U.S.-based competitors. The Canadian banking system is national and the banks have huge assets compared to most American institutions. Thus they can lend larger amounts of money—for use anywhere.

- It finds U.S. customers more receptive to borrowing to buy. Canadian homeowners don't have a mortgage-interest deduction for taxes as their neighbors to the south do.

The only drawback Duff sees in the U.S.: the more volatile mortgage market "makes the U.S. housing industry more cyclical than in Canada."

Reconnaissance. Costain, Canada's 12th largest public builder, scouts new markets by analyzing population, employment and income trends, and by speaking to local planners. Its first U.S. target was middle-income earners, and it went after them by building single-family houses priced between \$100,000 and \$150,000.

John De Groot, a Costain vice president based in Washington, D.C., explains why: "We knew that market well and we also knew demand was strong for such houses in the regions we entered."

Today Costain has 115 of its 340 employees in the U.S. Branch offices are in Washington, Maryland, Florida and Phoenix. For the future, the firm is planning regional offices—perhaps overseeing both Canadian and U.S. offices—in the East, Midwest and West.

Local talent. When Costain first entered the U.S. market, it sent in Canadian managers. Now the compa-

Costain's production at a glance		
1979	Number of units	Revenue*
Washington and Maryland	97	\$ 15.0 million
Florida	65	7.9 million
Total	162	\$ 22.9 million
(Total 1979 Canadian and U.S. revenue: \$142.6 million)		
1980 (estimated)	Number of units	Revenue*
Washington and Maryland	140	\$ 21.5 million
Florida	70	8.5 million
Arizona	30	3.0 million
Total	240	\$ 33.0 million
(Total estimated Canadian and U.S. revenue: \$160 million)		

*All amounts in Canadian dollars, equal to about \$.84 U.S. at press time.

ny has hired American managers who are more familiar with the local market and its quirks.

While Toronto has the final say over any land purchase, the branches decide what kind of house to build, how to price it, and whom to hire. Branches are visited monthly by head office vice presidents of marketing, construction and land development, who come to oversee progress.

Costain's entry into the U.S. market trailed that of other major Canadian firms by about two years. The reason can be traced to Costain's slowness to enter the oil-fueled Alberta housing market. This prosperous market served as a financial gateway for other Canadian developers, such as Daon and Cadillac-Fairview, who used their huge Alberta profits to bankroll their first building ventures in the U.S. Costain followed in their footsteps in 1977, but it went to the Washington, D.C. suburbs, not the Sunbelt region that was the choice of other Canadian Builders.

Convenient. Duff says he chose Washington because similar time zones and the short flying time to Toronto made conducting business easier than if Costain had started in the West.

But analysts contend the real reason

is that Costain—49.9% owned by Richard Costain Ltd. of the United Kingdom—has a reputation of being overly cautious in its new venture. Says Henry Rannala, a Toronto real estate analyst, "They may now overpay for land in the South as a result." (Costain is now in southern Florida and Phoenix as well.)

South Florida is the only place in the U.S. where Costain has had a bad experience so far. It built ranch houses targeted for "the indigenous population"—a mistake, Duff concedes. Costain should have aimed for condos for Florida's winter residents.

Another problem: there was a shortage of subcontractors because of the boom that homebuilding was experiencing. Result: Building a house took Costain six months, instead of the normal four.

First tries. Costain has also built:

- Single-family houses in Virginia, ranging from 2,000 to 2,700 sq. ft. and priced from \$90,000 to \$120,000.

- Luxury Tudors and Colonials in Virginia, priced from \$140,000 to \$180,000. The firm is planning a joint venture in Scottsdale, Ariz. with Markland Properties of Toronto. The planned 2,000-sq.-ft. ranch houses will sit on 8,000-sq.-ft. lots, and sell from \$89,000 to \$99,000 each.

And Costain is also considering building \$80,000 to \$90,000 townhouses in Florida and Virginia.

Future plans. New markets Costain is considering are spread across the West, and may include southern California, Denver and Dallas, as the economy picks up steam. Although Duff admits that the firm will find itself in already-crowded markets, he is confident of success: "If a community is growing, there is always room for

Turn to page 24

Costain's Duff:
Always room
for one more



GE didn't design a Zonal Heat Pump that cuts energy costs room-by-room just to impress builders.

We did it to impress their customers.

See the GE Zonline III Zonal Room-by-Room Energy Saver Heat Pump at the NAHB Show. GE Booth #1400.

Enter the exciting world of room-by-room zonal heating and cooling. It's the latest concept in energy conservation, and GE has prepared an impressive show to explain how this concept can save energy dollars for your customers.

As energy costs go higher, builders have to find new ways to cut down on the cost of heating and cooling. That's why GE designed the Zonline III Extended Range Heat Pump. It can significantly reduce energy usage, when compared to standard electric resistance heating units, and helps keep cooling costs down because of its high cooling-efficiency rating.

In addition, the room-by-room zonal control lets your customers put energy to use in only the rooms they're using. The result is less energy waste, and lower electric bills. A perfect

combination, heat pump and zonal control. No wonder the Zonline III Heat Pump system may be the ultimate energy saver money can buy.

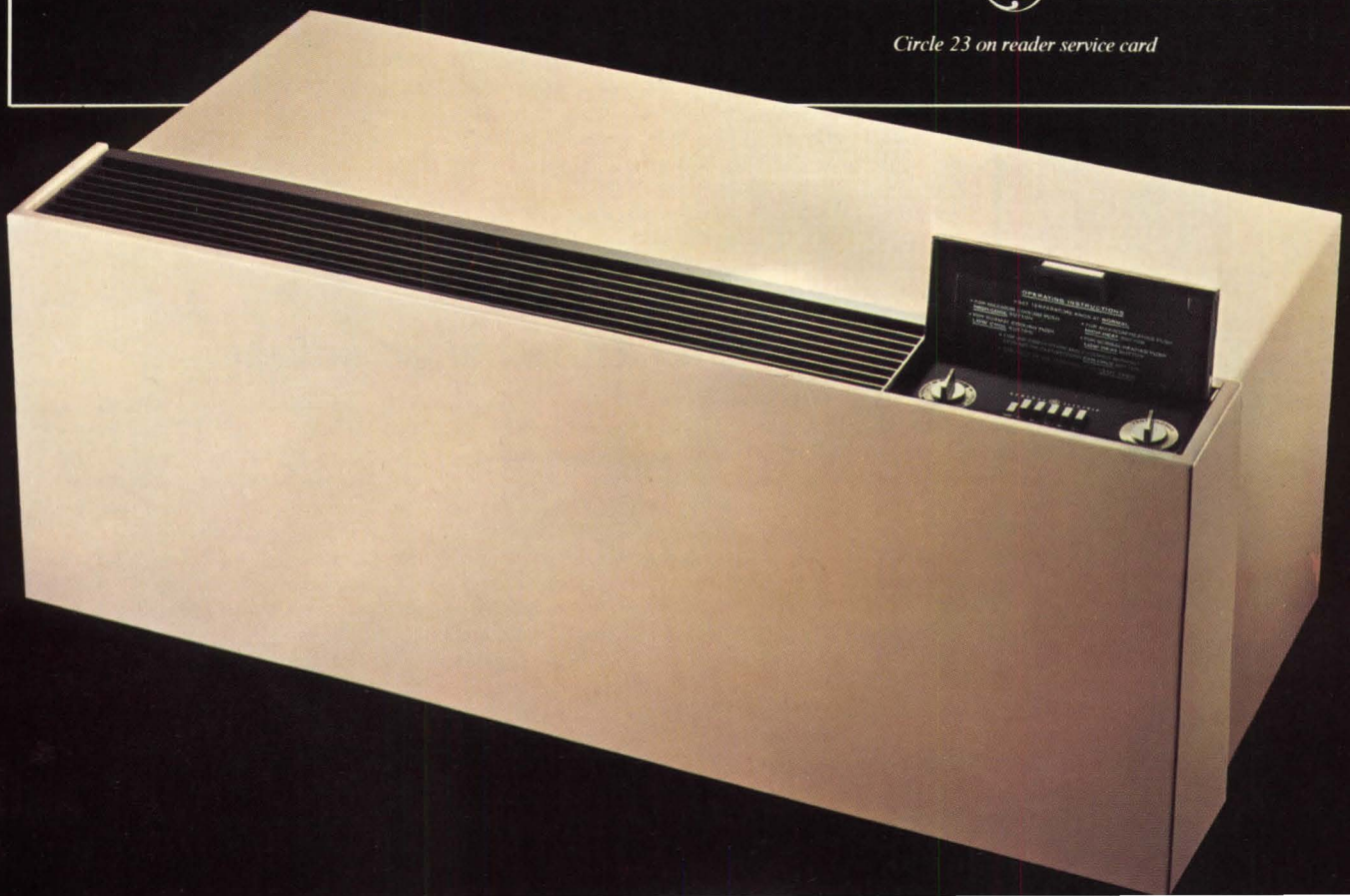
When it comes to heating economy, consider these energy-saving figures. By itself, the Zonline III Heat Pump will save an estimated 50% in Las Vegas, 30% in New York, 46% in Dallas, and 55% in Los Angeles over electric resistance heating. It costs more than a standard resistance heating unit, but depending on the location, the Zonline III Heat Pump can pay for itself in 1 to 5 years.

So drop into GE Booth #1400 at the NAHB show, and see for yourself how room-by-room Zonline III Zonal Heat Pumps can help you sell more living units and save more energy dollars for your customers. What else would you expect from GE?

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Jay Janis resigns from the Bank Board

His resignation will give President-elect Ronald Reagan a free hand in appointing a Federal Home Loan Bank Board chairman, but also—more importantly—a Republican majority on the board.

Janis's resignation was voluntary. He could have remained a Bank Board member, although he probably would have lost his chairmanship because the president may appoint whomever he wishes as chairman.

Janis will remain active in housing—"It's my life," says he—but he had not announced anything more definite than that at press time.

During his 14 months at the Bank Board, Janis oversaw much S&L deregulation and drew few protests from lenders on his performance.

Speculating on what will happen after he's gone, Janis sees the biggest Bank Board issue as adjustable rate mortgages. Currently the Bank Board, which regulates S&Ls, and the Comptroller of the Currency, which regulates commercial banks, are jointly looking at proposals to make adjustable mortgages more responsive to changes in the cost of funds to lenders. Offers Janis: "Look for a decision by March."

Trendy merger. After seven years as joint venture partners, why the merger between Houston's Trendmaker Homes and Weyerhaeuser Real Estate Co., based in Tacoma, Wash.?

The September acquisition of Trendmaker by Weyerhaeuser, says Trendmaker President Al Mayer, was to help his company plan ahead with backing: "The venture capital was good for each project, but it didn't



Bank Board's Janis:
Clears the way

provide enough continuity. That is, it didn't give us the opportunity we needed to buy and keep land for long-term growth."

Although Trendmaker will undergo a change in its capital strength—by increasing it—the building firm's management will stay the same, with Mayer remaining as president. He will report to Weyerhaeuser execs on the West Coast, but he says, "It's business as usual."

Florida foray. And another merger in the works at press time: Ryland Group, based in Columbia, Md., is considering buying Tompkins Development Co. of central Florida. The firms are looking each other over, and if it's decided that everything's in order, the merger will constitute an expansion by Ryland into the Florida market.

Builders/Developers: David L. Smith joins Dallas-based Centex Corp. as vice president, corporate communications. Smith was a manager in Pennzoil Co.'s public relations department in Houston.



Trendmaker's Mayer:
Merges for long haul

McMillin Development (San Diego) promotes William R. Cardon to vice president/sales and marketing, from director of sales and marketing for Scripps Ranch North, a multi-neighborhood project.

Carlsberg Corp. (Santa Monica, Calif.) promotes Mike Palmer to vice president and Jonelle Smith as vice president of administration. Palmer headed Carlsberg Management Co. and Smith directed Carlsberg's administration division.

The Roberts Group (Los Angeles) names Gary E. Mechling president of a newly formed building division.

Died: George J. Heltzer, whose southern California company built many homes, apartments, condominiums, and commercial and industrial projects in Los Angeles. He was 75. Heltzer served as a director of the Building Industry Association of Southern California and the California Association of Realtors, which this year awarded him an honorary member-for-life certificate. —T.R.

Costain *continued from page 22*

more actors in the scene."

But one market Duff is intent on avoiding is Houston—the darling of so many other Canadian builders.

"Houston is an easy city in which to build developments because of lack of zoning," says Duff, "but growth and the potential dynamics of the city are not enough to enter the marketplace. There also has to be some order in the marketplace, and in Houston, there has to be overbuilding."

Like all Canadian developers faced with the maturing of their domestic market, Costain has its eyes trained on the U.S. for the bulk of its future growth. Says Duff, "We entered the U.S. because we wanted to grow in this business."

—SUSAN GOLDENBERG

Toronto

Plotting a southward course

Sales figures tell the story of where Costain's business is going: In 1978, the Toronto-based builder sold 916 houses in Ontario; in 1979, the figure fell to 656.

By contrast, 1978 U.S. sales of 17 expanded nearly tenfold to 162 in 1979.

In 1980, Costain has one-fourth of its assets—\$242.2 million Canadian (U.S. equivalent: about \$204.6 million as of Nov. 1)—in the U.S. Grant Duff, president, expects to have one-half of the company's assets in the U.S. by 1982.

Performance this year has been

mixed, as can be seen from these figures (all of which are in Canadian dollars.) The weakness of the Ontario market is a major factor in Costain's loss of \$131,000 in the first half on revenues of \$47.1 million—compared to net income of \$2.6 million on revenues of \$44.2 million for the same period a year ago.

The bright side is a second quarter 1980 income of \$689,000, compared to a \$820,000 first-quarter loss. The reason for the improvement: falling interest rates rekindling home-buying. —S.G.



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900 million board feet of lumber

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tion and expansion projects for wood products facilities in Oregon and California. By the end of the year, IP will have the capacity to produce more than 900 million board feet of lumber and 900 million square feet of plywood a year.

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IP is also looking into several other locations for wood products expansion beyond 1981 in the South, Northeast and West.

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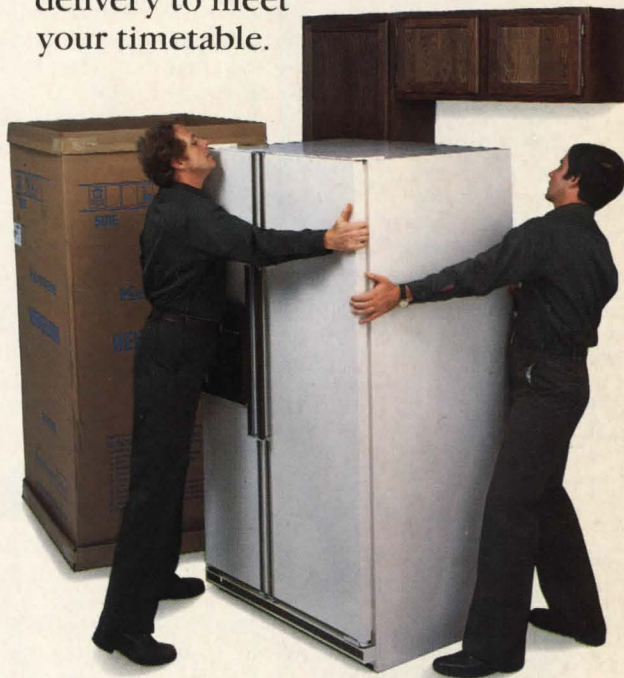
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Call us for a quote. And ask about the special "OPTS" program. It gives you an extra income opportunity and gives your buyers a choice of appliances.

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Richard W. O'Neill, former H&H editor, dies



Dick O'Neill, formerly the editor of this magazine, has died at age 55.

For home builders, he was a dynamic—if controversial—advocate and analyst of the industry. Says Phoenix builder John F. Long: "He was very knowledgeable, and he never hesitated to say what he thought was in the best interest of the country and of housing—even though it might be unpopular with a lot of people."

O'Neill's involvement with the industry was complete. His experience ranged from an early job as a construction superintendent, to serving on a Presidential commission during his years as *House & Home* chief editor. He also wrote five books on different aspects of the construction industry.

Early years. A World War II infantryman in Europe, he later earned a degree in civil engineering at Yale (1950), and did construction work until 1953. He then joined

McGraw-Hill's *Engineering News-Record*, and then *House & Home* in 1955. He headed the editorial staff there from 1964 until he left in late 1970.

He was named to President Johnson's National Commission on Urban Problems in 1967, and wrote much of its report. In 1968, he headed a task force of McGraw-Hill editors to produce a special report, "Business and the Urban Crisis." This report explored ways business could act to calm the then-prevalent urban turmoil.

Breakthrough analysis. With then-Senior Editor Maxwell C. Huntoon, Jr., O'Neill wrote an "Open Letter" to President Nixon, which began on the cover of the February, 1970 issue. It was an intricate analysis of why "Operation Breakthrough," an attempt to solve affordability problems through industrialized housing, would not live up to promises.

After leaving this magazine, O'Neill formed his own firm, The Housing Advisory Council, Ltd., in Lakeville, Conn. He consulted to both builders and manufacturers, and published the weekly "O'Neill Letter," a combination of reporting and analysis of trends

and events affecting housing. His books, published between 1964 and 1980, include: *High Steel, Hard Rock and Deep Water*; *The Unhandyman's Guide to Home Repair*; *The Dynamics of the New Housing Industry*; *The Ingredients of Urban Decay*; and his most recent, *The Homebuyer's Guide for the '80s*.

Directorships. O'Neill was director of two building firms, Leisure Technology Corp., and the Titan Group, Inc.

He is survived by his wife Patricia and four children by a previous marriage: Richard, Susan, Jennifer and Julia.

Dick O'Neill's views on government and housing are shown in this statement he made last year while serving as moderator of a housing industry roundtable for the Whirlpool Corp.: "A lot of us feel that state and local governments will be forced to shape up. If we can force the federal government into responsible postures, as opposed to simple-minded and political expediency, then the future of the housing industry, and all America, is bright indeed." —DAVID GARFINKEL



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H1280-474

Panel's advice is to spread the density around

More mixed-use developments and higher densities in both close-in suburbs and rural areas would be a wise course to take in this decade.

So suggests the "Council on Development Choices for the '80s," set up by outgoing Housing Secretary Moon Landrieu last March. The 37-member blue-ribbon panel, which included prominent builders and developers, was chaired by Republican Governor Bruce Babbitt of Arizona and Chicago developer Harold S. Jensen.

Growth outlook. The council's preliminary report said that in the '80s, "the suburbs will continue to be where the great majority of housing demands will be met."

State and local officials hold the key to the "major changes in policies and regulations" that are needed to cope with affordability problems, said the report.

What should these officials do? Says the council: They should use zoning powers to "permit and encourage increased overall densities and greater contiguity of growth" by allowing clustering and other forms of higher density within individual projects.

Best sellers. Housing projects that are compact but "retain the character of single-family areas" will be most successful, the council said.

Higher densities are by themselves neither good nor bad, as council member Tom Moody, Republican mayor of Columbus, Ohio, pointed out. "The finest part of Columbus," he said, "has the same density as the worst part."

Nor does good land use always require high gross density. For example, the council singled out innovative zoning in Phoenix, Ariz. and the resulting "low-density growth area."

Phoenix, through code modifications, is encouraging the formation of nine "urban villages" and is including residential development in the central business district. The result, notes the report, will be a substantial reduction in the future rates of land consumption and costs of government facilities and services.

Other recommendations of the report included:

- Minimum density requirements for developing areas, and
- Density bonuses for developers that pursue mixed-use plans.

The report contains dozens of specific recommendations for local officials. A copy may be obtained by writing to Mr. Donald Priest, Urban Land Institute, 1090 Vermont Ave., N.W., Washington, D.C. 20005 —D.O.L.

Rent controls get hardly any credit

Don't plan on building multifamily in a rent-controlled area, unless you're going to finance it yourself. That advice is drawn from a recent lender survey, reported in the *National Real Estate Investor*.

In Seattle, 62% of lenders polled said they would not make multifamily construction loans if controls were implemented; 25% would stop making the loans even under the threat of future controls; and 81% said they would impose stricter requirements on borrowers seeking any multifamily loans in a rent-controlled area.

A November ballot initiative to institute rent controls in Seattle—which brought about the survey was defeated by nearly two to one. □



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housing 1/81 **33**

Oregon developers trot out a new condo

A group of developers in Springfield, Ore. has added a new dimension to the condo conversion market: horse condominiums. And although sales on a recent opening day might be called disappointing—only ten out of the hoped for 20 “equine condos” were sold—the developers still feel they’ve got the inside track on a promising and stable market.

Bingham, Moore and Bingham, a development company made up of horse enthusiasts, converted an existing stable just outside Eugene, Oregon’s second largest city, into 85 horse condos. The condos range in size from 100 to 184 sq. ft. and in price from \$5,900 to \$7,900. The horse market the developers are catering to appears to be a somewhat well-heeled group, judging from the amenity package: automated horse walker, exercise area, automatic waterer, a large indoor arena and a feeding and grooming

staff. One set of stalls was even designed for a specific market segment: the 12 ft. by 16 ft. “foaling stalls” cater to the “soon to be nesters” market.

Of course, there’s a monthly condo fee, \$25, which covers maintenance and insurance, and a one-time membership charge of \$250. The developer will finance 90% of the price of a unit for 12 years at 10%.

“There’s an awful lot of horse people around here,” says Larry White, a salesman for Lowry Realty, the brokerage firm handling condo sales for the developer. “We feel this is an idea whose time has come.”

—W.L. U.



Here's a new route to sellout in just one day

Seattle builder O. Thomas Harper couldn't have asked for more: All 13 units in his condominium project sold on opening day—even though the building sits in a proposed Interstate 90 (I-90) right-of-way.

Harper bought the property in 1976,

for \$13,000. He started construction in late 1978 and finished the 14,300 sq.-ft., two-story Island View Condominium last Spring. A realty firm began looking for sales.

Then—surprise—the state Department of Transportation bought the

whole project for \$960,000—about \$300,000 more than Harper paid to build it.

The contemporary, stucco-and-wood trimmed building overlooks Seattle's Lake Washington area from Mt. Baker Ridge. Its neighborhood has similarly priced condominiums and single-family houses in the \$75,000 to \$125,000 range.

But what made Harper's project special was his audacity in locating it directly over the spot where highway I-90 is expected to pass through two tunnels.

Red tape. The state couldn't stop him from building there because a legal fight with environmentalists had frozen the highway's funding. Not a bureaucratic finger could be lifted to prevent Harper from moving in, so when the funds finally thawed last summer, the state bought him out.

State and federal engineers ruled that the building probably wouldn't be damaged when tunnels eventually are bored below it. But the state decided to avoid possible damage suits from condo owners, along with the costs of relocating them—and now the taxpayers of Washington are part owners of a \$960,000 condominium.

Furthermore, the building should soon be occupied: By January, the state expects to rent all the units for an average of \$400 a month. And someday the taxpayers may see a profit when Harper's condominium units are resold—to individuals. —TOM READ

New Yorkers make a night of it

Camp-outs with people sleeping in tents are nothing new at popular California projects. But they came as a surprise when Lusk Corp. of Stamford, Conn. opened a new phase of its Oakridge condo project in Westchester County, N.Y.

Just as surprising were the 18 sales in the next two days. Says C. R. Goutell, a Lusk vice president: “We expected a strong response because the homes have sold well since sales began in late summer. But we weren't prepared for anything like this.”

One reason for the swift success: a sudden change in the mix. Of the 47 condos offered, 40% are one-bedroom units—many built instead of the three-bedroom units originally planned. Lusk switched after discovering that singles, young couples and empty nesters dominated its waiting list.

Buy-down. A second reason for the fast sales: below-market financing. In early December, Lusk was offering five-year, renegotiable 80% mortgages, on which it had bought down the rate to 12¾%.

Oakridge prices go from \$75,000 to \$148,000 for units ranging from 606-sq.-ft. studios to 1,855-sq.-ft. townhouses. Standard amenities include lofts, fireplaces, patios and decks, ceramic tile baths, slate foyers and decorator lighting.

When completed, the 60-acre project will have more than 300 units. Lusk clustered the buildings on only one-eighth of the site and left more than 25 acres of woods. Along one edge of the site, Lusk is renovating a 23,400-sq.-ft. shopping center. And it plans to build 50,000 sq. ft. of new retail space nearby.

Trade-off. Finding buyers for the condo project was easy; getting zoning approval in Vista, where the project is located, was harder. Local officials were reluctant to permit the high densities that Lusk required.

A deal was struck: Lusk set aside one-third of the bonus-density units for moderate income buyers, in exchange for a variance allowing a 60% density increase. The lower-cost units were offered to public employees. —D.G.

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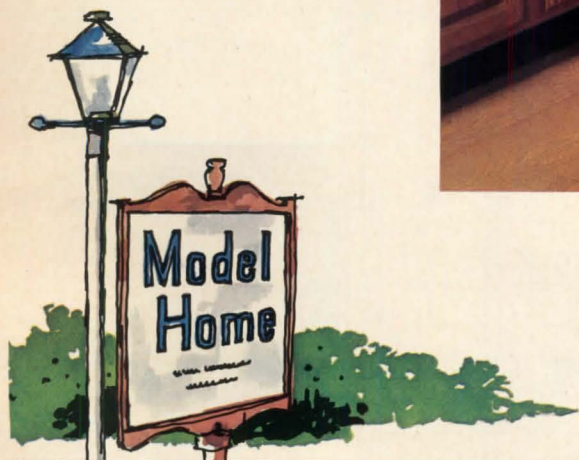
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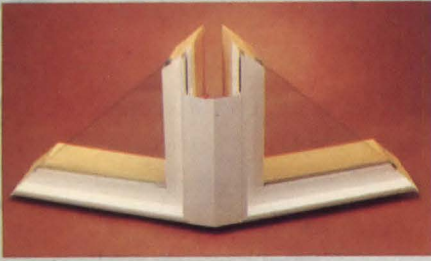
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Builders cut costs up to 33%

Three privately funded demonstration projects show housing costs can be cut 24% to 33% by speeding up permitting, making minor design changes, and relaxing density regulations.

No note federal officials, pointing to demonstration projects in Shreveport, La., Hayward, Calif., and the outskirts of Pittsburgh. In those projects, per-unit savings ranged from \$13,000 to \$32,500.

Former Carter inflation fighter Alfred E. Kahn and HUD Asst. Secretary and FHA Commissioner Larry Simons monitored and encouraged the projects, and presented the results.

Says Kahn: "While programs such as this will not shave a single point off the Consumer Price Index, they are exactly the kind of micro effort we are looking for to put a damper on the cost of living."

Cost-cutters. Each program is different. In Shreveport, builder Beal Lock built 75 townhouses on three inner-city sites to sell from \$48,950 to \$59,550. Comparable units would cost an estimated \$15,000 more without these cost-saving changes:

- No front sidewalks
- Smaller windows
- Plastic pipes used throughout
- Non-cantilevered roof trusses
- Elimination of some firewalls be-

tween units, specifically on ceilings.

In Hayward, the Specialty Building Co. built 58 townhouses on 3.54 acres, for a density of 16.4/acre. Prices range from \$53,000 to \$65,000—an estimated 33% less than comparable homes in the area.

In addition to an increased density, the Hayward project took advantage of a siting scheme so that one sewer lateral serves two units, and back-to-back units are served by a single common waste vent.

Just outside Pittsburgh, in two Allegheny County inner-city locations, Ryan Homes built 20 detached homes. Total acreage: 4.6. The units sell from \$42,000 to \$45,000—an estimated 24% under the area's going rate.

Two of the Ryan cost-cutters are standard in all Ryan homes: single jacks under windows, and studs on 24-inch centers. Special for this project were a reduced street width (to 28 ft. from 32 ft.) and the use of plastic pipe for sewer lines.

Stalled. Officials had planned on a fourth project in Washington state, but ironically problems with local zoning officials got in the way. Further, the builder—Rossiter Glen, Inc.—was delayed by the eruption of Mt. St. Helens.

—WILLIAM D. HICKMAN

McGraw-Hill World News, Washington

CODES

Code blocks: Take 'em to court

If local codes frustrate your attempts to use innovative materials or methods, you can seek redress in the courts.

So says a consultant to the Federal Trade Commission. Charles G. Field, an attorney specializing in building code issues, doesn't necessarily encourage builders to take legal action. But in a report to the FTC he outlines judicial remedies available to innovators who come up against official resistance techniques.

Strategies. His advice:

● Demand procedural safeguards against arbitrary denials of code variances by local officials.

● Ask for rules covering the acceptance of evidence and the use of expert testimony.

● Insist that standards required by codes be technically feasible.

Building codes serve their avowed purpose of ensuring safe construction, says Field. But, he adds, they also add unnecessarily to construction costs, promote inefficiency and retard inno-

vation. And when a builder wants to innovate, the cost of getting approval for that innovation is sometimes greater than the eventual savings that motivated him in the first place. So, Field notes, "Most builders would rather go along, use inefficient methods and pass the cost on to the consumer instead of fighting city hall."

FTC stance. Field's report is not endorsed by the FTC which has no jurisdiction over building codes. But Thomas H. Stanton, deputy-director of the commission's planning office, says the FTC supported Field's work because "a number of building-industry representatives asked the FTC what could be done to help reduce costs that were kept unnecessarily high by what they see as restrictive codes."

Copies of the study—"Building Regulatory Practices and the Courts"—are available from the FTC's Public Reference Branch, Room 130, 6th St. and Pennsylvania Ave., N.W. Washington, D.C. 20580. —W.D.H.

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Time-share study: high marketing costs, high yields

Marketing costs for time-sharing projects average 35% of the sales price—unusually high for housing. But they're justified by high yields: from \$196 to \$390 a sq.-ft., or five to nine times the yield of a 1,500-sq.-ft. townhouse selling for \$65,000.

Those are two findings of a recent survey of 124 time-sharing projects by Helmsley-Spear Hospitality Services, New York City.

The average time-sharing slot is 1½ weeks and sells for \$6,300, according to the survey. At that rate, a sell-out of

one unit yields about \$218,000 (see table for yields by unit type).

Some other findings:

- Most time-share projects (84%) are relatively small: 50 units or less (see graph, below left).

- Price discounts are the most effective sales tool. Also effective: direct mail campaigns, seminars, and newspaper and magazine advertisements.

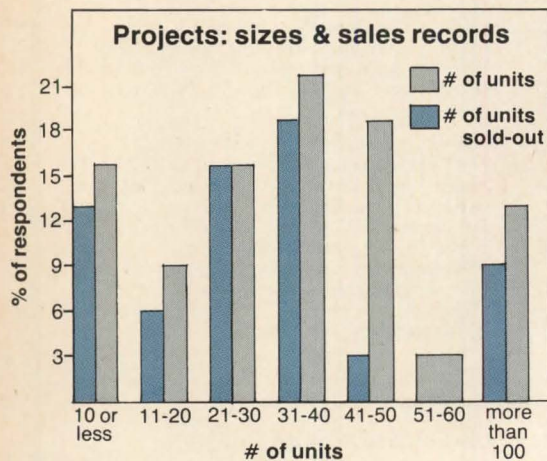
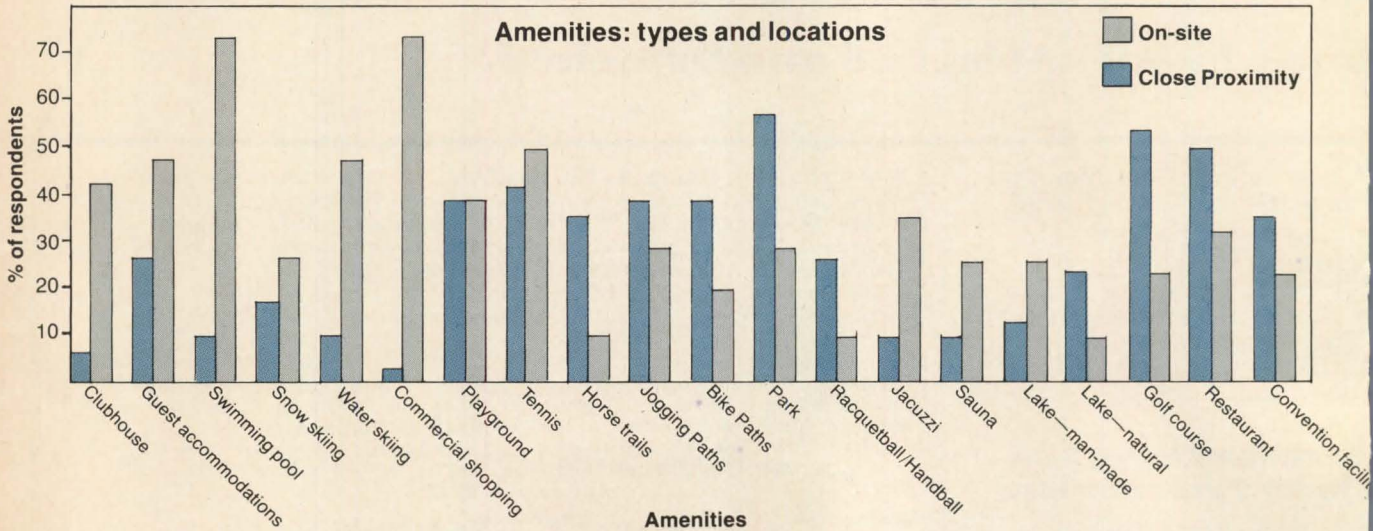
- The most common amenities are clubhouses, swimming pools, and on-site shopping facilities (see graph).

- Furniture and decorations must be

replaced, on average, every 6½ years. Average replacement cost: \$9,254, or about \$15 a sq.-ft.

- Most buyers (63%) are four-person families with incomes between \$20,000 and \$40,000.

The study was conducted in cooperation with the American Land Development Association, in Washington, D.C. If you'd like a free copy, write to Research Dept., Helmsley-Spear Hospitality Services Inc., Graybar Bldg., Rm. 205, 420 Lexington Ave., New York, N.Y. 10170. —S.L.



Unit type	Projects offering unit type (% of respondents)	Units-per-project (ave.)	Ave. unit size (in sq. ft.)	Gross sellout	Yield-per-sq. ft.
Studio	33	28	401	\$156,514	\$390
1-Br.	76	19	720	238,920	332
2-Br.	71	21	989	295,398	299
Other	14	16	1577	308,745	196

Corporate giant funds time-share

General Electric's financial arm, the G.E. Credit Corp., has agreed to lend \$3.7 million to a Florida developer as interim funding for two time-share projects.

The loan—G.E.C.C.'s first for time-shares—is also one of the first ventures by a corporate credit company

into the time-share field. The Helmsley-Spear study finds that only 7% of all loans for time-share projects come from finance companies, of which corporate creditors are only a part.

In contrast to most time-share loans, the G.E.C.C. funds are secured by the receivables accounts of share-

buyers, as well as the usual property mortgage.

The two resorts—Shell Island Beach Club, in Sanibel, Fla., and Caribbean Beach Club, in Ft. Myers Beach, Fla.—are being developed by Captran, Inc., a three-year-old firm that specializes in time-shares.—S.L.

THE SIGN OF A GREAT INSULATION CONTRACTOR.

A great insulation contractor can save you time, and money, and headaches. America's leading insulation company helps you find that great contractor. Because we take the best in the country, and certify them—as Owens-Corning Certified Independent Insulation Contractors.

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Circle 43 on reader service card



Solar tax credits for builders: Out West, some; elsewhere, none

With three exceptions, government at all levels offers builders no tax incentives to install solar space heating or hot water systems in housing in 1981.

The exceptions: California, Arizona and Utah, where builders have the option of taking a credit or passing it along to the buyer at the time of sale. Specifically: California builders may deduct 55% of solar costs of up to \$3,000, Arizonans 35% of up to \$1,000, and Utah builders 10% of up to \$1,000.

Marketing edge. Elsewhere, the federal and state governments are offering solar tax credits only to users—namely, homeowners and businesses. State income-, property-, and sales-tax breaks (see table right) plus Federal income-tax credits for solar [HOUSING, Dec. '80] give builders selling solar a small edge when trying to lure buyers.

Congressional flops. Congress, otherwise, has been dragging its feet. Two bills which would extend solar investment credits to builders were introduced last year. But neither is expected to survive the current legislative session. —S.L.

Here's a low-cost way to get renters to save energy

It's known as RUBS—Resident Utility Billing Service—and it offers savings without the costs of converting to individual metering. Under RUBS, monthly utility costs are allocated to tenants on the basis of the space they occupy.

A DOE study of 14 apartment projects with 2,588 units showed that RUBS produced an 8% savings in electricity used for cooling, lights and appliances. This is far less than the 22% produced by individual metering, but the smaller savings are somewhat offset by RUBS's easier implementation. Energy savings for heating and hot water were estimated at a maximum of 15% versus 22% for individual metering.

The DOE-sponsored report, which includes a property owners' decision guide and operations manual, can be obtained for \$10 from: RUBS Project, Campus Box 468, University of Colorado, Boulder, Colo. 80309.

State solar tax breaks for homebuyers

State	Property Tax Exemption	Income Tax Incentive	Sales Tax Exemption
Alabama	no	no	no
Alaska	no	up to \$200 credit	not applicable
Arizona	exemption	up to \$1,000 credit	exemption
Arkansas	no	100% deduction	no
California	no	up to \$3,000 credit per application	no
Colorado	exemption	up to \$3,000 credit	no
Connecticut	local option	not applicable	exemption
Delaware	no	\$200 credit for DHW systems	not applicable
Florida	exemption	not applicable	exemption
Georgia	local option	no	refund
Hawaii	exemption	10% credit	no
Idaho	no	100% deduction	no
Illinois	exemption	no	no
Indiana	exemption	up to \$3,000 credit	no
Iowa	exemption	no	no
Kansas	exemption; refund based on efficiency of system	up to \$1,500 credit	no
Kentucky	no	no	no
Louisiana	exemption	no	no
Maine	exemption	up to \$100 credit	refund
Maryland	exemption statewide plus credit at local option	no	no
Massachusetts	exemption	up to \$1,000 credit	exemption
Michigan	exemption	up to \$1,700 credit	exemption
Minnesota	exemption	up to \$2,000 credit	no
Mississippi	no	no	exemption for colleges, junior colleges and universities
Missouri	no	no	no
Montana	exemption	up to \$125 credit	not applicable
Nebraska	no	no	refund
Nevada	limited exemption	not applicable	no
New Hampshire	local option	not applicable	not applicable
New Jersey	exemption	no	exemption
New Mexico	no	up to \$1,000 credit	no
New York	exemption	no	no
N. Carolina	exemption	up to \$1,000 credit	no
N. Dakota	exemption	5% credit for two yrs.	no
Ohio	exemption	up to \$1,000 credit	exemption
Oklahoma	no	80% of federal percentage	no
Oregon	exemption	up to \$1,000 credit	no applicable
Pennsylvania	no	no	no
Rhode Island	exemption	up to \$1,000 credit	refund
S. Carolina	no	up to \$1,000 deduction	no
S. Dakota	exemption	not applicable	no
Tennessee	exemption	not applicable	no
Texas	exemption	not applicable	exemption
Utah	no	up to \$1,000 credit	no
Vermont	local option	up to \$1,000 credit	no
Virginia	local option	no	no
Washington	exemption	not applicable	no
W. Virginia	no	no	no
Wisconsin	exemption	no*	no
Wyoming	no	not applicable	no

*Wisconsin offers a direct rebate for part of solar expenditures; the rebate is unrelated to taxes. Source: U.S. Department of Housing and Urban Development.

ONE OF YOUR BEST SALES TOOLS IS PINK.



It's Owens-Corning Pink *Fiberglas*[®] Insulation. The best selling insulation in America. The insulation consumers prefer 3 to 1 over the next most popular brand.

As fuel costs keep rising, more and more home buyers are looking for this pink insulation. They look for it in the usual places—walls and ceilings. They look for it in two more, very important places—basements and crawl spaces. And they look for *enough* of it to meet or surpass HUD and FHA thermal requirements—standards Owens-Corning supports as a minimum.

Which is why it's so easy to put your sales figures in the pink—when you build your houses with Owens-Corning Pink *Fiberglas* Insulation.

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America is replacing 13,000,000 worn-out windows a year! You can cash in with Andersen's New Window Replacement System.

Get in on a big, timely opportunity! Cash in on the booming replacement market with Andersen's new Window Replacement System.

It's easy. The System brings together everything you need.

It's inexpensive. There's no extensive retraining necessary.

No new equipment required.

It's fast. Local Andersen distributors and dealers stock the System. Assure you the fastest delivery possible.

It's ready now. The complete System is available immediately.

It's exactly what America needs.

The System is built around fuel-saving, low maintenance Andersen® Perma-Shield® windows. The same high-quality windows used in new home construction for over 75 years.

And the System offers you...



Specially-designed installation aids.



Perma-Shield™ vinyl filler. 3½" and 5½" widths in 6' and 10' lengths. Vinyl-wrapped and laminated on three sides. White and Terratone.

Rigid vinyl trim strips. ¾" face dimension by 12' and 1¾" face dimension by 6'5". White and Terratone.

Vinyl laminated board. ½" thick in 2' x 8' sheets. White and Terratone.

Auxiliary vinyl-wrapped casing. 1¾" square by 12' White and Terratone.

Rigid vinyl "h" channel. 12'6" lengths. White and Terratone.

Andersen has designed an entire line of installation aids that let you custom-fit stock-size Perma-Shield windows to virtually any opening.

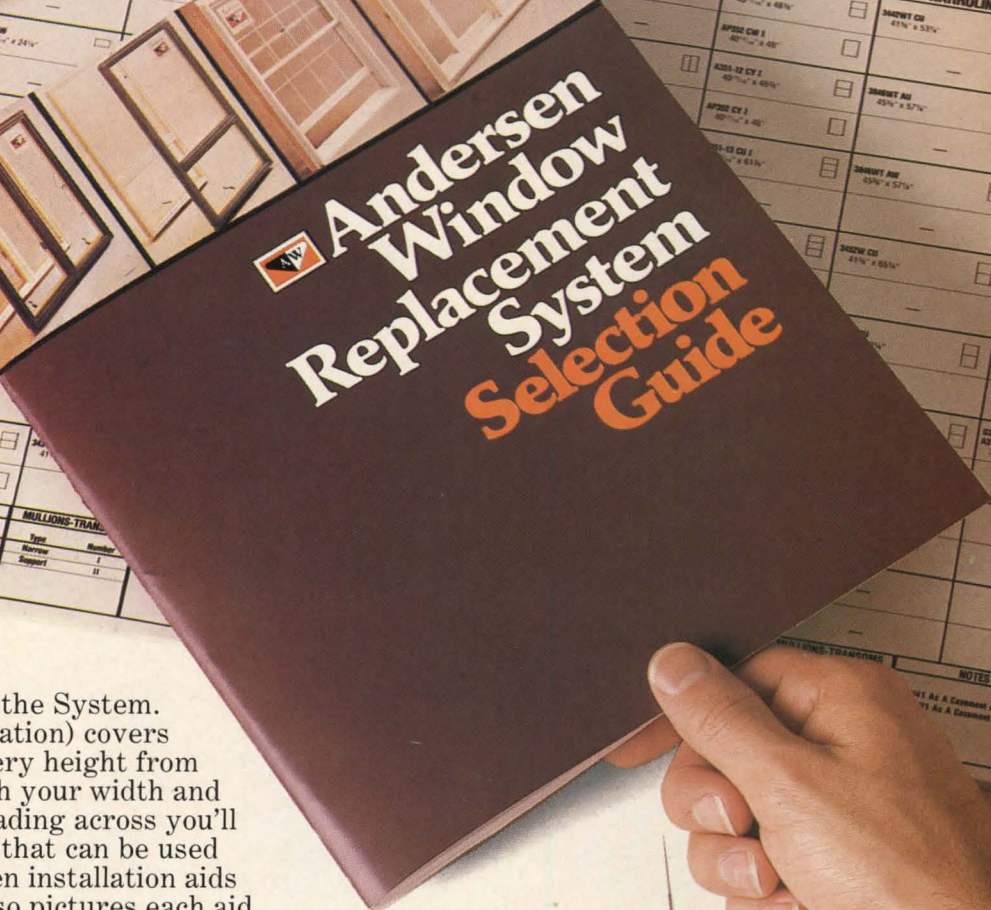
These aids support, fill in and trim out the exterior area around the installed Perma-Shield window when the window is not the exact size for the opening.

The aids are covered with (or are completely made of) thick, low-maintenance rigid vinyl to match the Perma-Shield window and provide a lasting, beautiful appearance.

Support mullion filler and vinyl trim. 2" face dimension by 12'. White and Terratone.

Side jamb clip. Metal. For use when nailing flange method is impractical.

PERMA-SHIELD® WINDOWS			
HEIGHT	CASEMENT	AWNING	NARROWLINE
24"		AWING CW 40" x 20"	
28"		AWING CW 44" x 24"	
32"	2-CR13 BU II 36" x 25 1/2"		
36"	2-CR13 BU II 40" x 29 1/2"		
40"	CR20 CU 44" x 33 1/2"		
44"	CR20 CW 48" x 37 1/2"		
48"	CR20 CY 52" x 41 1/2"		
52"	CR14-B BU II 43" x 48"		



Easy to use guide.

The Guide makes it simple to use the System. Each two-page spread (see illustration) covers one 4" increment in width and every height from 20" to 84." Just go to the page with your width and find your height at the left. By reading across you'll see every Perma-Shield® window that can be used along with exactly which Andersen installation aids you'll need. This 88-page guide also pictures each aid, explains its uses and shows installation procedures.

Lead generating advertising.

Andersen is conducting intensive lead generating advertising in the top consumer magazines. These hot, local leads will be forwarded to Andersen dealers. See your Andersen dealer to join the program. TV, radio and newspaper ad materials, customer literature, sales aids and a contractor direct mail program are also available.

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NEWS/MERCHANDISING



Family-style opening draws 'kids' from six to sixty

There were rides for the six-year-olds, a live country-western radio show for teenagers, a potted-plant auction for adults (*photo above*) and refreshments and door-prize drawings for everyone.

In other words, it was a day designed to keep the whole family entertained—smart marketing when you're trying to sell large detached houses to an established-family market.

According to the builder—Ponderosa Homes of Santa Clara, Calif.—the intent was to always hold the interest of at least one family member, thus keeping the entire family on site longer and raising odds of making a sale.

The project, Westwind, is located in Penasquitos, Calif. Units range from 1,599 to 2,645 sq. ft., and sell for between \$135,900 and \$181,990.

The opening drew some 200 people.

—S.L.



Grade-schoolers get an on-site lesson

If you ask builder Larry Ellis (*above right*) why he shepherded a flock of third and fourth graders through half-completed Sagewood Crest in San Diego, Calif., he points out that the young friends he made are the sales prospects of the future.

What's more, agreeing to play tour guide gave Ellis an opportunity to score good-will points with the kids' parents, teachers and school administrators.

The tour culminated a three-week program sponsored by a non-profit educational organization to introduce children to the homebuilding industry. The group asked Ellis, a vice president for Broadmoor Homes, to give the kids a first-hand glimpse of the construction process and pass along some tips about on-site safety.

—S.L.

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For a free copy of our color brochure on the most provocative, mind-boggling, complete line of quality bath enclosures available, write Howmet Aluminum Corporation, Architectural Products Division, P.O. Box 629, Terrell, Texas 75160. Or call (214) 563-2624.

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Howmet. The name to remember.

PenPly saves labor beautifully.

You can slash your siding manhours dramatically with PenPly Western Red Cedar 303 exterior plywood siding.

Just ask builder Mike Arvidson of Excelsior, Minn. He estimates that using PenPly T-1-11 to side this innovative house saved him 50 per cent of the labor cost of board siding.

Why did he choose PenPly? "PenPly is a good, quality product," Arvidson said. "You get what you pay for. And I've found the houses are easier to sell to homeowners."

This house makes imaginative use of energy saving and cost efficient construction techniques you'll be seeing more of in the 1980's.

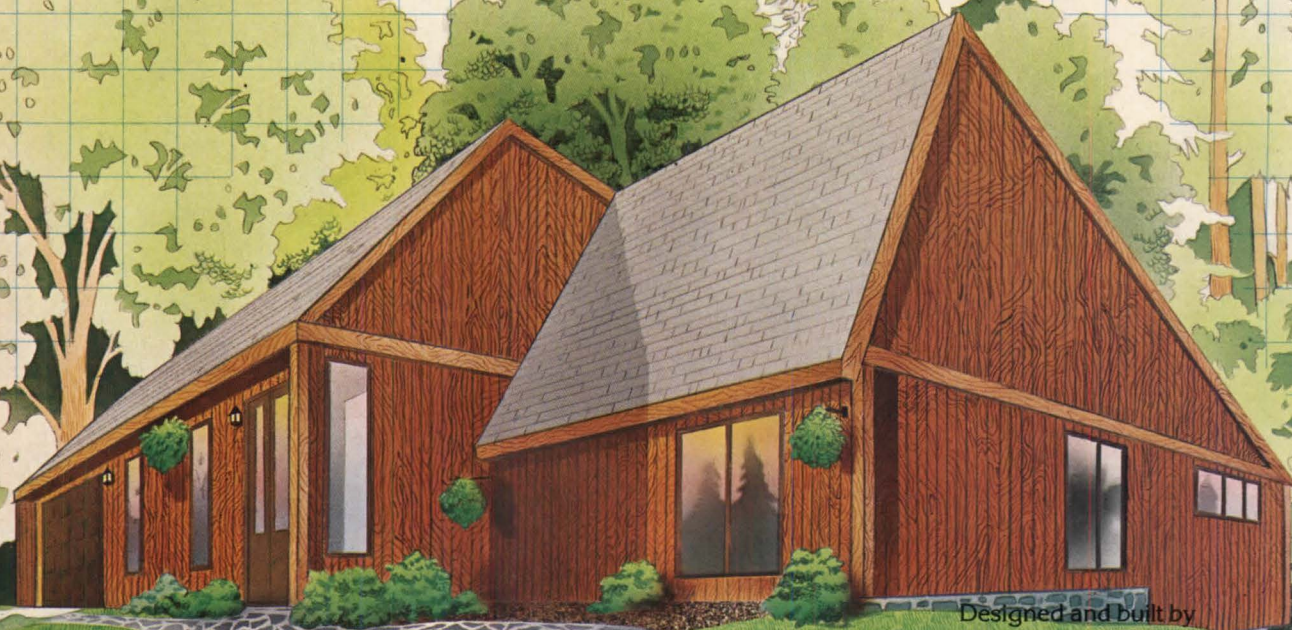
It's a passive solar house. That means it collects sunlight, stores its warmth, and distributes it as needed without a lot of extra equipment.

PenPly, the leading producer of quality cedar plywood siding, has published a free brochure. It contains floor plans to this house, design details and facts. Send for a copy of that brochure.

For more information about PenPly, contact your wood products distributor, or see Sweet's General Building and Light Residential Files under Siding/Cladding Section (7.6 Pen).

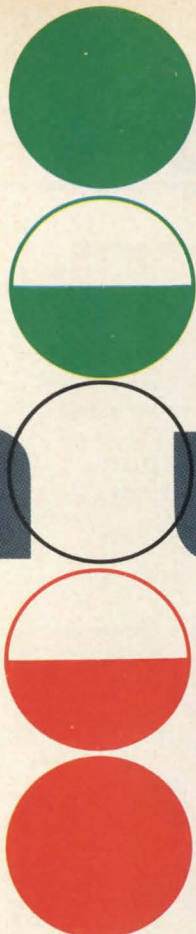
PenPlyTM

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Designed and built by
Mike Arvidson, Excelsior, Minnesota

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housing demand index[®] First quarter, 1981

Underlying demand for housing is still suffering the lingering effects of recession, despite reports of improvement in other parts of the economy. That's going to make sales even more vulnerable to the recent spate of sky-high interest rates.

Over half of the 119 SMSAs (Standard Metropolitan Statistical Areas) included in this quarter's Housing Demand Index are ranked below average—the worst tally in the index's history. Demand has dropped in 43 markets, while increasing in only 12. And good or excellent rankings go to just 25 spots, or one-fifth of the total.

What's more, the situation could get even worse because of the new round of rate hikes. "High interest rates are ripping the heart out of the housing market," says Al Gobar, the California-based analyst who prepares the index. "Even the high-ranked markets may not realize their potential," he says. "When mortgage rates rise above 14%, the whole industry virtually shuts down."

The biggest fall-offs have been in the industrial and manufacturing centers of the Midwest and central South. In cities such as Cleveland, Detroit, Louisville, Ky., and Gary, Ind., unemployment is hurting housing at both the low and high ends, as young first-timers are forced to

stay at home and older move-ups defer decisions to buy because they can't afford higher monthly payments.






There are, however, a few bright spots, mostly in the Sunbelt and the West. San Antonio and Colorado Springs are staging comebacks, and Fresno, Calif. is picking up steam. Another winner: Newport News, Va., where a re-emergence of the coal industry is creating high levels of employment.

There's another piece of good news: Parts of the Northeast may be facing a long-term turnaround, as evidenced by continued good ratings for Boston and Worcester, Mass. Gobar's explanation: "High-technology industry is producing a comeback in the economies of this region, resulting in good new opportunities for builders. Also, local governments are apparently undergoing a change of attitude towards builders, and are starting to ease up on regulations."

All of this, however, is overshadowed by the bad financial situation. "The best thing a builder can do as long as interest rates are this high," says Gobar, "is to try to undercut the cost of money by using whatever commitments he now has and encouraging his local government to sell tax-free revenue bonds" (*for more on revenue bonds, see page 18*).
—STEPHEN LEVIN

How to read the index

Five symbols are used:

-  A green full circle indicates a very strong market with significant pent-up demand.
-  A green half-circle indicates a better than average situation, with demand increasing faster than supply.
-  A white circle indicates the market is in relative equilibrium—that is, supply and demand are increasing at about the same rate.
-  A red half-circle indicates a poorer than average situation, usually an overbuilt market.
-  A red full circle indicates a very poor situation that could be overbuilt by as much as two years.

Each SMSA is evaluated three ways:

1. Degree of opportunity—in effect, a summation of all factors affecting the market.
2. Demand by units—just what it says.
3. Demand by purchasing power—the relative ability of the market to pay current prices or rents.

Each of these categories is in turn divided into three sub-categories:

1. All housing in the SMSA.
2. For-sale housing—single-family detached and some mid- and high-priced condos.
3. For-rent housing—rental apartments and some low-priced condos.

To make best use of the index, keep these points in mind

- Point #1:** The chart's simplified symbols represent complex statistics, so they provide only a general picture. A builder, no matter how high his market is rated, must still analyze his own situation very carefully.
- Point #2:** The reports indicate the degree of risk in a given SMSA rather than the number of housing units that can be built there. A large SMSA with a poor rating would still support more new housing than a smaller SMSA with an excellent rating. But the relative degree of risk for the developer or lender would be much greater in the larger SMSA.
- Point #3:** The reports are projective, not historical. That is, they forecast demand 12 to 18 months ahead rather than describing the situation as it stands. An SMSA may have strong sales or low vacancies but still be a poor risk; building-permit figures may indicate imminent oversupplies. Conversely, an SMSA that looks bad on the surface today may actually be turning around and getting healthy.
- Point #4:** The reports are for the SMSA as a whole. A low-rated market may offer good opportunities for specific kinds of housing in specific locales. On the other hand, a high rating does not guarantee success for the wrong product in the wrong location.

Albany improves, but not by much. The market is being fueled mostly by pent-up demand, and this quarter's higher rating may not hold up for long, says Gobar.

Albuquerque holds out, but a decline in industrial and commercial employment may lead to a drop within the next six months.

Anaheim starts to weaken, as the market is being fueled mostly by pent-up demand, says Gobar, and sales of high-priced homes are being hurt by soaring mortgage rates.

Ann Arbor falls straight across the board. Here there's little pent-up demand, and prices exceed buyers' ability to pay.

Austin seems to have recuperated from the effects of the recession, and is beginning to bounce back.

Bakersfield picks up. Demand is outstripping supply because the local economy has grown faster than the stock of new housing.

Baton Rouge gets a higher rating this quarter, as conditions in the local economy start to resemble past recoveries.

Boston continues to be a pleasant surprise. The housing market looks good, though not quite as good as last quarter. Gobar points out that sustained growth throughout this SMSA over the past few years has created more opportunities for builders than most suspect.

Colorado Springs heats up again. Increased demand due to a big surge in employment results in a higher rating for this quarter.

Columbus, Ohio gets downrated, as the local economy continues to deteriorate. Greatest risk for builders, according to Gobar: high-end housing, particularly apartments.

Dallas-Fort Worth while still strong, is softening. New construction picked up considerably in the past few months and is now outpacing general economic growth. Gobar sees continued opportunities in the move-up market, provided potential buyers don't defer decisions to buy because of high mortgage rates.

Davenport-Rock Island starts to recover from recession, although the SMSA has not yet regained its former level of economic vitality.

SMSA (Market Area)	DEGREE OF OPPORTUNITY			DEMAND BY UNITS			DEMAND BY PURCHASING POWER		
	ALL HOUSING	FOR SALE	FOR RENT	ALL HOUSING	FOR SALE	FOR RENT	ALL HOUSING	FOR SALE	FOR RENT
AKRON, OH	●	●	●	●	●	●	●	●	●
ALBANY, NY	◐	◐	◐	◐	◐	○	◐	◐	◐
ALBUQUERQUE, NM	◐	◐	◐	◐	◐	◐	◐	◐	○
ALLENTOWN, PA	◐	◐	◐	●	●	●	○	○	○
ANAHEIM, CA	◐	◐	◐	◐	●	◐	○	○	◐
ANN ARBOR, MI	●	●	●	●	●	●	●	●	●
ATLANTA, GA	◐	◐	◐	◐	○	◐	◐	◐	◐
AUGUSTA, GA	○	○	◐	◐	○	◐	○	○	◐
AUSTIN, TX	◐	◐	○	◐	●	○	○	◐	◐
BAKERSFIELD, CA	◐	◐	◐	◐	◐	◐	◐	◐	○
BALTIMORE, MD	◐	◐	●	●	●	●	◐	◐	●
BATON ROUGE, LA	◐	◐	◐	◐	◐	◐	◐	◐	◐
BIRMINGHAM, AL	◐	◐	◐	◐	◐	◐	◐	◐	◐
BOISE, ID	●	●	●	●	●	●	●	●	●
BOSTON, MA	◐	◐	◐	◐	●	◐	○	◐	◐
BUFFALO, NY	●	●	●	●	●	●	●	●	●
CANTON, OH	●	●	●	●	●	●	●	●	●
CHARLESTON, SC	○	○	○	○	○	○	○	○	○
CHARLOTTE, NC	●	●	●	●	●	●	◐	◐	◐
CHATTANOOGA, TN	●	●	◐	●	●	◐	◐	◐	◐
CHICAGO, IL	◐	◐	●	◐	○	●	◐	●	●
CINCINNATI, OH	◐	◐	◐	◐	○	◐	◐	◐	◐
CLEVELAND, OH	●	●	●	●	●	●	●	●	●
COLORADO SPRINGS, CO	◐	◐	◐	◐	●	◐	◐	◐	○
COLUMBIA, SC	○	○	◐	○	○	◐	◐	◐	◐
COLUMBUS, GA	○	○	○	◐	○	○	○	○	○
COLUMBUS, OH	◐	◐	◐	◐	○	◐	◐	◐	●
CORPUS CHRISTI, TX	◐	◐	◐	◐	◐	◐	◐	◐	◐
DALLAS-FORT WORTH, TX	◐	●	○	○	●	○	●	●	○
DAVENPORT-ROCK ISLAND, IA-IL	◐	◐	◐	◐	●	○	◐	◐	◐

Dayton slumps, as all measures of housing demand continue to fall.

Denver slips a bit, and may get weaker. Employment is not keeping pace with population growth and this, says Gobar, may lead to a drop in new-home sales.

Eugene-Springfield may have bottomed out. Signs of recovery in this SMSA, however, are still relatively modest.

Gainesville shows signs of vitality, particularly in the single-family market. High interest rates, however, could knock out many potential sales despite considerable underlying demand.

Grand Rapids again gets a worse-than-average rating. The silver lining: The local economy is faring better than in several nearby industrial cities—such as Flint, Mich., Detroit and Gary, Ind.—where recession has taken a heavy toll.

Greensboro plummets. Gobar rates this market two levels lower than last quarter because of dramatic drops in most measures of housing demand, particularly industrial employment.

Greenville's economy is deteriorating almost as fast as Greensboro's, resulting in downratings in almost all categories of housing demand.

Houston is still strong, but less so than in recent years. Growth in the local economy has slowed, Gobar points out, affecting demand for all forms of housing, especially high-priced apartments. The long-range outlook, however, remains bright.

Jackson slips a notch all across the board and logs in its first major decline in ten years. The problem: high unemployment. Gobar points out, however, that this market is very resilient, and is still in better shape than much of the country.

Las Vegas takes a big turn for the worse, as the impact of a six-to-eight-month decline in local industry is felt. Another source of trouble: Prices are increasing faster than buyers' incomes.

Lincoln dips a bit as it begins to show the effects of recession. New housing is hitting the market faster than it can be absorbed, Gobar says, but he suspects this may simply be a seasonal change.

SMSA (Market Area)	DEGREE OF OPPORTUNITY			DEMAND BY UNITS			DEMAND BY PURCHASING POWER		
	ALL HOUSING	FOR SALE	FOR RENT	ALL HOUSING	FOR SALE	FOR RENT	ALL HOUSING	FOR SALE	FOR RENT
DAYTON, OH	●	●	●	●	●	●	●	●	●
DAYTONA BEACH, FL	◐	◐	○	◐	◐	◐	○	○	◐
DENVER, CO	◐	◐	○	◐	◐	○	◐	◐	◐
DES MOINES, IA	●	◐	●	●	●	●	●	○	●
DETROIT, MI	●	●	●	●	●	●	●	●	●
EL PASO, TX	○	◐	◐	◐	◐	◐	◐	◐	◐
EUGENE-SPRINGFIELD, OR	●	●	●	●	●	●	●	●	●
FLINT, MI	●	●	●	●	●	●	●	●	●
FORT LAUDERDALE, FL	○	◐	◐	○	◐	◐	◐	○	●
FRESNO, CA	◐	●	○	◐	●	●	●	●	◐
GAINESVILLE, FL	◐	●	○	◐	●	○	◐	●	◐
GARY, IN	●	●	●	●	●	●	●	●	●
GRAND RAPIDS, MI	◐	◐	○	◐	◐	○	◐	◐	◐
GREENSBORO, NC	●	●	◐	●	●	●	●	●	◐
GREENVILLE, SC	◐	●	◐	●	●	◐	●	●	◐
HARRISBURG, PA	◐	◐	◐	◐	◐	◐	○	○	○
HARTFORD, CT	○	◐	○	○	◐	○	○	○	◐
HONOLULU, HI	○	◐	◐	◐	●	◐	◐	◐	●
HOUSTON, TX	○	○	○	○	○	○	○	○	◐
HUNTSVILLE, AL	○	○	◐	◐	○	◐	●	◐	◐
INDIANAPOLIS, IN	◐	○	◐	◐	○	◐	○	◐	◐
JACKSON, MS	○	○	○	○	○	○	○	○	○
JACKSONVILLE, FL	◐	◐	◐	◐	◐	◐	○	○	◐
KANSAS CITY, MO-KS	●	●	●	●	●	●	●	●	●
KNOXVILLE, TN	◐	○	◐	◐	○	◐	○	○	○
LANSING, MI	●	●	●	●	●	●	●	●	●
LAS VEGAS, NV	◐	◐	◐	◐	○	◐	◐	●	●
LEXINGTON, KY	●	●	●	●	●	●	●	●	●
LINCOLN, NE	○	○	●	○	◐	●	◐	◐	●
LITTLE ROCK, AR	○	○	○	○	○	◐	◐	◐	◐

Los Angeles suffers from the triple woes of unemployment, high prices and high interest rates. Pent-up demand is strong, however, especially for single-family housing.

Louisville gets downrated this quarter. Unemployment has soared again after a brief respite a few months ago.

Lubbock looks sluggish. This SMSA is suffering from unemployment, as well as reduced demand for non-residential construction. It could receive an even lower rating next quarter.

Miami continues to fall, due partly to an absence of pent-up demand and overbuilding. The ratings may be a bit off target because of several complicating factors in the market, namely, offshore investors, an active underground economy, a large number of cost-sensitive retirees and an influx of Latin American immigrants.

Nashville's economy is declining, leading Gobar to expect more apartment vacancies in the near future and "resistance to home sales in any price bracket."

Newport News is a bright spot, mainly because of a resurgent coal industry. Employment is on the rise, as is new industrial and commercial construction.

Omaha has picked up again. Housing prices seem to be well within consumers' budgets, resulting in good demand for single-family housing. But Gobar warns that slow economic growth is holding down the number of new buyers entering the market, so builders should beware of overproduction.

Philadelphia's major market—move-ups—are being discouraged by high interest rates, resulting in this quarter's downrating.

Phoenix is suffering from a declining economy. Gobar fears the SMSA may also be somewhat overbuilt, given the building boom of the last few years and the drop in demand.

Pittsburgh just as other industrial cities, is feeling the impact of recession. Nevertheless, high incomes have kept this market from declining across the board. One thing that may gum up the works: high interest rates.

SMSA (Market Area)	DEGREE OF OPPORTUNITY			DEMAND BY UNITS			DEMAND BY PURCHASING POWER		
	ALL HOUSING	FOR SALE	FOR RENT	ALL HOUSING	FOR SALE	FOR RENT	ALL HOUSING	FOR SALE	FOR RENT
LOS ANGELES-LONG BEACH, CA	○	◐	◑	○	◐	◑	◑	◐	◑
LOUISVILLE, KY	◑	◑	◑	◑	◑	◑	◑	◑	◑
LUBBOCK, TX	○	○	○	○	○	○	○	○	◑
MADISON, WI	○	◐	◑	◐	◐	◑	○	◐	◑
MEMPHIS, TN	◑	◑	◑	◑	◑	◑	◑	◑	◑
MIAMI, FL	◑	◑	◑	◑	○	◑	◑	◑	◑
MILWAUKEE, WI	◑	◑	◑	◑	◑	◑	◑	◑	◑
MINNEAPOLIS-ST. PAUL, MN	◑	◑	◑	○	○	◑	◑	◑	◑
MOBILE, AL	○	○	○	○	○	○	○	◐	◐
MODESTO, CA	○	○	○	◐	○	◐	○	○	○
NASHVILLE, TN	◑	◑	◑	◑	◑	◑	◑	◑	◑
NEW BRUNSWICK, NJ	○	○	○	◐	◐	◐	○	○	◑
NEW HAVEN, CT	◑	◑	◑	○	○	◑	◑	◑	◑
NEW ORLEANS, LA	○	○	◑	○	○	◑	◑	◑	◑
NEWARK, NJ	○	◐	◑	◐	◑	◑	◑	◑	◑
NEWPORT NEWS, VA	◐	◐	○	◐	◐	○	◐	◐	◑
NORFOLK, VA	○	○	◑	○	◐	◑	◑	◑	◑
OKLAHOMA CITY, OK	◐	◑	◐	◑	◑	◑	◑	◑	○
OMAHA, NE	○	◐	○	○	○	○	◐	◐	○
ORLANDO, FL	◐	◐	○	◐	◐	◐	○	◐	○
PENSACOLA, FL	◑	◑	○	◑	◑	○	○	◑	◐
PEORIA, IL	◑	◑	◑	◑	◑	◑	◑	◑	◑
PHILADELPHIA, PA	◑	○	◑	◑	◑	◑	○	◐	◑
PHOENIX, AZ	◑	◑	◑	◑	◑	◑	◑	◑	◑
PITTSBURGH, PA	◑	◑	◑	◑	◑	◑	○	○	◐
PORTLAND, OR	◑	◑	◑	◑	◑	◑	◑	○	◑
PROVIDENCE, RI	◑	◑	◑	◑	◑	◑	◑	◑	◑
RALEIGH, NC	◑	◑	◑	○	○	◑	◑	◑	◑
RENO, NV	○	○	◑	○	◐	◑	◑	○	◑
RICHMOND, VA	◑	◑	◑	◑	◑	◑	◑	◑	○

Salt Lake City is undergoing what may be the worst economic decline of the past ten years, says Gobar. In addition, housing is starting to become to expensive for local residents

San Antonio is going strong. The local economy is healthy, and the market seems to be underbuilt. The only potential problem Gobar sees, especially for upper-income housing, is high interest rates. But generally the trend is upwards.

San Diego's housing market is being hurt by a slowdown in employment and high interest rates. Nevertheless, there's plenty of pent-up demand. Several local builders are surmounting the problems by offering creative financing deals.

Santa Barbara is stagnant, and could get worse. Pent-up demand is supporting sales at present, but the large amount of high-priced housing currently on the market is vulnerable to high interest rates and the general economic slowdown, which could impact in this market if the recession continues.

Seattle's economy is cooling down, "If this continues," says Gobar, Seattle's market could lose some of the glamor of the last few years."

Stockton's economy could be on the verge of a comeback because employment has picked up. If it happens, prospects for builders will improve, provided surplus housing now on the market is sold off first.

Tacoma has serious problems. A declining wood-products industry has pulled down the rest of the local economy, and, along with it, builders' prospects.

Tampa is in decline, as non-farm employment and commercial construction drop off faster than anytime since the recession of 1974-1975. The current decline, however, is not nearly as bad as during the last recession.

Wichita drops one notch, despite a continuing shortage of housing. Reason: the underlying economy is deteriorating at a faster rate than any time in the last ten years.

SMSA (Market Area)	DEGREE OF OPPORTUNITY			DEMAND BY UNITS			DEMAND BY PURCHASING POWER		
	ALL HOUSING	FOR SALE	FOR RENT	ALL HOUSING	FOR SALE	FOR RENT	ALL HOUSING	FOR SALE	FOR RENT
ROCHESTER, NY	●	●	●	●	●	●	●	●	●
SACRAMENTO, CA	●	○	●	○	○	●	●	●	●
ST. LOUIS, MO	●	●	●	●	●	●	●	●	●
SALINAS-MONTEREY, CA	○	○	●	○	●	○	●	●	●
SALT LAKE CITY, UT	●	●	●	●	●	●	●	●	●
SAN ANTONIO, TX	●	●	●	●	●	●	●	●	●
SAN DIEGO, CA	●	○	●	○	●	●	●	●	●
SAN FRANCISCO-OAKLAND, CA	●	○	●	○	●	○	●	●	●
SAN JOSE, CA	●	●	●	●	●	●	○	○	○
SANTA BARBARA, CA	○	●	○	●	●	●	●	●	●
SANTA ROSA, CA	○	○	○	●	○	●	●	●	●
SARASOTA, FL	●	●	●	●	●	●	●	●	●
SEATTLE, WA	●	●	○	●	●	○	○	○	●
SHREVEPORT, LA	○	○	●	○	○	●	●	●	●
SPOKANE, WA	○	○	○	●	○	●	○	○	●
SPRINGFIELD-CHICOPEE, MA	●	●	●	●	●	●	○	●	●
STOCKTON, CA	○	○	●	○	○	●	●	●	●
SYRACUSE, NY	●	●	●	●	●	●	●	○	●
TACOMA, WA	●	●	●	●	●	●	●	●	●
TALLAHASSEE, FL	●	○	●	●	○	●	●	○	●
TAMPA-ST. PETERSBURG, FL	○	○	●	○	○	○	○	○	●
TOLEDO, OH	●	●	●	●	●	●	●	●	●
TUCSON, AZ	●	●	●	●	●	●	●	●	●
TULSA, OK	●	●	○	●	●	●	●	●	○
WASHINGTON, DC	○	○	●	○	●	●	●	○	●
WICHITA, KS	●	●	●	●	●	●	●	●	●
WILMINGTON, DE	●	●	●	●	●	●	●	●	●
WORCESTER, MA	●	●	○	○	●	○	●	●	●
YOUNGSTOWN, OH	●	●	●	●	●	●	●	●	●

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- How to use financing packages as marketing tools

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4 BUILDERS SET STRATEGY IN AN UNPREDICTABLE MARKET

The four builders in this story operate in different parts of the country and deal with the peculiarities of those regions. But all face the same major problem as builders everywhere. It can be summed up in this simply put, but difficult-to-answer, question: How does one do long-range planning in a market where even the short-run is uncertain?

Each of the builders shown here has managed not only to survive but to prosper in this tenuous environment. And each has done it by adapting his operation to changing market conditions.

Sometimes this meant leaving traditional markets and going into completely new and unfamiliar areas like commercial work or low-cost housing. Other times it meant finding new sources of financing. And two builders—Chatelain and Griffith—found solutions to the problems of the present and future in the housing of the past.

For an in-depth look at how four builders are coping with today's uncertain economy, turn the page.

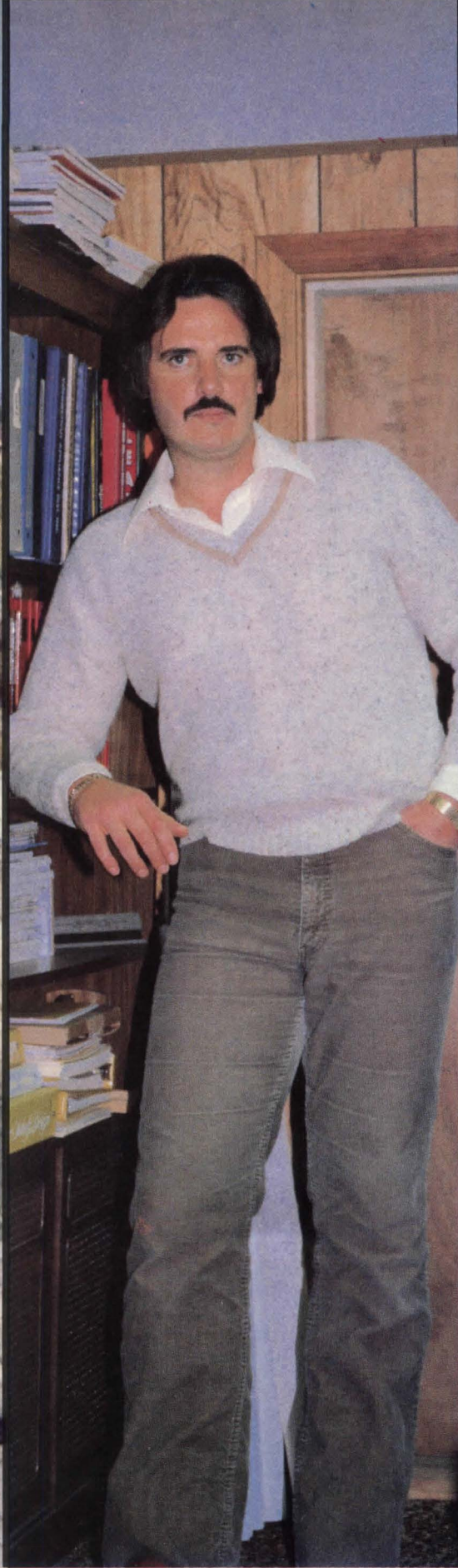
—WALTER L. UPDEGRAVE



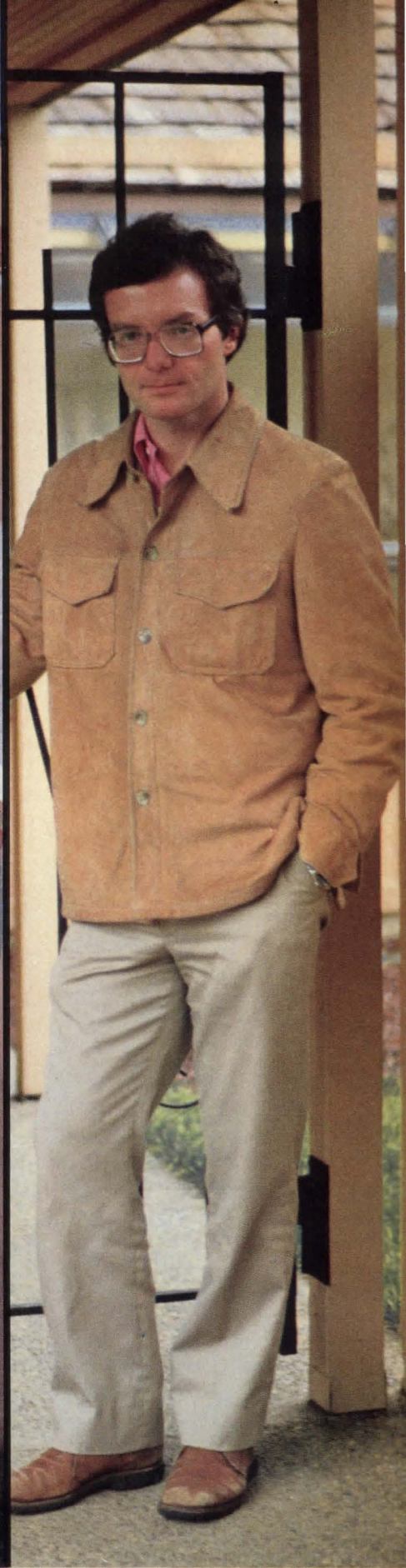
George Writer
The Writer Corporation
Denver, Colo.



Nelson Chatelain
Cypress Builder's, Inc.
New Orleans, La.



Carl Griffith
Griffith Custom Builders
Watertown, Conn.



John Morrison
Spyglass Development Company
Eugene, Ore.

'I'll be surprised if we're doing any single-family-detached homes by 1985'



WALTER L. UPDEGRAVE

Denver's Writer Corp. has radically changed two important aspects of its operation over the past ten years: what it builds and where.

"In 1970, virtually 100% of our developments were in suburban areas," says George Writer, the corporation's 45-year-old president. "And the way the product mix broke down was 75% single-family-detached, 15% clusters—higher density detached—and 10% townhouses."

Five years later, he says, Writer Corp. was still developing suburban land, but the product mix was more like 50% detached, 25% cluster and 25% townhouses. In 1980, Writer moved back toward the city while his mix shifted again, this time to 15% detached, 35% cluster and 50% townhouses—almost the opposite of what it had been 10 years earlier.

Predicts Writer, "I'll be surprised if we're doing any single-family-detached homes by 1985."

Whether it comes to that or not, the point is that development patterns in the '80s are going toward "higher density attached products with smaller, better designed units." The single-family-detached lifestyle, he reasons, won't be the one that sets the tone for this decade. "And we feel we can anticipate the changes in the market and the industry enough," says Writer, "so we won't get burned." In short, Writer has already begun tailoring what he builds to the constraints of higher land and money costs.

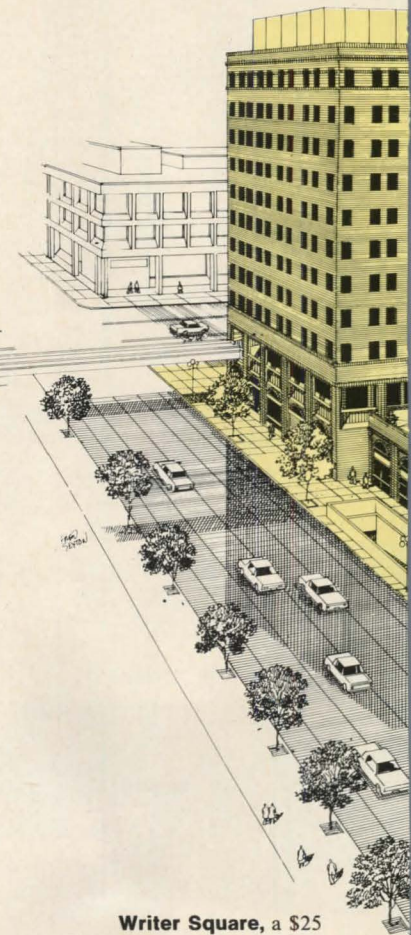
Adapting to change is hardly new to Writer. In 1961, he and a partner began building custom homes in Denver. "In 1965, we did 100 homes and were the largest custom homebuilders in the United States," says Writer. "And I hated custom homes." The next year, the partners split because Writer wanted to do housing on a larger scale. His next major project was a 400-unit PUD in Boulder and, says Writer, "it's been PUDs ever since."

Writer made another major change in 1972: He went public. "We needed the capital to stay in the game with the big housing companies," he explains. So he sold stock and raised \$1.8 million in equity which allowed him to buy more land and increase his volume. It also made him and his compa-

ny more visible, not to mention accountable to shareholders. He feels the higher profile has forced Writer Corp. to perform better.

The Writer Corp.'s aim to look for new opportunity in the market is best represented, however, by the pet project which just happens to bear Writer's own name—Writer Square. A \$25 million mixed-use project located in the heart of Denver's revitalized center city, Writer Square consists of a 12-story, 112,000-sq.-ft. office building, 12 flats and townhouses geared to a luxury market, and, below the residential units, 50,000 sq. ft. of retail space. A two-level underground garage provides 540 parking spaces.

The location could hardly be better.



Writer Square, a \$25 million project which combines residential, retail and office space, is the first mixed-use development for the Writer Corp.

To one side is Larimer Square, Denver's entertainment and shopping center. On the opposite side a new \$60 million pedestrian mall is going up, also part of the city's renaissance. A walkway runs through Writer Square and connects it to the new mall and Larimer Square. The final touch is this: Writer acquired the 106,000-sq.-ft. site from the Denver Urban Renewal Association at \$10 a sq. ft.—a bargain considering nearby sites are selling at 20 times that. "We love the arithmetic on it," Writer flatly states.

There are several "firsts" in this project for the Writer Corp. It was the company's first joint-venture deal. New England Life put up equity for half interest in the office building and retail space. Writer Corp. retains full share in the residential units and—an unexpected bonus—gets to keep all

depreciation on the project.

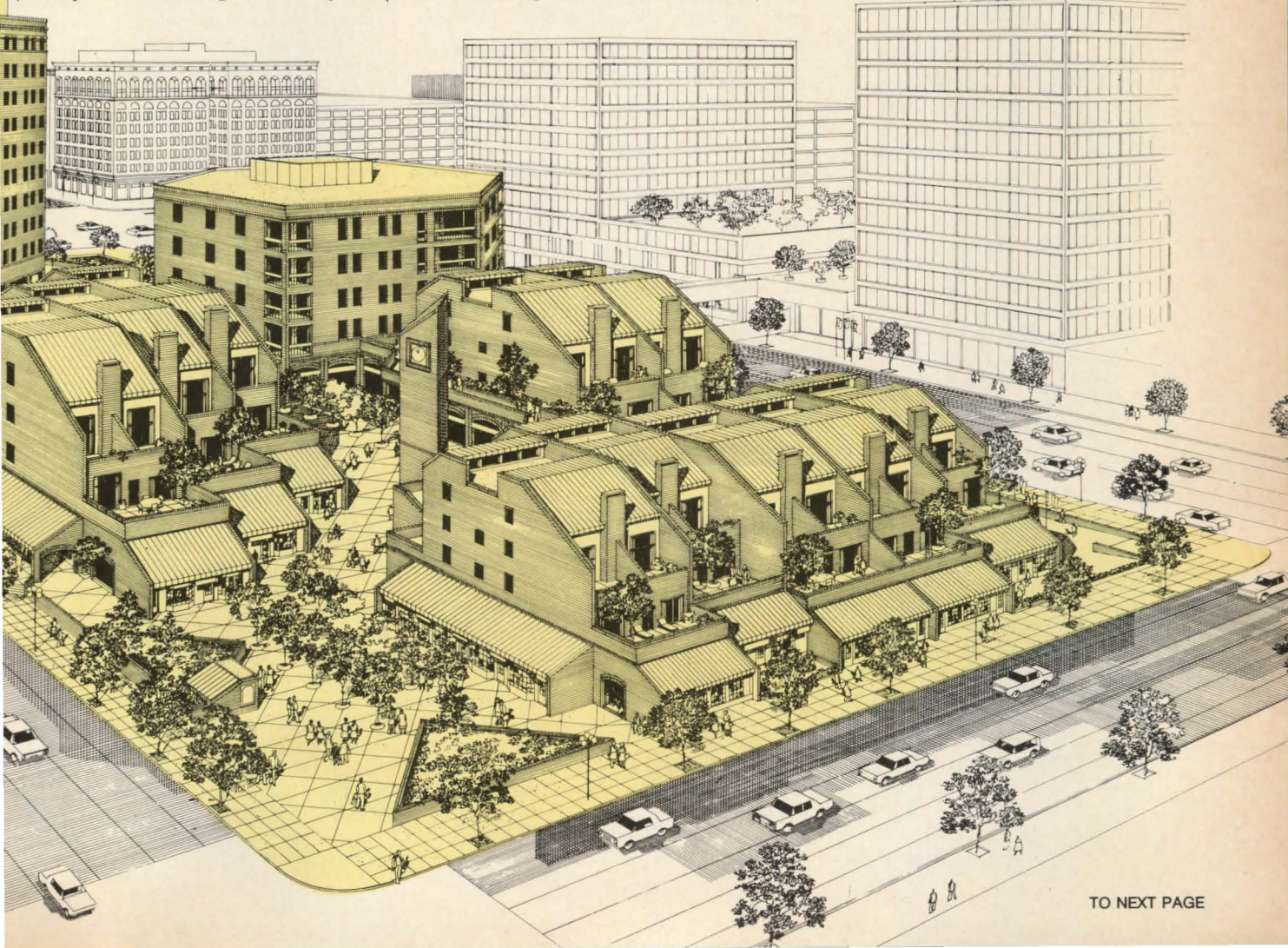
This was also Writer's first commercial project as well as his—and Denver's—first mixed-use development. A jump from residential to commercial is difficult enough. Add mixed-use to that and the potential for problems increases. To avoid pitfalls, Writer brought in Charles Wardin to be the Writer Corp.'s liaison with the project's general contractor. Wardin's 30 years experience as a general contractor has resulted in much of the existing commercial development in downtown Denver.

Writer expects to complete the Square in April of this year. So far, everything's gone smoothly. But the first time anyone does something of this magnitude in an unfamiliar area, Writer figures, a few bugs are certain to need working out. "We'll have some

'dumb tax' to pay on this," Writer jokes. "So we'll just take our time and finish it out right before we turn our attention to something else."

That something else will include, no doubt, more commercial work, but Writer insists his company's main business is still homebuilding. "We're not trying to get out of housing," he says. "We're totally committed to PUDs. We like those closings and we like those paydays."

That's why Writer keeps an eye on the development trends in the Denver metropolitan area. The city's business activity and population are both expected to grow substantially in the immediate future. So will the demand for housing. The problem will be finding a place to put homes. The moun-



tains to the west and industrial activity to the north rule out those two areas. Arapahoe County, to the south, has mostly been developed, while Douglas County, further south, offers few water and sewer facilities.

That leaves the east and southeast where current development is taking place. But as this trend continues further southeast, congestion on the few highways leading into Denver will become a factor, adding gas costs and commuting time to a buyer's considerations. "When I look at this pattern," says Writer, "I see the cost of suburban housing becoming prohibitive."

Still, Writer will pick up suburban land if it has good access to the city. One such parcel is Willow Creek which, when built out, will contain 741 detached homes, 650 cluster units and 197 townhouses selling in the \$88,950 to \$131,500 range. Willow Creek sits on the southern edge of Arapahoe County, directly beside I-25, the main road running through Denver.

As the development ring expands southeastwards from Denver, Writer is also looking for infill opportunities inside it. One example of such an opportunity is Cherry Creek Meadows: 270 townhouses priced at \$82,500 to \$89,950 and located on a 35-acre site nine miles from the center of Denver.

The growing scarcity of developable land combined with Denver's growing population makes buying and developing land more important than ever to the Writer Corp.'s performance. "I like to have about a 4-year inventory of land on hand," says Writer. "When I've got land for 2,500 units or so, I can feel comfortable."

In search of the comfort that comes from land approved and ready to be built on, Writer attends a meeting of the city council of Littleton, a small city outside Denver. The council has scheduled a public hearing on a project called Southpark: a campus-style industrial park and residential PUD on 442 acres in Arapahoe County. The Writer Corp.'s stake in Southpark is 176 acres on which it will build 1,153 units—272 detached at four to the acre, 290 townhouses at ten to the acre, another 441 townhouses 14 to the acre and 150 luxury attached units 8 to the acre. With 70 acres of open space deeded to the city, overall densi-

ty on the 176 acres is 6.3 units. The price range is wide. Townhouses start at \$60,000, the detached homes at \$90,000 and the luxury units at \$120,000. Emkay, a subsidiary of Morrison-Knudsen, will develop the 266-acre industrial park.

Writer and Emkay representatives arrive promptly at 7:30 p.m. for the meeting. But before the council gets to the Southpark issue, there are a few preliminary agenda items to be cleared up. One is a public hearing to decide if the beer license of T.J.'s Pizzeria should be revoked. Irate neighbors charge that T.J.'s is a disco—"there's live music and *dancing*"—while T. J. claims it's just a restaurant with entertainment. After 3½ hours of battle, T.J. escapes, his license still intact.

Southpark is next. But the council juggles the agenda so the hearing on the city's low-income or assisted hous-

'I see the cost of suburban housing becoming prohibitive'

ing program is held first. "We know you'll wait," jokes the city council president, looking over at Writer and the Emkay representatives. With 1,153 units, some \$100 million in potential sales, at stake, Writer settles in to wait all night if that's what it'll take.

The assisted housing hearing runs until 11:45 p.m. At that time, the Southpark hearing opens. "In the interest of time and recognizing the lateness of the hour," the city council president suggests scheduled presentations of Writer Corp. and Emkay be dropped and the hearing be reduced to a question and answer period.

No serious questions are raised. Is there a site on the development for a school house? How about a fire station? Writer says the city can put whatever it wants on the land set aside for open space land. The council seems to favor the plan and a planning official recommends it be approved. Everything appears headed for a vote. But before that happens, a councilwoman seizes the opportunity for a little arm-twisting.

She asks Writer what he thought of the hearing on assisted housing. He

comments about the necessity of such programs. Then she asks if he, an experienced and prominent developer, might be willing to sit down with Littleton's public housing officials and help them set the future development of their program. Writer agrees to make himself available. Then the real arm-twisting comes. "In the interests of helping the assisted housing program in Littleton," begins the councilwoman, "would the Writer Corp. be willing to sell one of the Southpark townhouses to the city—at cost?"

Writer starts his answer with an oration on the economics of subsidized housing. Fifteen minutes later, after a Writer treatise on rising borrowing and construction costs, the push toward higher densities due to the growing scarcity of land and the real need for affordable housing, no one seems to remember what the original question was, let alone whether Writer answered it or not. The councilwoman drops the point.

It's now 12:45 a.m. A motion to approve the plan carries unanimously. Writer sits back comfortably with another 176 acres under his belt.

Writer's strategy for the immediate future is to get his houses closer to the Denver median price. Right now, he's slightly above it. Southpark, with units starting as low as \$60,000, will help achieve this. Still, the Writer Corp. has an image of quality, of catering, as Writer puts it, "to a certain level of taste." He doesn't want his company to become so big that he loses that image and gains an assembly line one. He figures the company can build about 1,000 units a year, twice his current volume, without jeopardizing its image.

More commercial projects are on the boards—a shopping center at Willow Creek and three office buildings in the business park where Writer's own office sets, to name but a few. Wardin, when he's through with Writer Square, will handle that end of the business. The positive reaction to Writer Square suggests Wardin won't have to go far to look for new commercial opportunities. Already, opportunity's knocking on Writer's door. Notes Writer, "People are looking at us now and saying, 'Those guys are more than just nail pounders.'"

**If I'm successful,
people will
call me a genius.
If I'm not,
they'll
call me dumb'**



ANTHONY L. LIPPER/AVI

No one would ever accuse Nelson Chatelain of following the herd. While others react to this uncertain market by holding off completely or scrambling for any market with the look of life in it, Chatelain confidently takes a course that runs counter to what most of his competitors in New Orleans are doing.

They build with brick. Chatelain's gone to wood. Others are going with smaller, more basic houses. He's building larger homes with nostalgic looks, what he calls "a Disneyland kind of thing with feeling." He's even gone to wood foundations. Observes Chatelain, "If I'm successful, people will call me a genius. If I'm not, they'll call me dumb." Chatelain gives the impression he doesn't care what they call him. All that matters is that he senses a demand for something he's got—something he knows no one else has.

Last year, in cooperation with the American Wood Council, Cypress Builders, Chatelain's company, constructed the Acadian Country House, a 2,200-sq.-ft. home whose design is based on the old homes of southern Louisiana's bayou country. Steep roof gables, a spacious front porch and beveled wood siding give the house a "country estate" look. Inside, the feeling is carried through with such features as ceiling fans, paneled walls and French doors. In addition to the home's ample floor space, a detached two-car garage offers a second-floor "bonus room" of 260 sq. ft.

Late last fall, Chatelain's wife, Charlene, decorated the house with items from Kirschman's, a New Orleans furniture store. Then they opened it up to the public for three weeks. The Wood Council and New Orleans Public Service, the local utility company, ran radio, newspaper and television ads to attract visitors. Opening day, 1,895 people showed up. At the end of the three weeks, some 6,575 people had toured the house.

Chatelain now keeps his office in the Acadian house. He likes working in a house that sits on his subdivision, he says, "because I can look out the window and keep an eye on my money."

The enthusiasm of those who visited his Acadian house sealed it for him. Now he was certain of a demand for a wood house in an area where brick

dominates. He also noticed that in today's age of diminished expectations, "people want something nostalgic. They want to escape to earlier, what they see as better, times." To cater to that sentiment, Chatelain came up with a line of six homes. Besides the Acadian, there's the Country Classic, Victoria, Pre-1900, Double Gable Victorian and appropriately enough, the Nostalgia. They range from 1,800 to 2,700 sq. ft. in size and from \$130,000 to \$170,000 in price. All have a "period" look and include porches and detached garages.

To heat and cool his period-style homes, Chatelain has gone to a modern application of the age-old method of heating via a plenum, an airtight and insulated space, located beneath the floor of the home. The plenum foundation system works like this: Hot or cool air is forced into the plenum by the furnace or air conditioning unit. Via holes cut in the plenum at appropriate places throughout the house, this slightly pressurized air is allowed to escape where it's needed to heat or cool. Chatelain uses the Plen-Wood system—one where the plenum is made of wood—not only because he believes it will save energy and cut fuel bills, but because it elevates the home more than does a conventional foundation. "Psychologically, people feel better walking up into a home," contends Chatelain. And at \$130,000 and up per home, he wants to do all he can to keep buyers happy. The higher foundation can also lower buyers' flood insurance premiums, an important consideration to New Orleans buyers who live on a flood plain.

Besides the Plen-Wood system, there's another energy-saver that helped pique the utility company's interest in the Acadian house. It's a heat re-cycling water-heating system which, as a by-product of providing hot water, throws off cool air that can be channeled indoors in summer or vented outdoors in winter. Chatelain reckons this system can cut electricity costs for heating water by half. He's got meters hooked up that will tell him how close his reckoning is to fact.*

*For literature on the Plen-Wood system and heat re-cycling water heater used by Chatelain, write: Energy Systems, HOUSING, 1221 Avenue of the Americas, New York, N.Y. 10020.

The "Disneyland dazzle" strategy doesn't stop at the nostalgic houses. Chatelain's going for the same effect in the subdivision he's putting them on—Lake Carmel, a 135-acre site in East New Orleans, about 10 minutes' drive from downtown New Orleans and the historic French Quarter.

Technically speaking, there isn't any lake in Lake Carmel at the moment. That's because Chatelain is in the process of dredging and deepening the 18-acre lake that was there into the 20-acre lake he wants there. But when he stands in front of the big hole that was a lake and talks about his plans for the new and revised Lake Carmel, he comes as close as one can without water to conjuring up a shimmering lake.

"I want to make it something fantastic," says Chatelain. "Something that'll grab people's imaginations—and something they can use." For ideas that will make his lake unique, Chatelain went to his 10- and 12-year-old daughters. One suggested he put a magnificent fountain in the center of the lake. "So we're going to have a fountain that shoots a 30-foot-high spray of water," continues Chatelain. "And sailboats and paddleboats so people can go out on a hot day and soak themselves under it." The other daughter wanted leaping porpoises. "Somebody told me they've got fresh water porpoises down in South America," he says. "I'll have to check that out." Until then, he'll stock the lake with channel catfish, "big babies, 10 pounds."

Adjacent to the lake will be Chatelain's "meandering pool." It's total length is about 250 feet, "but it meanders all over the place," he says. Spaced along its wanderings will be whirlpool baths, spas, sliding boards and diving areas. He's also planning amenities like volleyball, badminton, shuffleboard, a sauna, sundeck and *bocce*, Italian bowling. He's even considering a bar. That way, Hurricanes, the drink New Orleans is famous for, could be served.

Of course, Chatelain's the first to admit he's not doing all this because he's some kind of goody-two-shoes. "I'm a money-grubbing capitalist," he's fond of saying. "Nothing wrong with that." Truth is, he does things

like pay for pampas grass plants and sycamore trees along 3,500 ft. of city property leading up to his subdivision because 15 years of real estate experience over the 35 years of his life has taught him that such things will make his project sell faster and for more money than it would without them. The lake is another example of such a prudent business decision.

Some people look at that hole and see dirt," Chatelain says. "I look at it and see money." Draining, dredging, and re-filling the lake, he estimates, will cost around \$1 million. But Chatelain expects to get back that million and more by selling the pile of dirt that gets bigger as his hole gets deeper. Due to flood conditions in New Orleans, enough fill must be added to each building lot so the foundation sits two

'I build strictly spec. No models and I won't pre-sell a house'

ft. above curb level. At current market rates, Chatelain estimates fill costs at about \$1,500 per lot. Not only will the lake provide fill for the lots in his subdivision, it's throwing off enough so he can sell to other builders too. "In a way, I kind of hate to put water back in it," he says. "Because that's the end of my fill business."

Chatelain sold most of the 283 lots in the first phase of Lake Carmel to other builders. When he saw what they built—"a little throw-together kind of house"—he made up his mind to do the second phase, the 200 period-style homes, and third phase, 250 attached townhouses, by himself at his own pace—"street by street, about 35 houses a year." Of course, he could hire more subs and do the whole thing more quickly if he wanted to. "But all I want to do is make money," Chatelain reasons. "What's the difference if I make \$5 million or \$10 million? I'll never get the chance to spend it."

Thanks to a recent \$100 million bond issue through the New Orleans Home Mortgage Authority, it looks like Chatelain may build out the first phase of Lake Carmel even sooner

than he'd originally planned. "I've put in an order for a million and a half of that bond money," says Chatelain. "And the odds look pretty good that I'll get it."

Specifically, the mortgage authority's bond issue will enable Chatelain to offer his buyers 30-year mortgages at the bargain rate of 11½%. The maximum allowable mortgage amount under the program is \$75,000. Buyers must also come up with a 5% minimum down payment.

Of course, these mortgages won't go far towards financing one of Chatelain's \$175,000 "Disneyland" homes. So what he'll offer are a few contemporary designs and smaller versions of his period-style line, minus some of his touches such as custom interior paneling and parquet floors. Also, none of these homes will feature the Plen-Wood system.

Through the housing authority money, Chatelain expects to do 20 homes ranging in size from 1,550 to 2,000 sq. ft. and in price from just over \$70,000 to just under \$95,000.

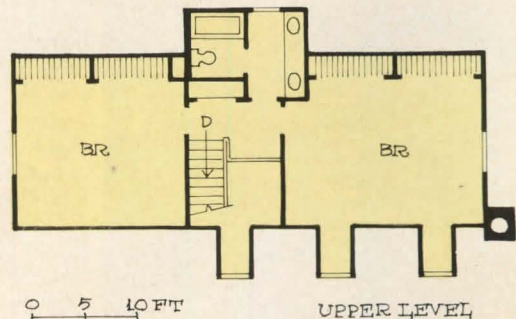
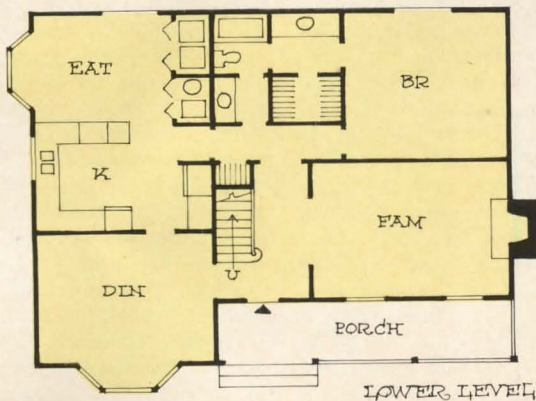
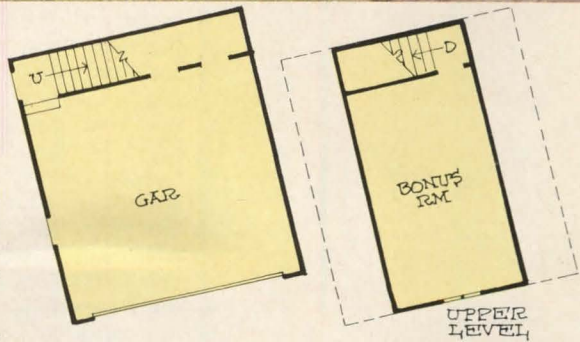
He'll sell these homes just as he sells his \$175,000 ones—strictly spec: "I don't use models and I won't pre-sell a house." Realtors in the area have sent Chatelain clients with certified checks in hand made out to cash for 25% of the price of a home. Chatelain turns them away. "I don't want to see a buyer until the house is finished," he says. And then he only deals on an as-is basis.

Chatelain plans to go on doing just what he's been doing, putting up homes with a "Disneyland feeling" at Lake Carmel at his chosen pace. Nearby, he's got a 6½-acre piece of land zoned for commercial use, but he's unsure how he'll develop it. He once came close to doing a shopping center there for which *MONEY*, the New York-based insurance company, had put up the permanent loan. Chatelain backed out at the last minute because "the numbers didn't feel quite right."

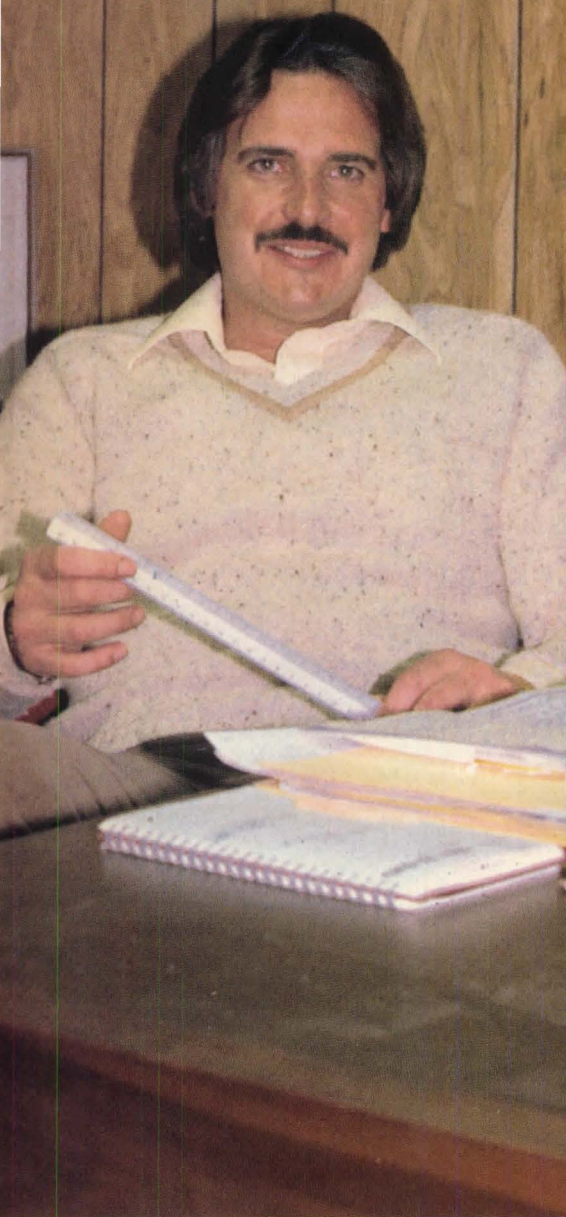
Except for a lone Sno-Ball stand, the commercial lot is vacant. He's in no hurry, though, to do anything with it. "I don't owe anything on it, and it's appreciated about \$500,000 in the last six months," he says. "Besides, the guy who owns the Sno-Ball stand says he's going to start paying rent."



Nostalgic design of the Acadian Country House, with its steep gables and lap siding, is one of six such period styles Cypress Builders' Nelson Chatelain offers in east New Orleans. Plans for the Acadian feature 2,200 sq. ft. of interior living space, a 166-sq.-ft. porch and an 830-sq.-ft. detached garage with a second floor "bonus" room.



'I'm not sure where I should be headed. Right now, I'm waiting to see what the economy does and which way the market goes'



WALTER L. UPDEGRAVE

Carl Griffith's building company, Griffith Custom Builders, of Watertown, Connecticut, is all primed up and ready to go. Problem is, he's not sure where.

Griffith has always gone for a market which is far from low-end, but not exactly a discretionary-income market either. He builds customized homes—in subdivisions he's developed or on an owner's lot—that sell in the \$70,000 to \$100,000 price range or higher, depending upon just how customized the homes are. In the central Connecticut area where he does most of his work, Griffith has acquired a reputation as a builder of "aesthetic" homes, with detailed finishing, especially paneling and dentil trim, his trademark. A good example of his work is the house in which he and his wife live: a 6,000-sq.-ft. replica, gables and all, of the Salem Witch House which was built in 1632. "We saw a picture of it in a magazine," says Griffith, "so we went to Salem to take a look." Afterwards, he drew plans using the picture and notes from the visit. A structural engineer as well as builder, Griffith designs and draws his own plans.

But the market for his customized homes is weak. The problem isn't demand—there's plenty of that—but economics. Griffith faces the same problem many builders today face: Land and construction costs are rising faster than buyers' incomes. When sales don't die from this fact alone, higher mortgage rates usually manage to drive the final nail into the coffin. Griffith's situation comes down to this: The people he's always built for can't afford the house he's always built them. Which leaves him with a choice. Build something smaller, simpler and less expensive—that is, less customized. Or, go to an even higher market where buyers' incomes are so big they don't fuss about fluctuating mortgage rates. Either way, it means doing business differently. "The middle class is getting squeezed out of the market," observes Griffith. And he knows if he doesn't want to get squeezed out along with them, he'll have to adapt.

Diversity is the key to the way Griffith is coping with his changing market. Whichever direction he sees opportunity heading, he wants to be able to pursue it. Which means he's

got to be ready to move in several directions on short notice. Specifically, Griffith has diversified into remodeling and prefabricated housing.

Remodeling isn't exactly new to Griffith. He started in this business through remodeling about 10 years ago when he was a 22-year-old out of school and in need of a job. But he worked harder than ever at remodeling last year and brought in a full-time man, Bob Smith, to handle that end of his operation.

Griffith turned back to remodeling for two good reasons. One, his previous experience allows him to accurately estimate jobs. This alone, he figures, gives him an advantage over some others in the business. Two, he is committed to keeping his crews on payroll rather than work through subs. When the housing market is slow, he keeps his crews in work and in cash by taking on more remodeling jobs. This way he doesn't lose the trained workers who put the finer touches on his customized homes. "And when the market picks up and we start building," says Griffith, "I'm not out there looking for subs with every other builder in town."

Last year, he did around a million dollar volume in remodeling alone. This year, he expects it to be an even bigger dollar producer, perhaps his biggest if one venture works out.

The "venture" is a national franchise operation for remodelers called Remodeling U.S.A. Recently, Griffith met with the franchise organizer, Joel Green, in Mesa, Ariz., to see if he and Green could help each other. Green wants to set up a network of 2,500 independently owned franchises around the country under the Remodeling U.S.A. logo. The parent company would offer franchisees an advertising program, training in job scheduling and estimating and the credibility of a nationally known brand name. In short, Green wants to become the Century 21 of remodeling.

Griffith sees himself possibly as one of 50 master franchisors in the program. He'd oversee a number of smaller franchises in his area, making him, in effect, the remodeling king of Connecticut. So far, this is all still talk.

Further along is Griffith's move towards the affordable market through

prefabricated houses. There, Griffith is working with Boise-Cascade and its Kingsberry line of townhouses. "Everything points to a need for higher densities and more affordable housing," reasons Griffith. "Maybe the answer to the housing needs of the future is in the row homes we built in our inner cities in the past."

Griffith likes the townhouses' style and design—layouts range between 975 and 1,600 sq. ft.—and the fact that he can put them up in rows of two's through six's depending upon the needs of the site. He also likes the price he can produce them for: They'll sell from \$45,000 to \$59,000.

Not only is this Griffith's chance to do affordable housing, it's a way to do a higher volume than he's ever done before. In his custom work, he's limited to maybe thirty-five houses a year. By going with prefabricated homes, shipped from Boise-Cascade's plant in Virginia, his crews will assemble more than build—which makes possible a drastic increase in volume.

Commercial building offers Griffith another likely path for diversity. Central Connecticut is becoming more and more popular to business and industry. Already, companies like Timex and Scovill are in the area while others like Allied Chemical and Exxon are expected to follow. The influx will be heavier when Routes 8 and 25, now being widened, make New York City even more accessible to those living and working in this area. Griffith is considering commercial condominiums. His idea is to build, say, a 10,000-sq.-ft. building for a company that needs only 3,000 sq. ft. of space now but will need more later. Such a company could buy the building, rent out the extra space, and gradually grow into it.

All this diversity and reaching out in new directions doesn't mean Griffith has abandoned his bread and butter, the custom homes where he made his reputation. In fact, he's just gotten approval to do 50 luxury single-family-detached homes on a 132-acre parcel in Middlebury, Conn. The name of the project is Brentwood, but Griffith calls it his "dream project." The single-family-detached homes will average 2,600 sq. ft. and start at \$175,000. He's talked to one potential buyer

about a home that would run \$400,000—which brings him into that "discretionary-income" market. A guard house and mechanized entrance gate will add an exclusive touch to the project, as will a 247-year-old house Griffith plans to restore that sits near the entrance.

The approval for the detached units came after a three year struggle. Middlebury, he notes, is rather conservative. His next step at Brentwood is to get approval for 181 townhouses on 20 acres of open space the town deeded back to him. The townhouses will be Victorian style and sell for \$100,000 and up. "We've got a good shot at it," he says of the needed multi-family zoning, "but I'll hold off presenting it to them right now. I don't want to push too hard."

Another part of being a builder

'Get too many things going at once and you wind up spinning your wheels'

today, says Griffith, is you go to more meetings. "We have preliminaries to the preliminaries," he says more seriously than not. Take a typical afternoon. Griffith and Dave Hayward, a Boise-Cascade salesman, meet with a lawyer and real estate salesman who own land in Waterbury. Griffith thinks the townhouses could be successful there. Hayward gives a slide presentation showing how well the Kingsberry line looks at other projects. The lawyer and the salesman are unimpressed. They like the houses, even call them "snazzy," but what people want in Waterbury, they say, is "the standard box—a detached raised ranch on a nice lot with a carpet allowance." The salesman continues, "You give them a 26-by-40 ranch with a colonial touch. You know, those narrow clapboards, aluminum ones, none of that shake shingles stuff." It's obvious that Griffith, whose reputation has been built on non-standard homes, doesn't like the standard box. "All right," the salesman sighs in an attempt at compromise, "throw in a few Capes if it'll make you feel bet-

ter." The meeting ends with the salesman and lawyer hinting that the townhouses "might go" on another property they hold in an area where they say the buyers are "more sophisticated."

From this meeting, Griffith and Hayward go directly to another, this one with Bill Rado, mayor of Naugatuck, and Bob King, the city's planning consultant. Hayward gives his slide show again. The mayor and the planning consultant like the townhouses. Naugatuck, which has one of the most successful industrial parks in the country, wants to attract more industry. The mayor knows he'll have to have homes to put job holders in, particularly homes they can afford. The planning consultant says, "Find a parcel, a minimum of five acres, and bring me a plan for it. Start with the townhouses and see how they sell. If they don't work, finish it out with detached homes. Density can go as high as 15 to the acre. I don't care as long as it's well planned."

"Don't worry," the mayor chimes in. "If Carl's doing it, it'll be nice. We all know his work around here."

Back at the office after the meeting, Griffith talks to Bob Smith about getting in a bid on an assisted project for the elderly. Griffith wants to try another prefab product he thinks might work. "I don't know," he says, "Get too many things going at once and you end up just spinning your wheels." The Naugatuck meeting pans out. This month he starts an 81-unit, 9-acre townhouse project there.

Griffith pays for diversity with time. He's got a lot of schemes competing for his attention. There's the "dream project," the affordable townhouses, commercial condos, housing for the elderly and, of course, the possibility of becoming the remodeling king of Connecticut. "I'm already working 14-hour days," he says. Leave a little time for sleeping, a home life, and there's not much left."

Soon, he'll have to decide whether to specialize in one area and remain the same size, or increase staff and keep his diversity but go for larger volumes. But until he gets a better feel for where the housing market is headed, chances are Griffith will stick to his strategy of being ready to move with the market wherever it goes.

'I've got to guess in 1981 where the market's going to be in 1983'



John Morrison, president of Spyglass Development Co., Eugene, Ore., doesn't mind trying to out-guess a volatile and unpredictable housing market. His earlier work as a securities analyst well prepared him for such futile forecasting.

What he doesn't like, though, is this: Even when you do figure out where the market's headed, you feel there may not be much you can do about it.

For instance. Several years ago, in the face of rising costs, Morrison went to smaller units and higher densities. Champignon, a PUD he did in 1979, featured 1,000-sq.-ft. cottages, 1,170-sq.-ft. townhouses and 1,500-sq.-ft. detached homes [HOUSING, March, '79]. The cottages and townhouses opened at \$60,000, the detached units at \$80,000. Today, his costs are still going up, now at a faster clip than his buyers' incomes. He can't do the same townhouse for even close to that \$60,000 starting price. And current interest rates only make a difficult scenario worse. "So where do I go from here?" Morrison asks. "We've already gotten small. How much smaller can you get?"

This problem, common to many builders, isn't the only one Morrison is up against. He faces others that are more peculiar perhaps to the region where he does business. Morrison operates in some of the most scenic country in the United States, the 100-mile stretch between Portland and Eugene, Oregon's two major cities. It is premium land. People in Oregon and elsewhere in the country would love to live on it and builders would like to put homes on it. The trouble lies in trying to develop it.

By the end of this year, the development of the entire state of Oregon will be controlled by a master land plan. Each municipality draws up its own plan which is assimilated into the master by Oregon's Land Control and Development Commission. Via the master plan, the LCDC determines the future growth and development of the state. As part of this development control, each city draws an urban service line around itself. Land outside this line cannot be annexed to the city, nor is it eligible for the city's utility, sewer and water services. If a builder wishes to develop land outside that service

ring, he has two choices. One, wait and see if the land is included within the perimeter of the ring when the ring is updated every five years or so. Two, develop within the zoning restrictions set by the counties whose land falls outside the service line.

Residential zoning on such land, says Morrison, usually runs in the neighborhood of one unit per 20 acres, a bit tough for a PUD to make a go of it. Simply put, the LCDC holds a tight rein on Oregon's development.

There's little a builder like Morrison can do except work within the LCDC's system as best he can. It's difficult, but not intolerable. Morrison agrees the state's development shouldn't proceed in a way that would destroy the area's appeal and, consequently, its marketability. But as to the squeeze put on him by prices outpacing buyers' incomes, Morrison is fighting back with a few different game plans. His most ambitious is a move to grab a share of the affordable-housing market via mobile homes.

Morrison has chosen mobile rather than conventional homes as his entree into the affordable market for several reasons, the most important being that it allows him to compete with builders much larger than he. L.B. Nelson, a large public builder, for instance, is coming into Morrison's backyard with an eightplex housing scheme aimed at the lower end of the market [HOUSING, June, '80]. "I can't compete head to head with the big boys when it comes to producing low-cost conventionally built housing," he says, noting that his smaller capital base is but one of several factors that puts him at a disadvantage. But he can compete by offering a different product, mobile homes, at a lower price to the same buyers looking for an affordably priced house. What's more, by dealing with a mobile home manufacturer, he can do this at a much higher volume than he could with conventionally built units. "What I'm doing," he explains, "is using the mobile home manufacturer's capital and production facilities so I can stay in the market against bigger builders."

Morrison has already talked with people at Silvercrest Industries, a mobile home maker in Woodburn, Ore., about doing a 136-unit mobile

WILLIAM BETTS

home subdivision on 26 acres of land in Lebanon, Ore. As a result of these talks, Morrison believes he can offer a 1,400-sq.-ft. mobile home for \$52,000—"that includes land, landscaping, drapes and appliances." To get away from the "trailer park" image mobile homes are still trying to buck, Morrison plans to do this subdivision just like the others he's done. Landscape it, put up decorated models of the line he's offering—1,000 to 1,400-sq.-ft. units of two and three bedrooms with touches like vaulted ceilings—and, in general, do a complete marketing job on it. Financing, which has become easier to get but can still be an obstacle has been arranged. Morrison's got a lender willing to give 25-year loans at a 90% loan-to-value ratio.

If this works out, Morrison has two other parcels he thinks mobile home subdivisions could work well on: 40 acres in Stayton and another 26 acres in Eugene. Already, Fannie Mae has approved one mobile home subdivision outside Tacoma, Wash. More such approvals should make long-term money more available. With the need for affordable housing, Morrison figures mobile homes can only do better and better in the future.

That doesn't mean he's putting all his eggs into the mobile home basket. Morrison is still doing conventional units. He'll finish out his Champignon PUD with townhouses "as soon as the market revives." Since the project and the neighborhood it's in are already established, the new townhouses will be done in the style of the original ones. Only this time, instead of opening at \$60,000, they'll start at \$84,000 and go up from there. At another planned townhouse project, 98 units on 20 acres in Eugene, he wants to hold the line on prices as much as he can by doing a more modest, stripped-down unit. He'll try to keep these 1,400-sq.-ft. units in the low 80's. They won't be as fancy as those at Champignon, but the project will get a similarly highbrow-sounding name—Chamonix. Credit for the names goes to Morrison's wife who teaches French at the University of Oregon.

Money is one area Morrison has been particularly active in investigating. When interest rates went crazy

early last year, the 35-year-old Stanford Business School graduate came up with an alternate source of money he thinks other builders might be able to tap as well: medical practices' pension funds.

"In most cities, doctors or the professional corporations they've set up have good-sized pension funds," says Morrison. "If the medical practice has been in business several years, investments in the \$100,000 to \$200,000 range are usually well within their reach." The best feature about doing a loan or getting equity from these funds is flexibility, says Morrison. Another thing he found in his dealings with the medical funds is that builders have a very high "credibility quotient" with this type of investor. To finance land

'I'm using the mobile home company's capital to compete with bigger builders'

for one townhouse project, Morrison set up a very flexible loan with one such fund. He borrows against a fixed commitment as he takes down land and pays principal on a very loose schedule. Interest is accrued over the entire six-year term of the loan, but needn't be paid until the end of the term. Such a loan might carry a higher rate than a bank loan, but the tailored terms often more than offset the rate differential. For the best deals, suggests Morrison, "Go to the specialists, the heart surgeons and brain surgeons. They usually have more money and often they're more investment-minded than general practitioners."

Recently, Morrison also did his first government-subsidized project. He'd been attracted by some federal money before, but he was always hesitant about working within government programs. But this project, a 51-unit apartment complex for the elderly, went smoothly. "It was a 'triple dipper'—a HUD section 8 rental subsidy, a 7½% mortgage through the state, and a 10-year property tax abatement from the city," he says. "Everything goes well as long as you don't deviate from the specs *at all*, not even to upgrade."

Turns out his original skepticism and hesitancy might have been well founded. Parts of the program have now been dropped. "It's kind of frustrating to learn the ropes," Morrison says, "only to have the program pulled out from under you." Morrison has also adopted the tactic of holding on to one of everything he's built. He'll rent out the first few units in a PUD and sell them later, after they've appreciated. He calls the units he holds "alligators." Keeping them can get very expensive—"those alligators'll eat you alive"—but it's one way he can cash in on the appreciation of for-sale units and add cash flow to his operation when times get tough.

He also has some commercial work in the planning stages: a 32,000-sq.-ft. shopping center in Salem and a 30-acre industrial park in Coburg. These represent his first foray into the commercial world, but he figures he knows "about 90% of what it takes to build a strip center." While waiting for interest rates to come down, he plans to pick up the other 10%.

Overall, Morrison's approach to a slow housing market and an erratic money market has been to work hard at the things he has a chance to control, hope for the best everywhere else. His payroll, for instance, he keeps lean by using subs for most work. Recently, though Jerry Reeher, an architect, has joined Morrison as a partner in Spyglass Development Co. And while he can't predict, let alone control, where the market will go in the future, he's got to keep buying land so he's ready to build when the market's right. "If you don't have land ready when the market's hot," he says, "you'll miss it." He sees his job as a builder come down to one difficult but simply stated task: "In 1981, I've got to guess where the market's going to be in 1983."

One final bit of strategy—small but important, he feels—is to control the style in which one lives. "I'll make a lot of money one year, but I know the next year I might not make any," Morrison says. "So I can't let the way I live be determined by the boom years." And the last-ditch safety net for the tenuous financial security of a builder is this: "It's always nice to have a wife who works. You know, just in case."



In the '70s, market expert Ken Agid was one of the first to base his sales strategy on market segmentation.* Now he looks at the next decade.

Some of his thoughts may strike you as insightful; others as outrageous. They introduce:

The 300-sq.-ft. home and other ideas for the '80s

By 1985, some homes will be smaller than today's garages. Others will live like '60s communes—except that the residents will be grey-haired instead of long-haired. Still others will be 24-hour environments: at-home computer terminals will have liberated workers from office buildings.

That's an outline of what Agid predicts. Here's the rest of the picture:

Sub-segments will become super segments

"In the next five years, we'll see a maturing of the specialty markets that emerged in the late '70s," says Agid.

He expects these markets—singles, paired-up buyers, young professional couples, adult couples and retirees—to grow so much that 70% of for-sale housing will be intended for them.

Meanwhile, family market segments will be on the decline. What's more, existing housing will supply most of their needs.

"I think it would be unwise for builders to compete with resales for single-family buyers," says Agid. "Instead, they should offer a product for people who can't afford a large detached home or for those who wish to move down from one into an adult-oriented community."

*As director of residential marketing for The Irvine Co., Agid defined 38 market segments, 18 of which the company designed for. He left Irvine in 1977 to become a principal in Market Profiles, a firm specializing in market research. Now Agid is senior vice president of The Mayer Group, Downey, Calif.

Small will be smart

"It's becoming smart to own a small, efficient unit in a good urban location, just as it has become smart to own a compact, fuel-efficient car," says Agid.

But, he points out, "small" isn't necessarily synonymous with "cheap."

"Our company is planning 300-sq.-ft. to 750-sq.-ft. units," says Agid, who's senior vice president of The Mayer Group Inc., Downey, Calif. "But we'll be spending up to 1½ times more per-sq.-ft. to build them than a typical single-family builder would spend."

The reason: Interiors will be detailed with care and will include built-in items, such as fold-away beds, to make the small space highly func-

tional. (For sketches of small units, not showing built-ins, see below.)

In fact, as part of the planning process, Agid has had his staff look at fine-quality yachts, in which, he notes, the living quarters are attractive as well as utilitarian.

"People aren't appalled by how small the living area in a yacht is," he says. "Rather, they're charmed by the quality of the workmanship and the intimacy of the space."

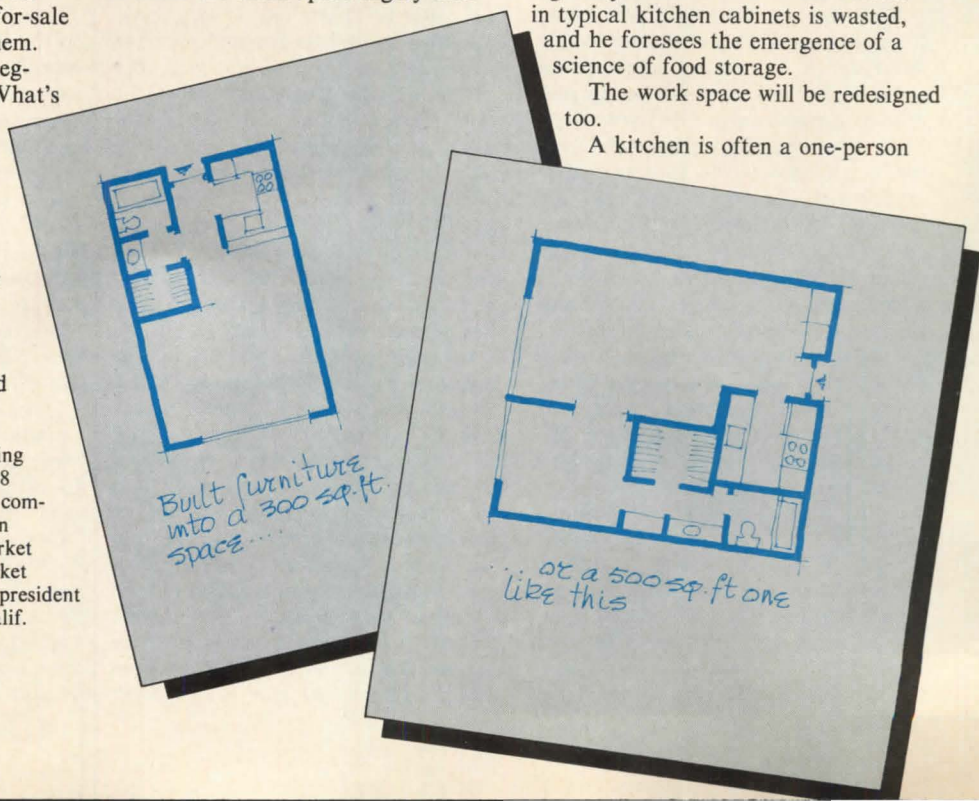
Efficiency will be uppermost

Agid's thesis—that we're entering an era when space planning will take priority over pure space—will affect every room in the house.

Take the kitchen, for instance. Agid says 60% to 70% of the volume in typical kitchen cabinets is wasted, and he foresees the emergence of a science of food storage.

The work space will be redesigned too.

A kitchen is often a one-person



space," says Agid. "So why not design it to accommodate only that one person, and plan it so that when he takes one step backwards, he's out of the kitchen."

He thinks secondary bedrooms could easily shrink from the usual 10 ft. by 10 ft. down to 6 ft. by 8 ft.—a size which could still accommodate built-in bunkbeds.

Even closets will change. Poles may be set up lazy-susan style, for example, so there's no need for walk-in space. The clothes will simply be rotated around to the door.

The boardinghouse will be back

In other words, one roof will shelter more than one household.

A home may be shared by relatives—a married couple living with in-laws, for instance. Or a homeowner may rent out bedrooms to singles.

"This will bring down the cost of ownership and make use of oversized single-family homes," says Agid.

In many cases, doubled-up households will share retrofitted existing homes. Others will be living in units expressly designed for sharing, however. Here's how Agid sees some of them:

Back-to-back, one-room apartments with a common kitchen (see sketch below).

One thought behind this scheme, according to Agid: The kitchen is the most expensive room in the house, and providing only one for two buyers minimizes the cost.

He thinks such an arrangement is practical for singles—many of whom eat lunch

and dinner away from home. And, he points out, such a plan offers more privacy than one with two bedrooms but shared living/eating space.

Duplex-style units with shared kitchens (see sketch below).

A couple could buy such a home and rent out half without compromising the privacy of their living quarters. Or two related households could purchase in tandem.

"I'd say this product could sell for a price comparable to that of a condo conversion," says Agid. "And such a duplex—with a yard and the traditional trappings of a single-family home—would be a viable alternative to that converted apartment."

Several sleeping chambers sharing common living and cooking (see sketch at right below).

Agid proposes this scheme for retired persons, especially single ones. And he sees it foreshadowed in many of today's retirement communities, where there is intensive use of common areas.

"After retirement," he says, "people are more willing to share certain elements of living space."

Computers will be coming home

Terminals will be installed at home so husband and wife can go to work without stepping outside.

By the end of the '80s, Agid thinks the commute to work will only be a memory for as much as 25% of the work force.

This will result in decreased mobility—when a person changes jobs she won't relocate; she'll just connect to a different corporation's computer.

But it will also mean that more discretionary income will be freed up for spending on housing. "There won't be commuting costs, wardrobe costs, or restaurant tabs for lunch," says Agid. "This may be one group which will be buying large homes."

The car will be kept in its place

"Cars are living better than we are," says Agid. "They live in the front, we live in the back. And they've got plenty of room—a 21 ft. by 20 ft. garage is much larger than today's compact cars require."

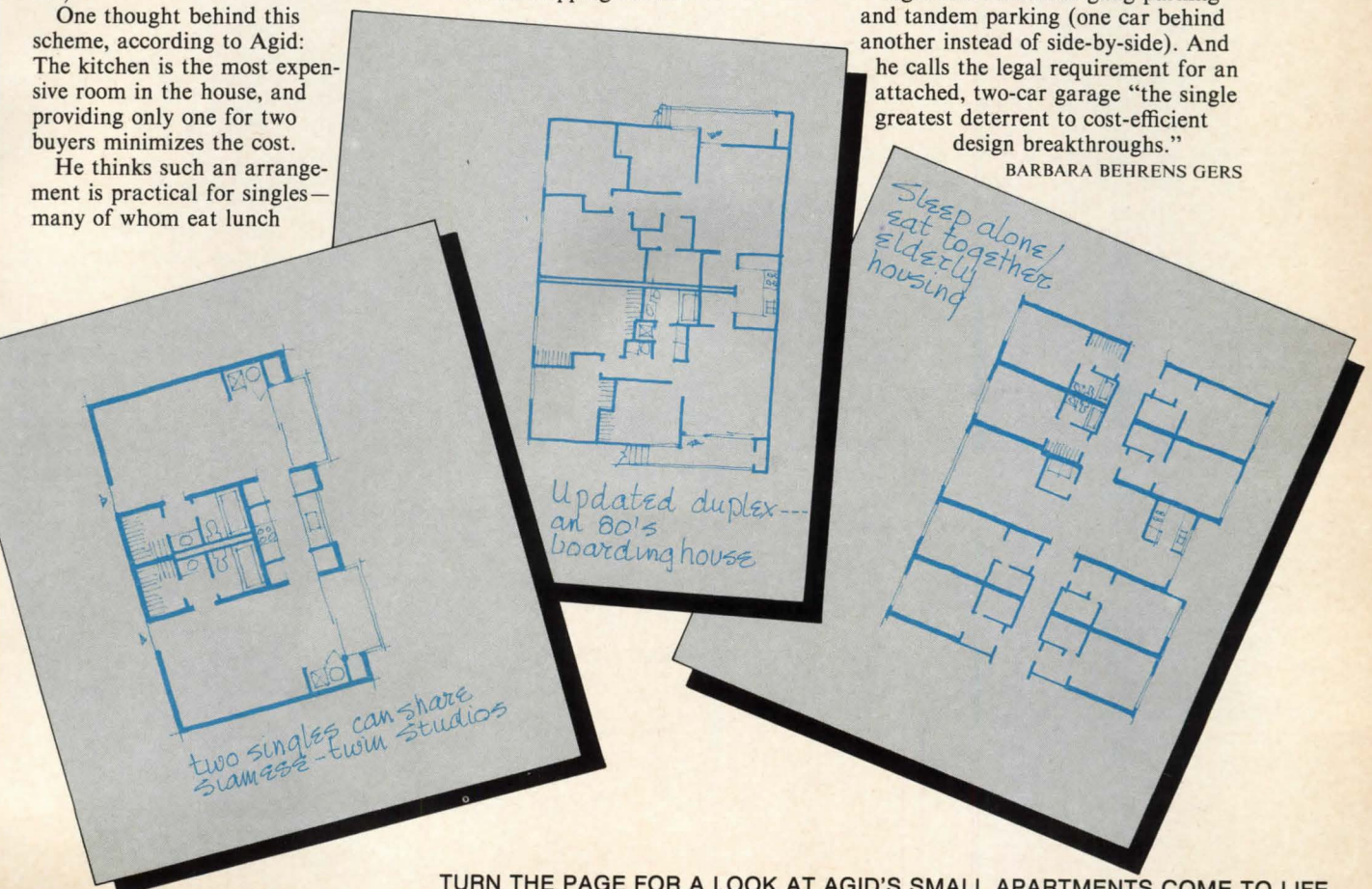
All this must change, he says.

At the very least, the two-car garage should be scaled down to 18 ft. by 16 ft.—a savings of 132 sq. ft.

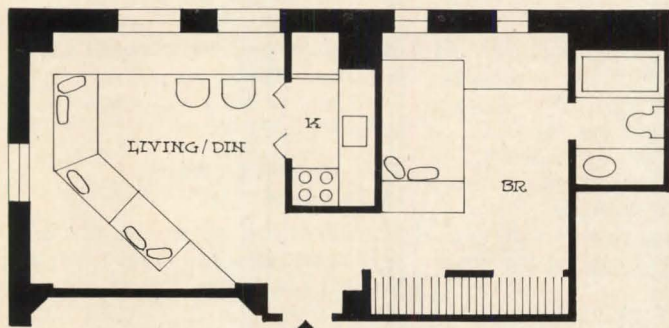
Better yet, communities should loosen up restrictions against on-street parking: "They're so much into the aesthetics of the streetscape that they forget there is a whole bunch of asphalt out there. Cars placed on it could be perfectly happy."

Agid also advocates gang parking and tandem parking (one car behind another instead of side-by-side). And he calls the legal requirement for an attached, two-car garage "the single greatest deterrent to cost-efficient design breakthroughs."

BARBARA BEHRENS GERS



Was Ken Agid just blowing smoke?



This 466-sq.-ft. apartment says 'no way'

While Agid talks about mini-units with built-in furniture as the way of the future (*see previous story*), a young Washington, D.C. rehabber is already selling them.

The rehabber is 29-year-old Beth Myers, president of Alternative Developments Inc. The 466-sq.-ft. unit shown above and at right is one of five plans—none larger than 735 sq. ft.—offered at The Bartley, a formerly disreputable hotel now enjoying a new life as a condominium.

Twenty of The Bartley's 35 units have been sold in the last two months at prices ranging from \$58,000 to \$86,000. Myers attributes the sales, in large part, to the built-in furniture used in the models (*photos right*).

"The built-ins attract attention because they're different," she says, "but they also show people how to make small spaces like these work."

Constructed of plywood and covered with carpeting, the built-ins are offered to buyers for \$6,000 to \$7,000 extra, depending on the unit. Accessories, such as a fitted comforter for the platform bed, are sweeteners thrown in without charge. The offer has been taken up by eight purchasers so far.

"The built-ins can be included in the mortgage," Myers points out, "and they let a first time buyer move in without worrying about furniture. Those are both important considerations for our primary market—young professionals with high incomes but little savings."

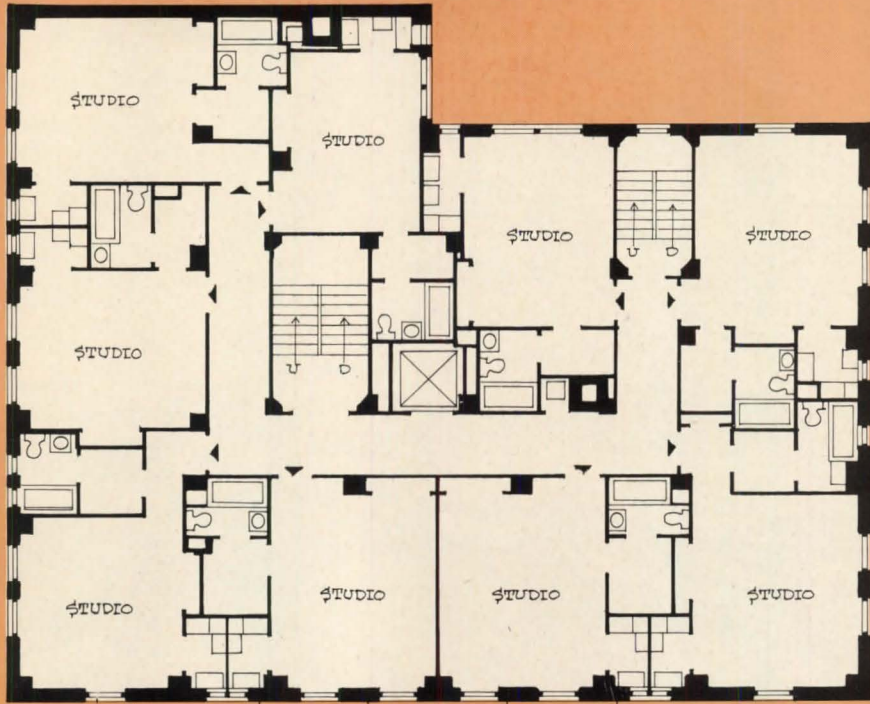
To get the rest of the story on The Bartley—down to the kitchen sink—turn the page. —B.B.G.

Readymade living room (*right*) includes an angled sitting platform with display space behind it and storage inside. The carpet-covered plywood platform is extended to provide a working/eating shelf with space for two chairs (*at far right in photo*). Buyers don't need more dining space than this: Most are hard-working singles who are seldom home before 10 p.m. on weeknights. The \$6,500 package offered to buyers of this 466-sq.-ft. unit includes built-ins and window blinds. Track lighting isn't part of the extra-cost package, however—it's standard. Price for this unit: \$58,500 to \$68,000. (There are premiums for upper-floor units.)

Built-in bedroom (*right*) features a drawer unit that doubles as a headboard and additional storage in built-in under window. Bed is standard double-bed size: bedroom has 159 sq. ft. The built-ins are by interior designer Thomas Pheasant of Washington, D.C. Pheasant works with buyers who take the furnishing package, helping them choose colors for walls, carpet and accessories.



Each of the five plans has a character of its own



BEFORE

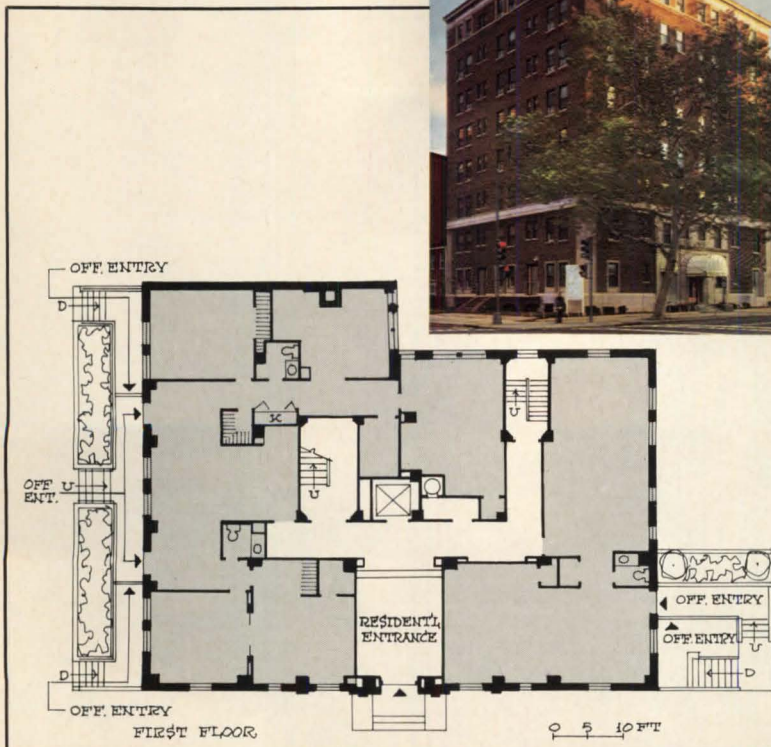
0 5 10 FT

Typical floor (plan right) is split into five units, ranging from a 466-sq.-ft. one-bedroom to a 735-sq.-ft. two-bedroom plan. Built-ins (in yellow) show buyers how to capitalize on each unit's configuration. Though building was gutted, the old hotel's circulation pattern was retained (see before plan, left). Some hallway space was converted into saleable space, however, since nine hotel units were replaced with five for-sale ones. Apartments are heated and cooled with individual water-to-air heat pumps hooked up to a central water-circulating system. Heating units aren't indicated on plans, however, because they're hung above dropped ceiling in spots such as above closets, where the nine ft. height of the 1920's-era ceiling wasn't needed. Doing this, instead of a standard floor installation, enabled architectural designer Jeffrey Gilbert of Washington, D.C., to allocate maximum square footage to living space.



For-sale offices are a profitable use of lower-level space

The first floor and basement will hold offices, but residents will hardly be aware of the commercial owners—and vice versa. Several new entries were created to keep office traffic separate, including basement-level doors which required extensive excavation (photo and plan left).



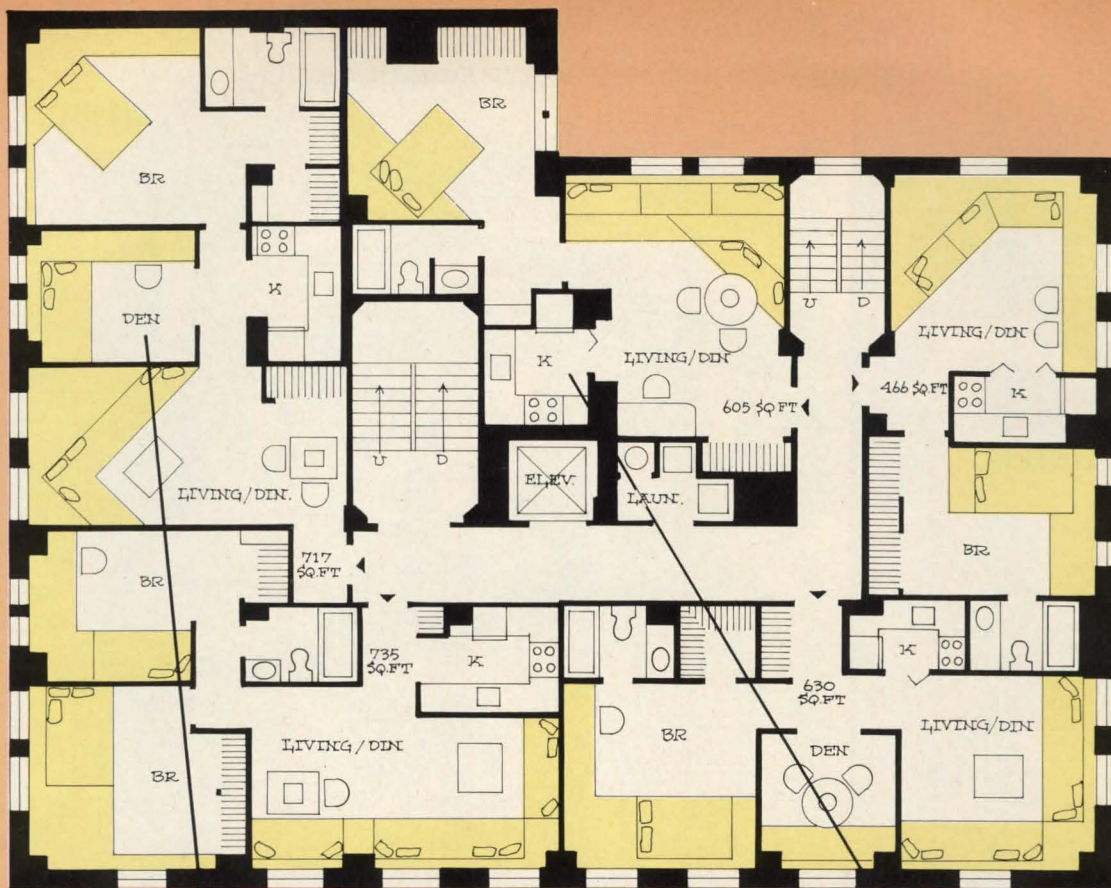
FIRST FLOOR

0 5 10 FT

WHAT IT COST*

Demolition	\$34,000
Plumbing	135,000
Heating	181,000
Drywall	145,000
Plaster (to salvage repairable walls)	77,000
Finish carpentry	130,000
Windows	49,000
Electrical work	115,000
Painting	32,000
Roofing	12,000
Interior concrete	10,000
Exterior work (entranceways, etc.)	20,000

*Job is not complete; so a total rehab cost is not available.



AFTER

0 5 10 FT



Multi-use den (above) can be guest room or home office. Some buyers choose to put the space to use as a dining room.

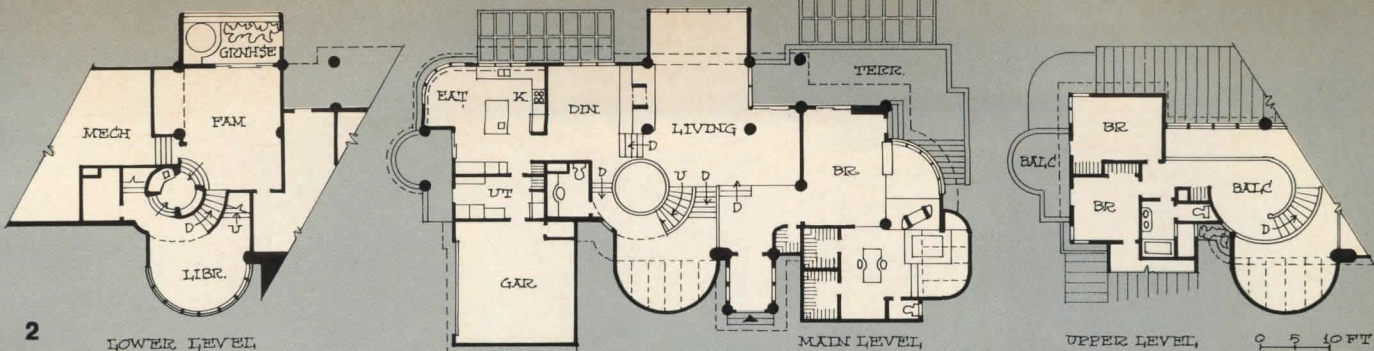


PHOTOS: ELIOT BLATT

Sub-compact kitchen (right) squeezes everything a cook needs into 58 sq. ft. One trick: an all-in-one appliance including dishwasher below a cooktop and oven above it. So there's room for a trash compactor (not visible). White floors and cabinets compensate for lack of natural light.



New show house:
**A showcase
of energy-saving
ideas**



S. ROBERT PERRON

Front elevation, with expanse of copper roof, faces north and so was tucked into hillside and glass kept to a minimum to conserve heat. House utilizes both passive and active solar systems—plus photovoltaics (partial view of collector at far left, photo 1), which provides the power for the active system's pumps. Architect: The Berkus Group of Santa Barbara, Los Angeles and Washington, D.C. Builder: Walter R. T. Smith of Wilton, Conn. Interior designer: MAC II of New York.



Rear elevation faces south and contains panels for active solar systems plus greenhouse and copper-tube collector for passive system. Notice how the solar panels were integrated into the rear elevation to become an architectural feature. Another advantage: the roof could be designed for esthetics rather than for orientation to the sun. Greenhouse expands visual space in both living room and family room, for its floor was used for thermal storage rather than a thermal storage wall that would have created a barrier.

It's the Copper Development Association's Sun/Tronic House, designed by Berkus Group Architects and built with the cooperation of 20 sponsoring companies*.

Replacement cost is estimated at about \$850,000, so this house is hardly a candidate for your average prospect. But your prospects will be interested in some of its energy-savers, which run the gamut from beefed-up insulation to space-age photovoltaics.

Engineer Robert E. Hedden estimates a \$200 annual heating bill for the 5,400-sq.-ft. house, which was built in Greenwich, Conn., an area with 5,600 degree-days. Hedden, an engineer with Mueller Associates of Baltimore, which did the mechanical engineering for the house, estimates that even without the solar features the heating bill would be a low \$900 a year, mainly because of heavy insulation and some of the other features described below.

The results will be in soon, for the house was fitted with computer-controlled monitoring devices that provide the CDA with temperature and energy consumption data while a family goes about its daily routine in the house. —JOHN H. INGERSOLL

*Sponsors for structural materials included: American Standard; California Redwood Assn.; C&D Batteries; Edison Electric Institute; General Electric Co. (kitchen appliances, lighting, heat pumps); Lead Industries Assn.; Libbey-Owens-Ford (glass, solar panels); Lord & Burnham; Owens-Corning Fiberglas; Roll-A-Way Insulating Shutters; St. Charles Mfg.; Solarex Corp.; The Stanley Works; Vermont Structural Slate Co.

Other sponsors included: Apple Computer; W. W. Gaertner Research; Hercules/Sherill; Karastan Rug Mills; W. & J. Sloane.

Energy savings begin with the design and siting of the house

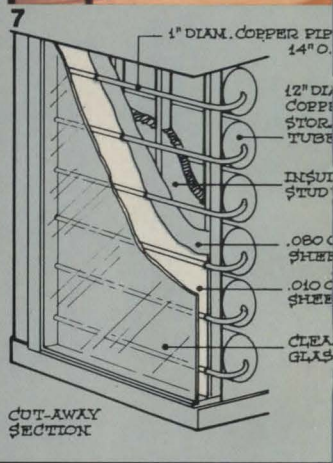
The Copper Development Association (CDA) was fortunate in finding a sloping site overlooking a small lake that was ideal for the house's passive solar features.

- It could be designed so that all major rooms would have south-facing windows (see plans above), allowing them to be warmed by the direct rays of the winter sun. There are 240 sq. ft. of window area and 270 sq. ft. of greenhouse on the south side of the house (photo 4).

- The hillside location made it possible to bury part of the north elevation to protect it from winter winds (photo 3). In addition, glazing was limited to only 30 sq. ft. of window area and 120 sq. ft. of skylight.

- Thick fiber glass insulation plus isocyanurate foamboard raises ceiling values to R-38. Fiber glass insulation and fiber glass sheathing puts walls at R-26. All windows are double-glazed.

TO NEXT PAGE



Active solar systems supply nearly half of heating needs

The active system was designed to provide about 45% of the heat required for space heating, domestic hot water and water for a hot tub.

During the summer, excess heat collected by the panels will be used to warm the water in a to-be-built swimming pool.

•Two 320-sq.-ft. solar collectors are positioned on a 30° slant between the ground and south face of the house (photos 1 and 4). Sixteen copper-backed panels in each array support copper tubing, which carries a glycol/water solution in a closed loop. This goes through a 1,000-gal. water tank located in the basement behind the panels, which serves for thermal storage (photo 8). Heated water is also circulated through a closed-loop exchanger on the return side of the heat pump ducting.

For back-up, two air-to-air heat pumps, one with a four-ton and the other with a two-ton capacity, serve a

two-zone system, the first for the living quarters and the second for the sleeping quarters. Compressors are sited underneath the "lean-to" solar collector panels (photo 9). The idea was (1) to protect the pumps from winter icing, and (2) to keep them out of sight.

•A 150-sq.-ft. array of photovoltaic cells is located in a panel about 20 yards west of the house (photo 1). These cells capture solar energy and convert it to DC current, which is sent directly to an inverter for AC operation of the solar system's electric pumps.

Excess power is stored in six lead-acid battery modules (photo 10), which

Want to visit the house?

The Copper Development Assn. is organizing tours of the Sun/Tronic house for industry professionals. If you'd like to join such a tour, send your request to Paul Anderson, Vice President-Building Construction Markets, Copper Development Association, 1011 High Ridge Road, Stamford, Conn. 06905.

will provide stand-by power. At full charge, the battery complex puts out 150 amp-hours over a six-hour period.

Passive solar features add to the house's appeal

Not only do they provide energy savings, but they are also attractive design elements that contribute a great deal to the house's livability.

•A two-story double-glazed greenhouse on the south side of the house encloses a solarium that is 17 ft. wide and 8 ft. deep. It opens to the family room at the lower level and to the living room above (photos 5 and 12).

Thermal storage is provided by a floor of hand-split Vermont slate on top of 8 in. of concrete which has been poured over a blanket of R-12 foam board insulation.

A sunken hot tub is located in the solarium. Roll-up insulated plastic shades serve for night insulation and sun control.

•Seven water-filled copper tubes provide thermal storage on the family

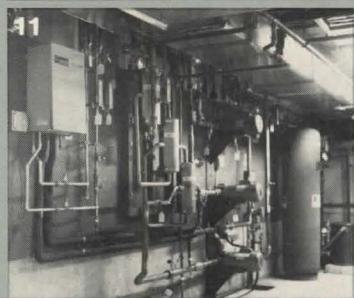
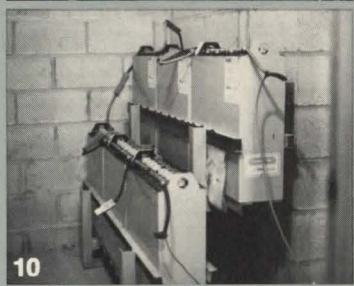
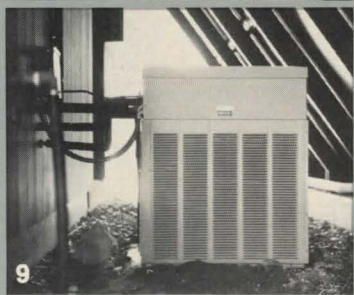
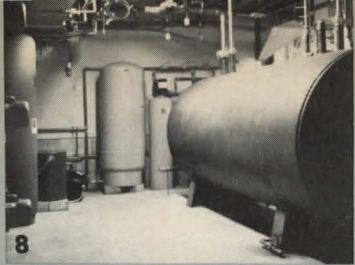
Heat-pipe walls in family room 5 and master bedroom 6 offer different ways to use decorative copper tubes for solar heating (see explanation in text below).

1,000-gal. water tank is connected to solar heat exchangers and distributes water to hot tub and domestic water system 8. Large tank against rear wall holds well water; smaller tank is water softener.

Heat pump compressors 9 were set beneath solar panels to prevent icing.

Battery bank containing six modules with nine cells per module 10 stores excess power generated by photovoltaic array.

Equipment along basement wall 11 includes (l. to r.) wasteheat collector, heat exchangers, pumps, expansion tank for collector loop, and hot-tub equipment.



PHOTOS: HOUSING STAFF



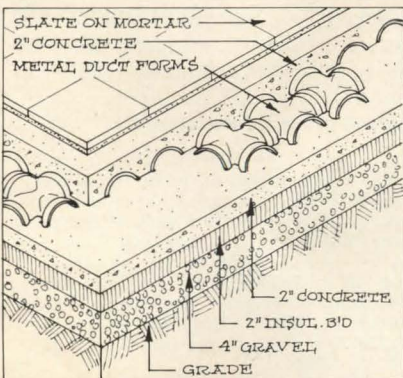
JOHN BECHTOLD

Soaring energy column adds a dramatic note to living room and is practical as well. Column captures warm air at ceiling and recirculates it to other rooms through "energy floors" (diagram below). Note how living room opens to top of greenhouse.

room level (photo 5). The tubes, which add to the decor with their statuary bronze finish, are 12-in. in diameter and 4 ft. long. They are mounted ladder-like in a wooden frame and separated from the family room by a single sheet of glass.

Heat collected from direct rays of winter sun is stored in the tubes and radiated back into the space at night.

In summer, roll-down insulating shutters shield both sides of the tube frame.



●A second copper-pipe storage wall is located on the south side of the master bedroom (photo 6). This one, however, consists of a copper absorber plate that serves as the collector, seven one-in. diameter copper heat pipes filled with liquid Freon, and seven 12-in. diameter copper pipes filled with water that act as storage tanks (diagram 7).

Sun-heated Freon trapped inside the copper tubing turns to vapor, releases its heat to water inside the large tubes, then condenses and flows back down the pipes to the absorber plate, where it repeats the cycle.

In summer, the water storage tubes can be drained or the collector can be covered with a roll-down insulating shutter.

Some systems make it possible to recycle heat

Not only does the Sun/Tronic house gain much of the energy it uses from the sun, it also recycles heat so that there is less need to depend on the

back-up heating system.

●A 25-ft.-tall hollow "energy column" reclaims the hot air that rises to the ridge (photo 12). Warm air is pulled down the column by means of a small fan. It is then redistributed through the ducts in the family room and library floors.

In summer, an automatic fan at the ridge exhausts the warm air to the outside.

●"Air-floors" in the family room and library are composed of (from bottom to top) 4-in. of gravel over grade, 2-in. of insulation board, 2-in. of concrete, metal duct forms, another 2-in. of concrete and, finally, mortar and slate (diagram below left).

The metal ducting distributes the heat reclaimed by the energy column. But the slate and the masonry beneath it also store heat beamed directly from the sun. The combination of duct heat and stored heat "warms the slate enough so you can walk around with bare feet," says a Mueller spokesman.

●A domestic hot water bank passes along "waste heat" to the water tank

TO NEXT PAGE



13



14

PHOTOS: JOHN BE

Control center for the home is computer system installed in library 14. Computer is programmed to display or print out on-going data about energy performance. It also activates and controls energy, mechanical and security systems.

Master bath has double-sided fireplace that uses outdoor air for combustion 13. Note the insulating skylight drapes, which are controlled completely by computer.

(photo 11). When the coefficient of performance for the heat pumps is high enough to satisfy demand, excess hot refrigerant gases are directed through the bank. The bank acts as a heat exchanger for water passing through it to the domestic hot water tank.

At the heart of it all, a computer controls and monitors all systems

"The Sun/Tronic House is one of the most computerized homes ever built," says Paul A. Anderson, CDA's vice president for building construction markets. "The extensive computer system will retrieve data on the home's energy performance, continuously monitor this performance and control all aspects of the home's active solar components and all its other mechanical systems" (photo 14).

•Computer-activated insulating shades and shutters close over skylights and windows at night in winter and, if programmed, during dark days. Shades and shutters also move to block

the summer sun (photo 13).

•The computer operates by-pass dampers in the ducting that allow heat or cool air to be directed where it is needed. For example, during a summer party in the living room the heat load created by the extra people will elicit cool air from the bedroom wing heat pump to supplement the cool air produced by the living room heat pump. Thus, additional cooling can be provided when and where needed without overcooling space where there is no need to do so.

House also offers some borrowable design and planning ideas

Perhaps the most important of these can be seen in the photos: The energy systems were treated as design elements. Examples: the handling of the solar panels and the greenhouse, the design impact of the two double-sided fireplaces which were placed to dissipate heat inside the house, and the openness of glass doors used as an air lock inside the front entry.

"You shouldn't have to end up with architecture subordinated to energy systems," says architect Barry Berkus.

Some non-energy planning ideas:

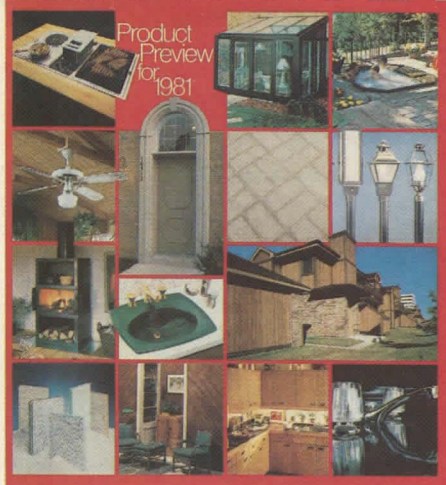
•The stairway landings were treated as living space. One landing became a bar, another was expanded into a library (photo 14), the third is a balcony overlooking the living area.

•The master suite was treated as an apartment within the home, where adults could escape from children, and the bath became a spa.

•An alcove was provided in the living room for an intimate area for sitting or a media or music center.

Want more information?

The Sun/Tronic house is innovative not only in design, but in the materials and products that went into it. The CDA has prepared an application sheet discussing the passive designs. And the Summer 1980 issue of *Copper Topics* gives details on the products and explains why each was chosen. If you'd like copies, write to: CDA House, HOUSING Magazine, 1221 Ave. of the Americas, New York, N.Y. 10020.



If you're shopping the new crop of building products, here's where to start

The following pages contain information on almost 200 products in 19 separate categories, from Bathrooms to Woodstoves. Some of these products are brand-new; many are refinements of existing items. For—times being what they are—many manufacturers, like many homebuilders and homebuyers, have left experimental ventures on the back burner.

That's not to say that new product development has come to a standstill. Far from it. Many of this year's products—particularly in the Solar, Interior Environment, Doors & Windows and Pipes & Plumbing categories—are improvements on existing technology, designed to create energy systems that will make your houses tighter and cut fuel and utility bills.

There have been many new entries in Woodstoves and Fireplaces. They're more efficient and are available in a greater variety than before.

Manufacturers are also responding to the problems of making today's smaller spaces livable. The Kitchens and Interiors categories, in particular, show such space-saving items as hide-away storage spaces, built-in microwaves and a fold-out bed.

But manufacturers aren't just focusing on buyers' problems—they're also focusing on yours. There's a big emphasis on such labor-saving products as insulated siding, panelized shingles, one-piece staircases and other preassembled items that go up fast and save on labor costs.

Another big area this year—also in response to builder interest—is remodeling. We're showing cabinetry designed to fit into the old "standard-size" measurements. There's a line of air conditioners that will fit into oddly shaped windows. Also offered: roofing systems and interior paneling designed specifically for installation over existing surfaces.

On the following pages, you'll find descriptions of these products and also booth numbers for those which will be exhibited at the NAHB convention in Las Vegas. And for more advice and information on products for 1981, take a look at the literature section on p. 134.

—JENNIFER A. WAGNER

Bathrooms.....	86, 110	Office Equipment.....	120
Coatings & Adhesives.....	114, 116	Outdoors.....	118
Doors & Windows.....	90	Pipes & Plumbing.....	127, 128
Exteriors.....	98	Recreation.....	112
Fireplaces.....	96	Security.....	122
Flooring.....	88	Solar.....	102
Interior Environment.....	104	Structural.....	98
Interiors.....	94	Tools & Equipment.....	130
Kitchens.....	84	Woodstoves.....	106
Lighting.....	92		

1. "Farmstead" ash cabinetry is constructed of inch-thick doors that have a handrubbed wax finish. Drawers are dove-tailed at corners and hardwood frames have mortise-and-tenon joints. Single-door base cabinets have sliding shelves. Haas. *Circle 218 on reader service card*

2. Grille/griddle range can be installed as a slide-in with back-splash as shown or into a peninsula or island. Grill and griddle modules are interchangeable. General Electric. NAHB booth 1400. *Circle 219 on reader service card*

3. "Rev-A-Shelf" storage system includes independently rotating shelves that come in two- or five-shelf sections as shown. Shelves, available in cocoa brown or white, automatically swing back to original position from 30° on either side. Ajax. *Circle 220 on reader service card*

4. European-style cabinetry features vertical-groove doors. "Tambour" line is constructed of Excelite™ plastic laminate with oak veneer door and drawer fronts. Excel Wood. NAHB booth 1282. *Circle 221 on reader service card*

5. Converta-Cook can be installed with an updraft or with a built-in downdraft venting system, as shown. Unit accommodates seven optional cooking modules, including the grill and standard cooking elements shown. Tappan. NAHB booth 408. *Circle 222 on reader service card*

6. Stainless steel sink includes two large bowls and a central disposal bowl. "Lancelot" unit shown includes the manufacturer's faucet, soap dispenser and two strainers. Moen. NAHB booth 1344. *Circle 223 on reader service card*

7. Chrome-plated single-action faucet has a washerless "temperature recall" cartridge that provides water at constant temperatures. A flow-control aerator limits flow to 2.75 gal/min. Streamway. *Circle 224 on reader service card*

8. Built-in appliance group includes the Counter-Saver™ microwave (left) and a double oven. Microwave features ten power levels and solid state touch controls. Double oven offers a Rota-Grill™ rotisserie in upper chamber. Hotpoint. NAHB booth 1454. *Circle 225 on reader service card*

9. Contemporary-style cabinetry includes custom-like units for storing glassware, bottles and cooking utensils (shown). Cabinetry is constructed with four hardwoods: oak, maple, cherry and walnut. Hardware is brass. Rich-Maid. NAHB booth 2731. *Circle 226 on reader service card*

10. Built-in single oven features both convection and conventional radiant heating. Unit includes the mounting trim. A double model oven is also available. Jenn-Air. NAHB booth 1682. *Circle 227 on reader service card*

11. Contemporary-style cabinetry hardware includes door and drawer pulls with oak or walnut inserts. The line shown is also available in brass, polished chrome and nickel. Home Hardware. *Circle 228 on reader service card*

12. "Bedford Oak" cabinetry has solid oak, raised-panel doors with brass hardware. Cabinetry, with hand-rubbed light brown finish, has a special topcoat for easy cleaning. A full line of storage accessories is offered. IXL. NAHB booth 420. *Circle 229 on reader service card*





5



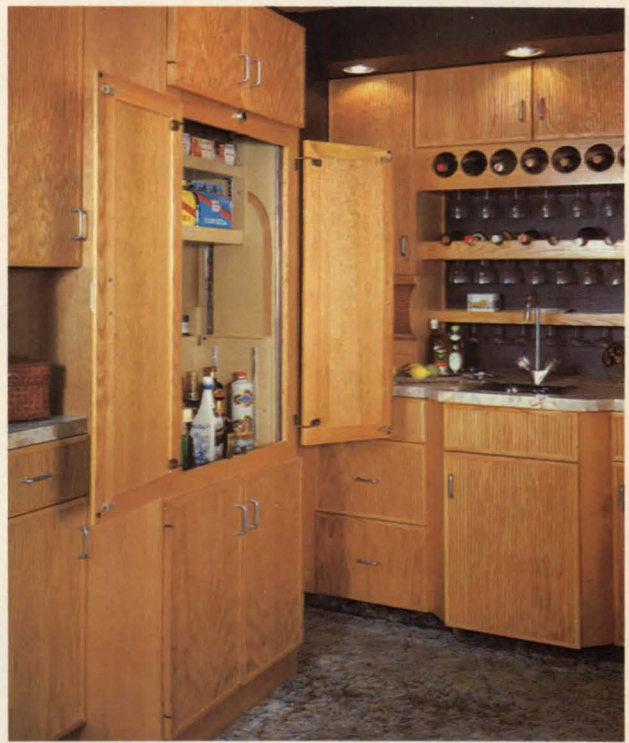
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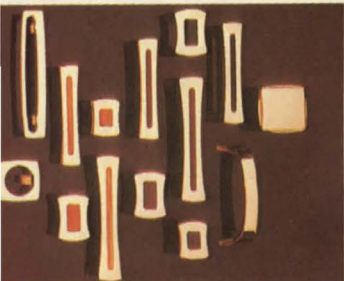
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11



12

1. "Oakbrook" vanity includes a hamper suitable for installation in all styles of the manufacturer's cabinetry line. Door can be hinged right or left. Diamond. *Circle 205 on reader service card*

2. "San Diego" water closet features water-saving 3½-gal. flush action. Low-silhouette model fits below standard-height shelf. Available in five colors. Norris. NAHB booths 430 and 530. *Circle 206 on reader service card*

3. Bath collection for the handicapped includes: fiber glass shower stall with 36"-wide ramp and fold-down seat; 18"-high toilet with assist handles; and shallow basin sink positioned for wheelchair access. Available in white. Universal-Rundle. *Circle 207 on reader service card*

4. "Aurora-Almond" single-control faucet is part of a line that includes shower controls and coordinated kitchen unit. Faucet is made of durable plastic and acrylic, with one moving part. Bradley. NAHB booth 1320. *Circle 208 on reader service card*

5. Hot-water dispenser is thermostatically controlled and provides 150° to 190° water instantly from 2.6-quart tank. Unit saves water and energy by supplementing distant water heaters. KitchenAid. *Circle 213 on reader service card*

6. "Plantation" vanity, made of light-stained poplar, has acrylic top and burnished brass hardware. Five styles are available. NuTone. NAHB booth 1424. *Circle 212 on reader service card*

7. Bath collection is available in seven colors, including frost green (shown). Featured: "Naples" enameled cast-iron tub, "Emblem" elongated water closet, "Kathy" self-rimming lavatory and "Regata" water-saver faucet. Eljer. NAHB booth 600. *Circle 211 on reader service card*

8. "Castelle" self-rimming, cast-iron lavatory is offered in a choice of colors, including the green shown. Unit, measuring 21" × 19" comes with 4" or 8" faucet drillings. Kohler. NAHB booth 1600. *Circle 216 on reader service card*

9. "Ariel" faucet line introduces washerless valves for smoother operation. Lavatory faucets are centerset or widespread (shown). Other models are available for kitchen, bar and laundry. Elkay. NAHB booth 1119. *Circle 209 on reader service card*

10. "Windsor" faucet line has acrylic handles that simulate cut crystal. Metal finishes: polished chrome (shown), antique chrome and antique bronze, all with LusterGuard™. Seven styles available. Price Pfister. *Circle 214 on reader service card*

11. "Plantation Oak," a bath cabinetry collection, features a vanity, "over-the-john" storage cabinet and recessed medicine cabinet—all with solid red-oak doors and drawer fronts. Finish is light stain; hardware is almond and brass. Available assembled or k/d. Ampco. NAHB booth 2037. *Circle 210 on reader service card*

12. "Mura5" five-piece tub kit (shown installed) comes in white, blue, gold or almond, with a choice of three murals. Unit, with eight integral shelves, is made of textured plastic. Plaskolite. *Circle 215 on reader service card*

13. Coordinated cabinetry and accessories have ¾"-thick oak doors, drawer fronts and frames. Vanity is available in a variety of sizes, including the double-door, three-drawer model (shown). Artesian. *Circle 217 on reader service card*



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1. "Change of Pace" Enkaloft® nylon pile carpet simulates plank-and-peg flooring. Available in brown, blue and green. Irregularly cut tufted loops provide a textured surface. Mohawk. Circle 242 on reader service card

2. "Howe Brick" sheet vinyl flooring, with glossy finish, has weathered brick look. Colors include white or Indian earth. Flooring is available in 6 ft. and 12 ft. widths. GAF. NAHB booth 1554. Circle 243 on reader service card

3. Oak herringbone flooring, composed of 4' x 20' pieces, is 3/4-in. thick and has tongue-and-groove assembly. The line includes custom and stock designs, and comes prefinished or unfinished. Kentucky Wood Floors. NAHB booth 2211. Circle 244 on reader service card

4. "Tuscany" glazed ceramic tiles have raised, textured surface. Square tiles are offered in sizes ranging from 1 1/8" to 6". Nine colors with complementary grouts are available. Easy-to-clean tiling can also be used on walls and countertops. American Olean. NAHB booths 820 and 830. Circle 245 on reader service card

5. Solid-color deep-pile carpet, the P/1643 Colony®, is fashioned of 100% Ultron® nylon and carries a five-year warranty. The manufacturer also offers coordinating upholstery fabric. Miliken. Circle 246 on reader service card

6. "Pin Dot" carpet of woven DuPont Antron® III nylon is intended for use in heavy-wear areas. Three standard colors are available, plus custom color combinations. Bigelow. Circle 247 on reader service card

7. "Pacific Plaza" deep-pile carpet of Antron® III nylon has a subtle pattern available in 16 shaded tones. Textured carpet comes 12' wide with Scotchguard® treatment. Walter Carpets. Circle 248 on reader service card

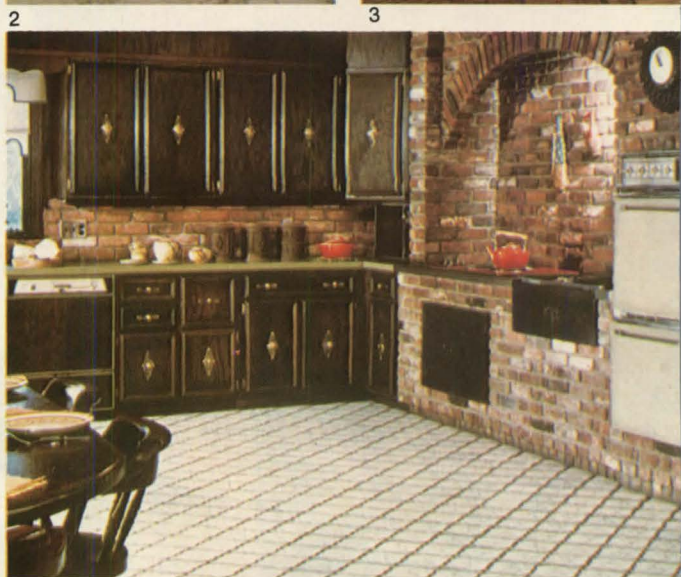
8. "Verona" sheet vinyl flooring is offered in four color combinations: blue and beige, (shown) white with grey and beige, yellow with almond and brown, and tan with charcoal. Available in 6-, 9- and 12-ft. widths. Flooring, with a wear layer, is from the "Vinyl Ease" collection. Mannington. NAHB booth 936. Circle 249 on reader service card

9. Sheet vinyl flooring with a slate design and textured grout lines is offered in six-color combinations. The flooring, with a no-wax finish, is easily maintained with a damp mop. Rolls are available in 6-ft. and 12-ft. widths. Congoleum. NAHB booth 630. Circle 250 on reader service card

10. "Carousel" solid oak flooring comes in 1 3/16-in. thick and 18-in. squares and is one of several patterns in the manufacturer's hardwood line. Unfinished squares feature a "distressed" surface. Chateau Floors. Circle 251 on reader service card

11. Fringed and rolled runners include "antique royal heriz" (stairs and floor) and "Tabriz royal hunting scene" (hanging). Both are 27-in. wide, with varying lengths, in shades of red. Couristan. Circle 252 on reader service card

12. "Cherbourg" sheet flooring is constructed of built-up layers of colored vinyl. Material comes in 6-ft. wide rolls and is easily cleaned with damp mop. Multi-colored floor is beige, gold and burnt orange. Armstrong World. NAHB booth 1654. Circle 253 on reader service card





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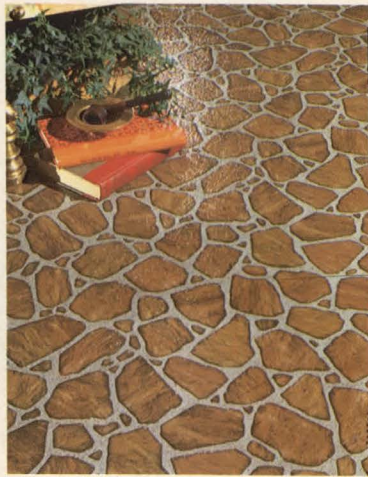
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1. Easy-to-install patio storm doors have interlocking panels and heavy weatherstripping that help block air infiltration. Storm-Dorwal™ 360 is available in two- or three-panel units. Sill track is removable for easy cleaning. Acorn. NAHB booth 2505. *Circle 278 on reader service card*

2. Molded Millwork® includes moulding for entrance doors (as shown), Victorian-style brackets, and roofs for bay and box windows. Moulding is constructed of high-density polymer that will not crack, rot or split and resists insects. Fypon. *Circle 279 on reader service card*

3. Double-hung windows feature one-piece vinyl frames. Airtight profile chambers and triple weatherstripping contribute to window's insulation qualities. Windows can be custom sized to fit any opening such as the bay shown. Dynamit Nobel. NAHB booth 2819. *Circle 280 on reader service card*

4. Laminated architectural glass is suitable for both residential and commercial use, as shown. Shatter-resistant glass reduces glare and noise transmission and comes in several colors, including bronze, shades of brown, white, blue, green and gray. Monsanto. *Circle 281 on reader service card*

5. Prehung wood entry door is offered in oiled teak or unfinished pine. Door comes 6' 9½'' high and either 3' ½'' or 4' 1¼'' wide. Other features include weatherstripping, rust-resistant hinges and an oak sill which is fit with an aluminum strip. Sweddoors. *Circle 282 on reader service card*

6. Wood patio doors feature a "Safe-T" lock system, which secures doors at top and bottom. A one-piece sill of Lexan® resin reduces heat loss and eliminates frost. The doors also have double weatherstripping. Marvin Windows. NAHB booth 1306. *Circle 283 on reader service card*

7. Hinged patio doors are available with double or triple insulating glass. "Clar-Vu" is offered in a choice of six exterior frame finishes; interior frames come natural or with a walnut stain. Diamond or rectangular grilles in wood or metal are optional; metal grilles come in white or adobe. Weather Shield. NAHB booth 2024. *Circle 284 on reader service card*

8. Sheltergard™ aluminum storm door comes in three designs, scalloped (shown), colonial and diamond. Foam insulation and a thermal-break in the 1¼'' thick frame helps reduce heat transfer. Storm door is also offered in french door style. Alcan. *Circle 285 on reader service card*

9. Greenhouse window includes operable side vents that are screened and weatherstripped. The preassembled unit is offered in 16 sizes, comes with extra-wide flanges for easy mounting. The window frame is constructed of rigid vinyl, and the entire unit measures 16'' deep. Thermomodular. NAHB booth 2042. *Circle 286 on reader service card*

10. Solid wood bi-fold doors are available in a variety of styles, including louvered or raised panels. Units are offered in a choice of thicknesses and widths. Doors can also be used as room dividers. Jessup. *Circle 287 on reader service card*

11. Folding closet doors are offered with a textured steel finish. The "Classic" doors are available in three colors including windsor blue, navajo white and café brown. Slimfold. *Circle 288 on reader service card*



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1. Cast-aluminum garden and patio lanterns come with a verde finish and frosted glass. Lanterns accept up to 60w bulbs. Shown are two of 16 available styles that come with a variety of finishes. Portable units are also available. Hanover Lantern. *Circle 254 on reader service card*

2. Six-light chandelier is part of the "Vintage Nostalgia" collection. Chandelier body and arms are made of Flemish brass, and bell-shape shades are etched glass. Unit is 26" in diameter and 19" high. A smaller fixture is also available. Progress. *Circle 255 on reader service card*

3. Five-light chandelier, made of solid brass, accepts candelabra up to 60w. Metal finishes offered include antique and polished brass and pewter. Fixtures with up to ten lights are offered. Wasley. *Circle 256 on reader service card*

4. Handcrafted hanging lamps, for indoor use, are available in three sizes. Metal caps are made with copper, brass or painted and stenciled steel. A wood-frame model comes prefinished or natural. Hanging chains come with a black finish. Coppertops. *Circle 257 on reader service card*

5. Multi-style lantern line, constructed of aluminium or solid brass, is available in a choice of finishes. U. L.-approved lanterns are offered with "Dusk-to-Dawn" photocontrol. Matching fixtures are available. Hadco. *Circle 258 on reader service card*

6. Fluorescent fixtures are available in 18", 26", 38" and 50" lengths, as shown. The frames are made of solid oak; lenses are opal acrylic. Victor Mfg. Co. *Circle 259 on reader service card*



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7. Redwood paneling strips, shown installed, have a rough-sawn texture on one side and a smooth surface on the other, either of which can be exposed. Strips are nominally 3/8" thick, 8' long, 5' wide. Pacific Lumber Co. *Circle 260 on reader service card*

8. Decorative ceiling moulding is part of a line of polymer-constructed units. Moulding has a large-scale pattern that is in keeping with the dimensions of a high-ceilinged room. Focal Point. NAHB booth 1165. *Circle 261 on reader service card*

9. Linen wallcoverings include "Chairman of the Board," a warp-lay wallcovering in taupe, black, blue-grey and white (background); "Mixed Company," in white, taupe and salmon; and "Crofter Craft II," a woven paper-backed covering in cocoa and taupe. Belgian Linen Assn. *Circle 262 on reader service card*

10. "Terra Craft" ceramic tile is available in three sizes and five colors. Two textures are offered: wave (left) and dunes. Tiles are available in 4" and 8" squares, and 4" x 8". Colors include almond, charcoal, cordovan brown and walnut. Franciscan Ceramic Tile. NAHB booth 809. *Circle 263 on reader service card*

11. Coordinated wallcoverings "Monet Floral" and "Treillage" are from the "Monogram" collection. Prepasted solid vinyl wallcoverings are scrubbable, peelable, and come in rolls 28" wide. Carefree. *Circle 264 on reader service card*

12. Kiln-fired Brickettes® and Brickette® panels come in a choice of eleven colors, including colonial, heritage, buckskin and regatta red. The individual bricks measure 1/2" thick. Corner units are also available. Panel Brick. NAHB booth 1898. *Circle 265 on reader service card*



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1. Vertical shade is constructed of vanes made of vinyl-coated polyester. Shade can be custom-ordered to any size, and comes in a wide range of textures and colors. Superior Shade. *Circle 266 on reader service card*



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2. Complementary wallcoverings, "South Seas" and "Straw Weave," are from the "As You Like It" collection. Vinyl-coated papers are pretrimmed and strippable. Four color ways are available. Albert Van Luit. *Circle 267 on reader service card*



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3. MillPlank™ wood veneer paneling comes in 4'×8' sheets and is available with five colors: coffee oak, ginger birch, peppercorn birch, russet cedar and blue pine. Georgia-Pacific. *Circle 268 on reader service card*

4. Benchmark™ simulated brick has a weathered look. Bricks, made of gypsum reinforced with fiber glass, come in individual units, including custom and corner pieces, as shown. Easy-to-clean bricks are sealed in the factory. K-Lux. *Circle 269 on reader service card*

5. Fold-up wall bed unit accommodates double, queen and extra-long bedding sizes. Factory-assembled unit is prefinished to complement a variety of furnishing styles. Built-in, two drawer nightstand is available. SICO. NAHB booth 1852. *Circle 270 on reader service card*

6. Prefinished stone aggregate paneling comes in 4'-wide sheets in 8', 10' or 12' lengths. Shown is a slate green, natural stone aggregate on 3/8"-thick plywood. Other colors are available including white and natural. Sanspray. NAHB booth 2004. *Circle 271 on reader service card*

7. Slimbrick®, made of kiln-fired brick, is only 1/2" thick. Facing veneer comes in five colors—colonial, white, chocolate, toast and adobe—and two shapes, flat and corner. Interpace. NAHB booth 2608. *Circle 272 on reader service card*



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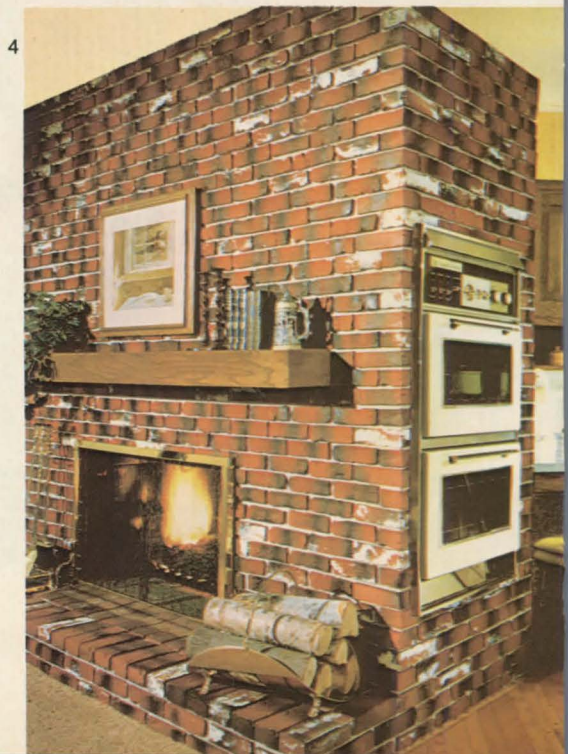
8. Vinyl wallcovering, "Carousel Horses," is from the "Once Upon A Time" collection. Wallcovering is prepaste, pretrimmed and washable. Three colorways are available: blue, dark brown and beige. A cotton/polyester companion fabric is available. United Wallcoverings. *Circle 273 on reader service card*

9. Floral-design wallcovering has a 46" repeat. "Interlude" comes 48" wide and can be custom ordered in a variety of fabrics and colorways. House of Verde. *Circle 274 on reader service card*

10. Weathered-look wallpaneling is made of aspen hardwood. Available in 1/4" or 7/16" thicknesses, the prefinished paneling comes in 4'×8' sheets. Panels have a flame spread of Class C 200 or under, according to HPMA tests. Colors available include driftwood silver, grey mist and buckskin brown. IronWood Products. *Circle 275 on reader service card*

11. Hardboard paneling is embossed to resemble aged oak planking. "Tartan Oak" paneling (shown), from the "Charter" collection, comes in 4'×8' sheets. Abitibi. NAHB booth 1168. *Circle 276 on reader service card*

12. Complementary wallcoverings, from the "Tailor Made" collection, are made of strippable vinyl. On the walls are shown "Tailor Made" plaid and "Hearthstone" woven stripe patterns; on the ceiling is "Dryad" tweed. Columbus Coated Fabrics. *Circle 277 on reader service card*



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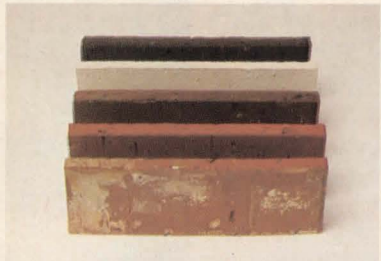
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1. Heat-circulating fireplace includes triple-wall firebox, dual heat exchanger and integral air grilles. Unit draws outside air through one duct to provide even air flow across fire base. Optional glass enclosure kit is offered. Majestic. NAHB booth 1630. *Circle 230 on reader service card*

2. Zero-clearance fireplace has a stainless steel firebox and tempered glass doors with matte, brass or hammered steel frames. Optional electric fan increases circulation of warm air from air grille. Fresh Air Fireplaces. NAHB booth 1009. *Circle 231 on reader service card*

3. Steel fireplace insert slides into most masonry fireplaces which provide at least 4" of clearance for air circulation. The firebox is constructed of 1/4" plate steel with continuous welds on all seams. Doors are 3/8" reinforced steel. The "Aspen" can heat up to 1500 sq. ft. Sweet Homes Works. *Circle 232 on reader service card*

4. Coal- and wood-burning fireplace insert, constructed of 1/4" plate steel, has removable cast-iron doors. Options include two-speed blower, locking firescreen and cast-iron grate. King. *Circle 233 on reader service card*

5. Fireplace insert includes a 215 cfm blower with variable speed control, glass doors and removable ashpan. A variety of porcelain-enamel trim colors are offered. Malm. NAHB booth 1100. *Circle 234 on reader service card*

6. Heat-circulating fireplace has through-the-wall chimney venting. Optional glass doors are 1/4" thick and are offered with bright brass, antique brass and matte black trim. Heatilator. NAHB booth 221. *Circle 235 on reader service card*

7. All-masonry fireplace, the "Brick-O-Lator," has two thermostatically-controlled fans that recirculate air into room. Combustion air is supplied from outside, rather than from room. Triangle Brick. *Circle 236 on reader service card*

8. "Deluxe" fireplace insert can burn wood or coal. Insert is made of 1/4" plate steel with cast-iron grates, air intake manifold, grille and ashpan. Doors feature Pyroceram® glass. Suburban. *Circle 237 on reader service card*

9. "Energizer II" heat circulator comes in two sizes to fit 38"- or 43"-wide fireplace openings. Features include two 250 cfm blowers, glass doors, five heat transfer surfaces, positive locking damper and easy-to-install aluminum and vinyl ducts. Superior. NAHB booth 1929. *Circle 238 on reader service card*

10. "Moravian" fireplace insert comes in 26"- and 29"-wide models. Firebox is 1/4" plate steel; glass panel doors are cast-iron. Optional blower system is available. Quaker Stoves. *Circle 239 on reader service card*

11. Fireplace/woodstove has a large capacity fuelbox that can hold up to 200 lbs. of wood. Airtight unit can deliver up to 100,000 Btu's per hour, and is capable of heating a 2,000-sq.-ft. home. Combustion air is drawn from outside the house. Optional hydronic and domestic heating components are offered. Greenbriar. *Circle 240 on reader service card*

12. Heat-circulating fireplace insert can heat up to 1500 sq. ft. Unit is stainless steel; black finish comes with a smooth or a "leather" look. Door trim is brass. Five sizes are offered. Aquapliances. *Circle 241 on reader service card*



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1. Suspended ceiling system includes fabric-like acoustical panels set into a metal grid. Panels are made of a washable mineral fiber which is fire-retardant and warp-resistant. Armstrong. NAHB booth 1654. *Circle 313 on reader service card*

2. Waferboard building panel is composed of hardwood and aspen wafers bonded with phenolic resin. Panel can be positioned either parallel or at right angles to supports. Applications include roof and wall sheathing, siding and subfloors. Northwood. NAHB booth 1126. *Circle 314 on reader service card*

3. Acoustical ceiling panels are available in two sizes: 2' x 4' and 2' square. Acoustone® panels absorb sound from .60 to .70 nrc. Frosted colors include green, red, yellow, blue, brown and charcoal as shown. U. S. Gypsum. NAHB booth 1460. *Circle 315 on reader service card*

4. Roll-back skylight roofing system is operated electrically; no moving parts are exposed to elements. Shown is only one of many systems available from the manufacturer. Rollamatic Roofs. *Circle 316 on reader service card*

5. Metal spiral staircase comes with a choice of four treads. Stair heights range from 8'¼" to 9'6". Pre-engineered stairs, which can be used outdoors as well, are assembled from stock components. Logan. *Circle 317 on reader service card*

6. Sill sealer shown being installed is a felted cellulose fiber that helps control air infiltration between sill plate and foundation or at other joints. Sealer is offered in 4", 6" or 8" wide rolls. Conwed. *Circle 318 on reader service card*



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7. Aluminum rain-carrying system has a vinyl coating, providing a finish that resists peeling, chipping and cracking. System is available in a variety of colors, with matching soffit, fascia and siding. Aluminum Ind. *Circle 319 on reader service card*

8. Woodside™ vinyl siding may be ordered with separate or foam polystyrene insulation panels. Clapboard-like siding, which has a woodgrain texture, comes in double 4" or 8" widths. Bird & Sons. NAHB booth 720. *Circle 320 on reader service card*

9. Mineral fiber siding shingles come in a variety of colors, including colonial blue, autumn brown, pocono white, oak, palm green, cloud gray and Bermuda sand. Supradur. *Circle 321 on reader service card*

10. Prefinished siding is constructed of medium-density hardboard. The vertical-groove material, with an embossed wood-like finish, is available in five colors; shown is summer tan. Panels come 4' x 8' and 4' x 9'. Boise Cascade. NAHB booth 1738. *Circle 322 on reader service card*

11. Exterior insulating panel has an R-value of 8.4. Waterproof panel is suitable for sidewall applications in new or retrofit construction. A variety of colors, matching trim and moulding are available. Keystone Systems. *Circle 323 on reader service card*

12. "Mark 5" vinyl siding is a double-five panel with a shake-like design. The "T-Lok" siding is also available in double-four, and eight-inch horizontal, vertical, triple-four panels. Siding shown is in heritage blue. Mastic. NAHB booth 1340. *Circle 324 on reader service card*



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1. Add-on solarium is suitable for new homes or remodelings. Sliding doors and wall and roof panels have aluminum-clad wood frames with baked enamel finish. Several window shading options, including Slimshade®, a narrow built-in venetian blind, are offered. Rolscreen. *Circle 289 on reader service card*

2. Stainless-steel water tank, with a 1,000-gal. capacity, is designed to be used with manufacturer's space heating/AC/domestic-hot-water system. Tank acts in combination with an underlying bed of stones as a heat-storage plenum for the system. Thomason Solar Homes. *Circle 299 on reader service card*

3. Solar screen, made of vinyl-coated glass fiber, reflects up to 70% of sun's heat and light, according to the manufacturer. Screens are custom-made to fit any window opening. Colors available include charcoal, bronze, gold, and silver gray. Phifer Wire. NAHB booth 2639. *Circle 290 on reader service card*

4. "Model D-222" collector has a copper heat absorber with a selective black chrome coating. Steel mounting brackets for use in horizontal or vertical installations are offered. Glazing is 1/2" tempered Solatex® glass, double-sealed with silicon rubber gasket. Ametek. *Circle 291 on reader service card*

5. Flat-plate collector is designed to allow expansion and contraction of absorber plate, preventing problems due to warping. Two models, weighing 65 lbs. and 95 lbs. respectively, are available. Other features: aluminum frame and a gasket that provides a water-tight seal. Sunearth. *Circle 292 on reader service card*

6. Air-to-air space-heating system includes rooftop collectors (shown installed), air handler, heat-storage tank, and air ducts and dampers. A five-year warranty is offered. Solaron. NAHB booth 2110. *Circle 293 on reader service card*

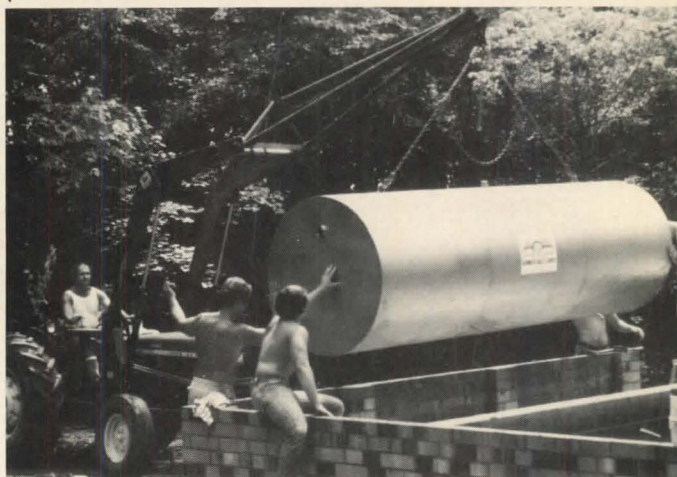
7. Sunmaster™ evacuated-tube collectors, designed for use in space-heating/AC and domestic hot-water systems, are more efficient than flat-plate collectors in cold climates, according to the manufacturer. System is preassembled. Sunmaster. NAHB booth 1801. *Circle 294 on reader service card*

8. Solahart® domestic hot-water system consists solely of flat-plate collector and storage tank shown, and connective copper tubing. Unit can generate water temperatures up to 205°F in the summer, according to the manufacturer. The 80-gal. storage tank is insulated with pressure-injected high-density polyurethane. Solahart. *Circle 295 on reader service card*

9. Solar Shingles™, which simulate roofing shingles, interlock to form a large collector for a domestic hot-water system. Water flows through connected "shingles" in a zig-zig pattern, from top of roof to bottom. Shingles can be installed over existing roofs. Straza Enterprises. *Circle 296 on reader service card*

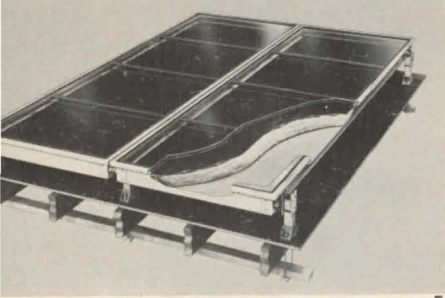
10. All-weather day/night collectors contain a refrigerant that absorbs heat from 1) the sun, 2) air movements over the collector surfaces, and 3) the moisture from outside air. South-facing installation is said not to be required. System is suitable for new or retrofit construction. Solar Specialties. NAHB booth 2328. *Circle 297 on reader service card*

11. Flat-plate collectors, designed for domestic-hot-water or space-heating systems, have extruded aluminum frames. Units meet ASHRAE 93-77 standards. Solar Energy Products. NAHB booth 2713. *Circle 298 on reader service card*





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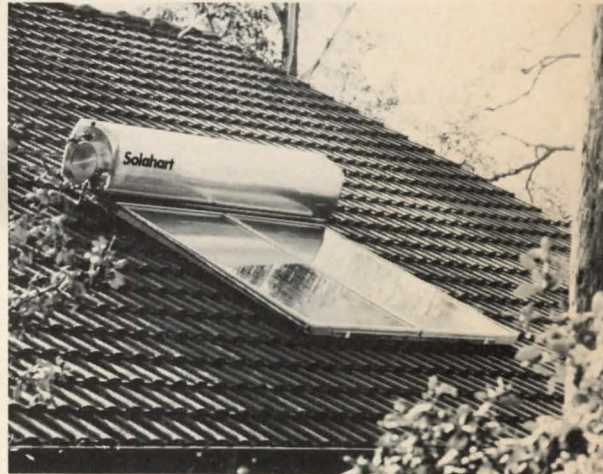
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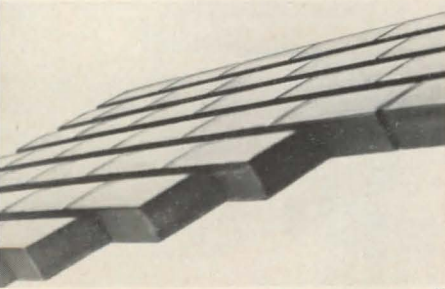
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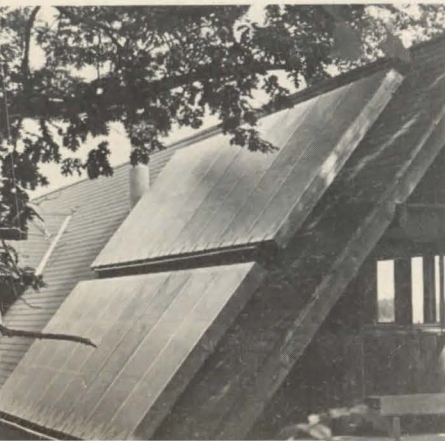
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11

1. "La Villa" ceiling fan is offered with various style blades: white filigree, as shown, natural wood, and wood with cane inserts. Fan can be flush- or recess-mounted. Martin. NAHB booth 814. Circle 300 on reader service card

2. Computerized oil burner control, triggered by outdoor temperature, is designed for use with hot-water baseboard heating. The Enertrol™ allows burner to heat water only as high as is necessary to keep room temperature at 68°F. American Stabilis. Circle 301 on reader service card

3. Setback thermostat is compatible with 24v heating and/or AC system. MINIVECTOR™ thermostat can be used as a single or double setback, permitting up to four temperature adjustments per day. Chatham Brass. Circle 302 on reader service card

4. Radiant heating system, shown installed on ceiling, is suitable for retrofit work as well as new construction. Energy-Kote® panels come in surface-mount or drop-in models. The manufacturer claims that the UL-listed system will provide more uniform room heating than hot air systems. TVI. Circle 303 on reader service card

5. Gas-fired boiler features pilotless electronic ignition system and automatic damper. Type CGM unit (shown) is available in six lines with a 47,800 and 167,000 Btuh capacity. Weil-McLain. NAHB booth 1566. Circle 308 on reader service card

6. "Classic" ceiling fan features 16-pole, condensor-run motor with a "permanent" lubrication system. Optional lamp attachment is available. Seven other models are offered. Panasonic. NAHB booth 1771. Circle 305 on reader service card

7. Split-system air conditioner is offered in seven models that range in capacity from 29,600 to 46,000 Btu's. D.E.S.® units include copper tubing, aluminum fin coils, quick-connect couplings and precharged refrigerant lines. Coleman. NAHB booth 1109. Circle 306 on reader service card

8. Two-speed heat pump adjusts operating speeds according to temperature and humidity conditions. Shown are the outdoor coil section, compressor and controls, which are installed indoors. "Weathermaster III" comes in three sizes. Carrier. NAHB booth 1724. Circle 307 on reader service card

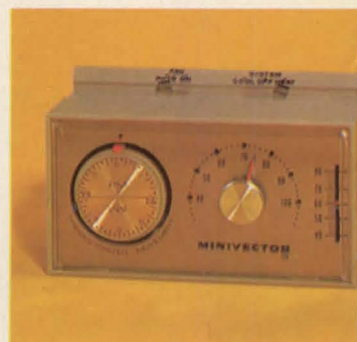
9. Room heater is a self-contained unit, requiring no plumbing, piping or water supply. Heater is part of a line of electric hot water heaters that includes built-in wall and baseboard heaters. Intertherm. Circle 304 on reader service card

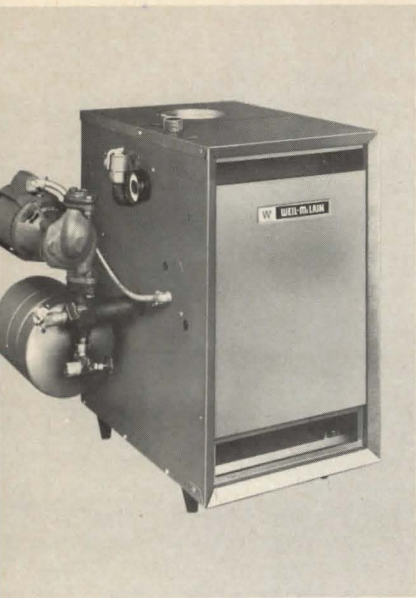
10. Energy management system is designed for installation in all-electric homes. System monitors power consumption by turning off preselected, non-critical loads during peak command hours. Dencor. Circle 309 on reader service card

11. "Casbah"-style fan has teak wood blades with cane inserts. Fan includes the manufacturer's "Energy Miser" motor. Other styles are offered. Encon. Circle 310 on reader service card

12. Air conditioner, with a 13.2 SEER rating, is available in three sizes. Exhaust is blown out vertically through top discharge. Galvanized steel cabinet has a malibu beige and jade finish. BDP. NAHB booth 510. Circle 311 on reader service card

13. Heat pump features cabinet with an L-shape lift-off panel on two sides for easy servicing. Easy-to-install unit is available in sizes from one to five tons. Singer. Circle 312 on reader service card

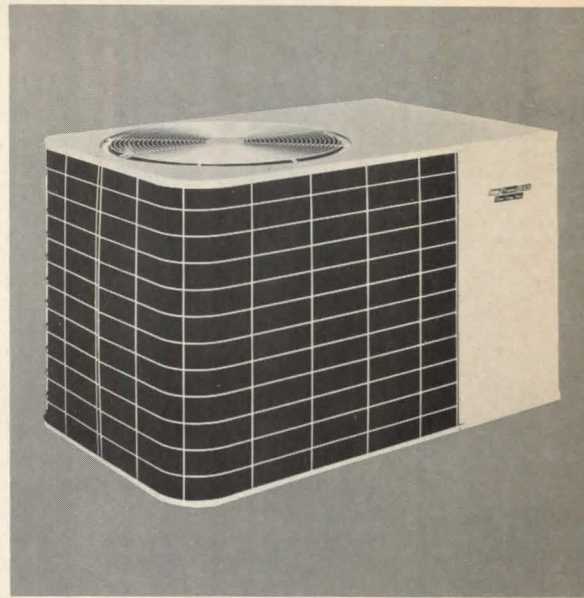




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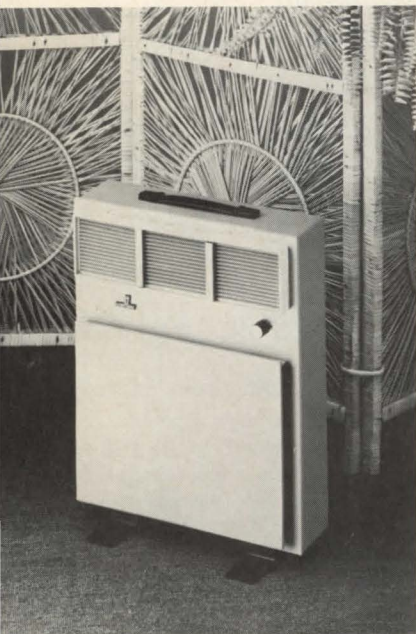
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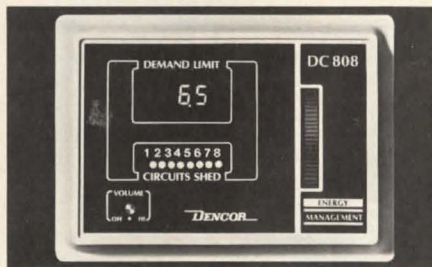
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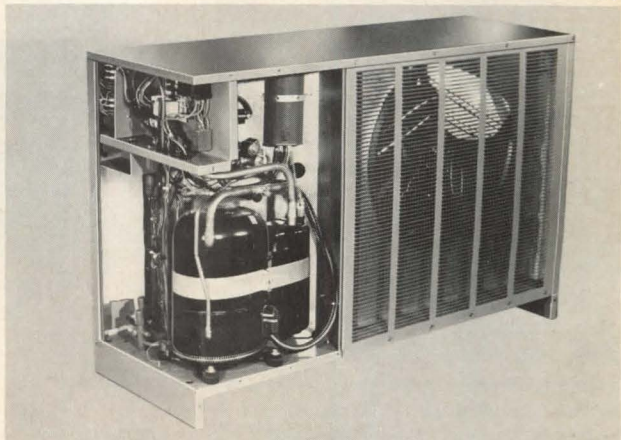
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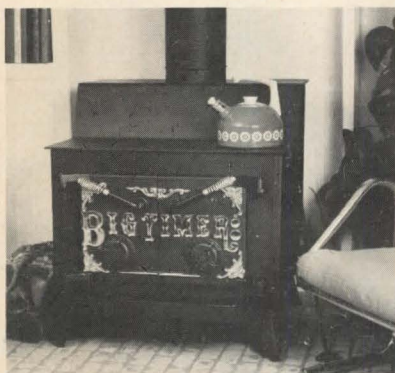
Combination woodstove/fireplace (above) comes in five models, one of which may be used from two sides. All models have an upper cooking compartment and a lower storage compartment. Rais & Witus. Circle 325 on reader service card



Heat shields for walls and floors—shown installed above—come in brick, flagstone and wood patterns. Wall unit is installed over one-inch ceramic spacers, which provide for air flow. Hop Cap. Circle 326 on reader service card



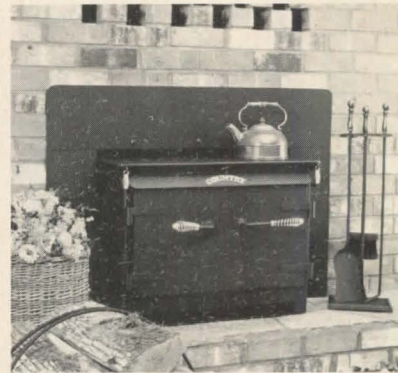
Freestanding fireplace/stove (above) has only one metal shell, which, claims the manufacturer, makes it more energy-efficient than conventional convection/radiant heat stoves. Thulman Eastern. Circle 327 on reader service card



"Big Timer" (above) burns woods for up to 12 hours. Internal baffle recirculates gases released from burning wood back into the flame. Optional grille insert allows unit to be used as fireplace. Big Timer. Circle 328 on reader service card



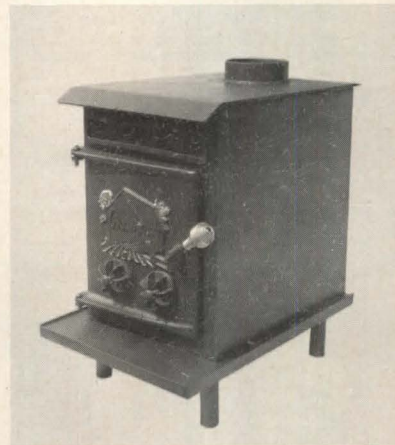
Coal stove (above), which can provide up to 40,000 Btuh, comes with decorative two-tone cabinet. Unit holds up to 50 lbs. of coal, and is regulated by an automatic thermostat. Franco-Belge. NAHB booth 2030. Circle 329 on reader service card



Fireplace converter, which consists of a wood stove and metal flange, is designed specifically for installation in masonry fireplaces, as shown above. Flanges are available in four sizes. Country Stoves. Circle 330 on reader service card



"Colony Hearth" wood stove (above), for installation in masonry fireplaces, has a cooking surface which can be concealed by lowering scalloped lid. Optional air blower permits convection cooking. Earth Stove. Circle 331 on reader service card



Coal stove, "The Little Warmer" (above), can heat from three to five rooms. Unit, which has a cooking surface on top, is made of steel. In other models, door includes a vycor-glass panel. Fire Rite. Circle 332 on reader service card



Cast-iron wood stove (above) has a heat baffle system that results in highly efficient combustion. Unit, which features a decorative side panel, is 12½" wide and has a heating capacity of 33,000 Btuh. Upland. Circle 333 on reader service card

"Builder Dealers Wanted"

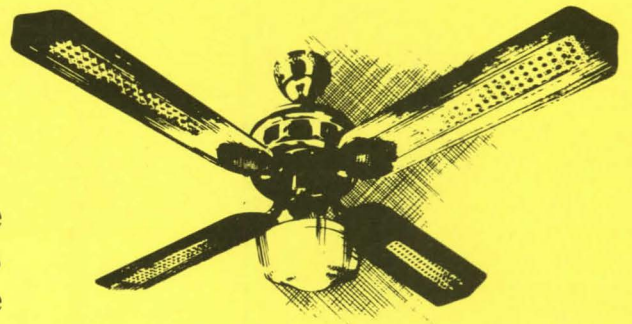
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6 31 56 81 106 131 156 181	206 231 256 281 306 331 356 381
7 32 57 82 107 132 157 182	207 232 257 282 307 332 357 382
8 33 58 83 108 133 158 183	208 233 258 283 308 333 358 383
9 34 59 84 109 134 159 184	209 234 259 284 309 334 359 384
10 35 60 85 110 135 160 185	210 235 260 285 310 335 360 385
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Con-
struction | Both |
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| III Single-Family | A <input type="checkbox"/> | B <input type="checkbox"/> | C <input type="checkbox"/> |
| IV Non-Residential | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> |

V Engaged in Property Management?

- A Residential
 B Non-Residential
 C Both
 D Not engaged in Property Management

VI Housing units planned for next 12 months

- 1 1—10 units
 2 11—75 units
 3 76—250 units
 4 Over 250 units

VII Estimated Housing Value

- A Under \$250,000
 B \$250,000—1,000,000
 C \$1,000,000—5,000,000
 D \$5,000,000—10,000,000
 E Over \$10,000,000

VIII Which do you build?

- 1 Custom Homes 3 Both
 2 Tract homes

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421 446 471 496	521 546 571 596	422 447 472 497	522 547 572 597
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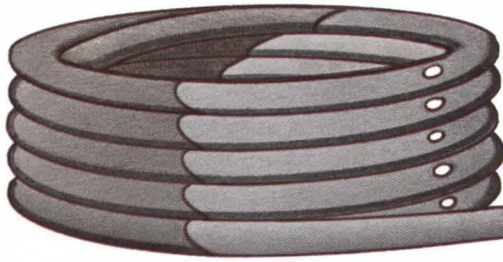
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- VIII Which do you build?**
- 1 Custom Homes 3 Both
2 Tract homes

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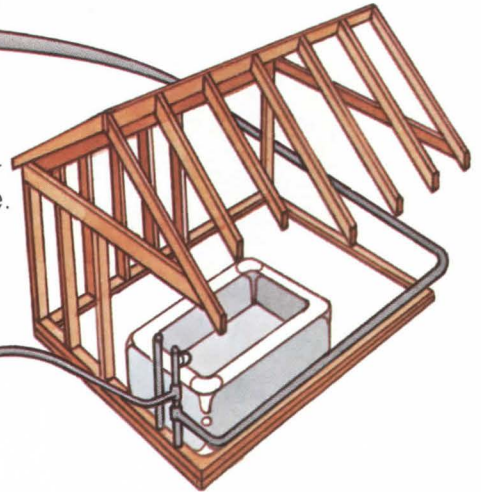
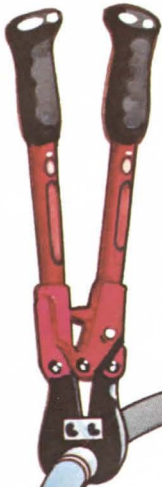
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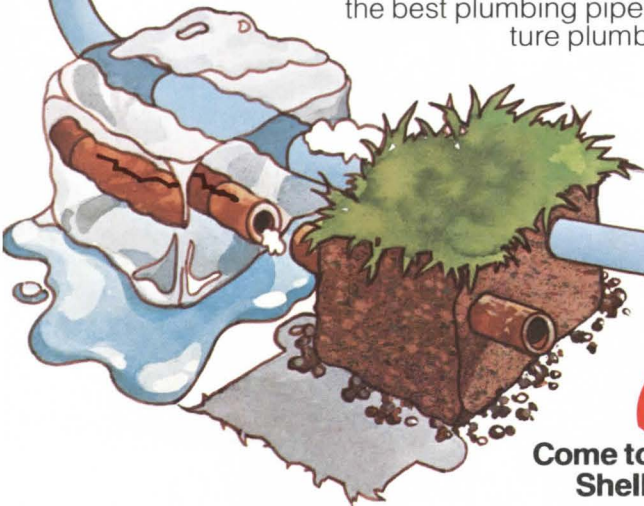
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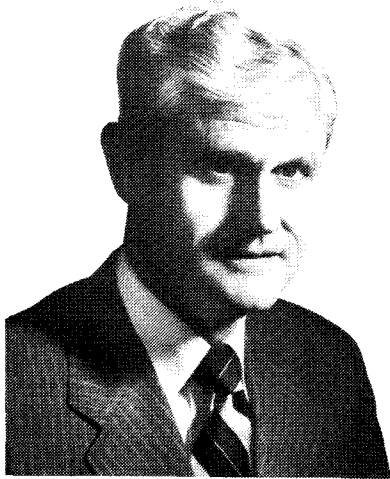
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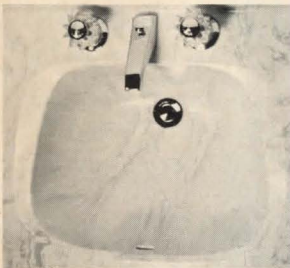
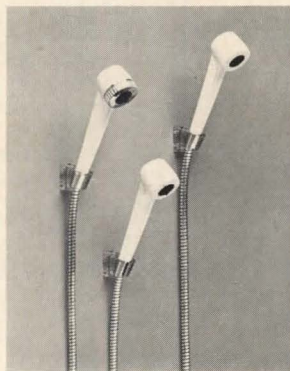
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Folding shower door (above) has an anodized aluminum frame and shatterproof panels made of BDS polymer. Tub-Master. NAHB booth 1394. Circle 342 on reader service card

Hand-held shower head line includes the water-saving Ondine I; Ondine II, with water-flow control; and Ondine X-90, with pulsating massage spray. Ondine. NAHB booth 125. Circle 343 on reader service card

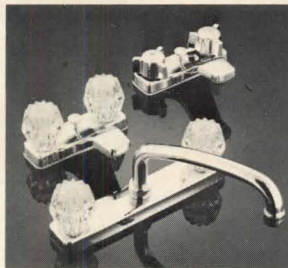
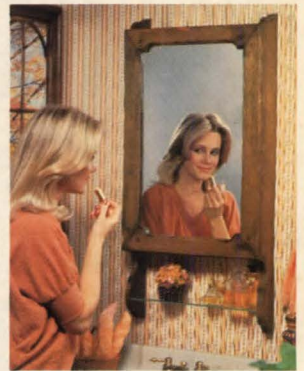


Cultured marble sink (left) is designed to be installed into any standard 22"-deep vanity. One piece unit with backplash has contoured beveled rim and smooth edges, and is formed extra-wide at front. "The Phoenix" is available in a variety of colors. Taylor Industries. Circle 344 on reader service card



Molded vitreous china sinks (above) are from the "Aretussa Series." Sinks are offered in five other styles and in ten colors. Europa Bath. Circle 346 on reader service card

Medicine cabinet (right) includes oak trim and sides, mirrored door and built-in glass shelf. Light and dark finishes are offered. Monarch. NAHB booth 1743. Circle 347 on reader service card



Two-handle faucets (left) are part of the Valley-C™ line of coordinated bath and kitchen units. The faucets have chrome plate finishes and are offered with acrylic or chrome-finish handles. All waterways are constructed of brass. U. S. Brass. NAHB booth 1376. Circle 348 on reader service card



Fiberglass® tub/shower enclosure includes four components that snap together without caulking, clipping or glueing. Owens-Corning. NAHB booth 1436. Circle 345 on reader service card



Dual-track shower curtain rod (above) allows liner and curtain to be hung separately. Rod is made of anodized aluminum. Kinkead. NAHB booth 1460. Circle 349 on reader service card

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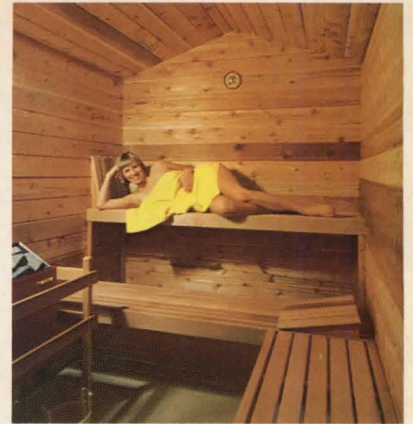
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Garden-grade redwood is suitable for constructing appurtenances like those shown surrounding the hot tub above. Three wood types shown are: construction heart, construction common and merchantable. California Redwood Assn. Circle 350 on reader service card



Preplumbed spa (above) comes with wood rail, skirting, electrical equipment and acrylic tub. Tub accommodates three adults, and comes in blue, brown and beige. Optional two-jet system is offered. Mississippi River Spa & Hot Tub. Circle 353 on reader service card



"The Sauna Cabin" (above) is designed for outdoor installation. Cedar walls and ceiling are pre-cut, premortised and pre-drilled. Sauna kit also includes heater, controls, prehung door, benches and accessories. Amerrec. NAHB booth 1276. Circle 355 on reader service card



Prefab sauna (above) comes in two sizes: 8' x 8' and 6' x 4'. Foam insulation, 1 1/2" thick, creates a vapor barrier that prevents moisture penetration. Exterior surface (not shown) is oak paneling; interior wood is premium-grade pine or redwood. Am-Finn. Circle 351 on reader service card



Acrylic whirlpool bath (above) is a self-contained unit that includes pumps, motor and heater. The Quanta™ will hold up to six people. Whirlpool has six jets, five on sides and one on bottom. Jacuzzi Whirlpool Bath. NAHB booth 1224. Circle 354 on reader service card



Oval whirlpool bath (above), the "Caesar," has four adjustable jets that operate off a 3/4hp pump. Tub, made of fiber glass reinforced acrylic, comes in six colors and measures 5 1/2' x 3 1/2' x 15 1/2'. A smaller model is also available. Crane. Circle 356 on reader service card



Pressure-treated lumber is suitable for constructing the benches, decks and hot tub shown above. The lumber is resistant to insects and to rotting. Western Wood Preservers Institute. Circle 352 on reader service card



Poolside cabana (above) is made of Nevercrust® aluminum finished in acrylic enamel. Sloping roof includes a skylight. The inside is partitioned into two changing rooms. Unit measures 9'10" x 5'6" x 6'8". Nichols-Homeshield. Circle 357 on reader service card

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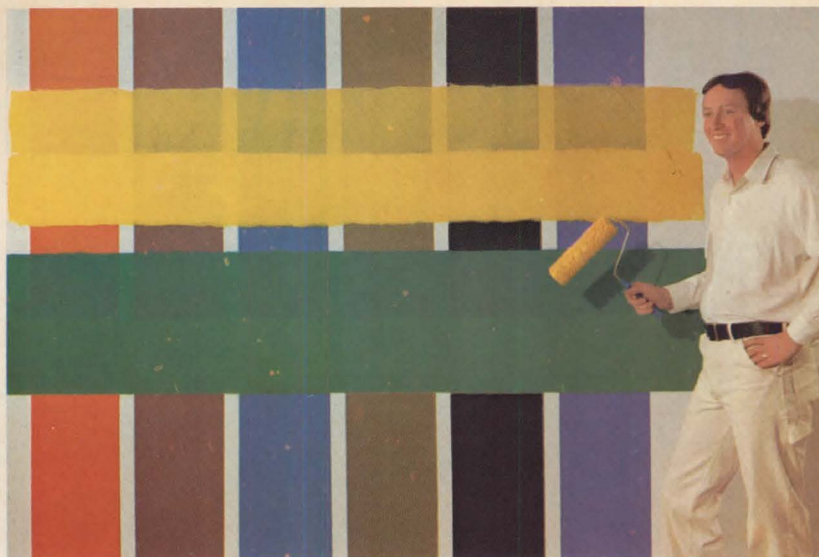
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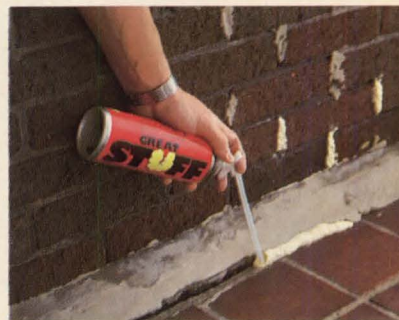
PRODUCTS/COATINGS & ADHESIVES



Improved hiding power of latex paints—demonstrated in lower sections of green and yellow stripes, above—is due to manufacturer's latex paint bases. Bases come in yellow, orange and neutral. PPG. NAHB booth 214. Circle 334 on reader service card



Acrylic-blend mortar (above) may be used to repair chipped or deteriorated concrete or masonry. Compound may also be used to install slate, flagstone, and other building materials. Anchor. Circle 335 on reader service card



Urethane insulating sealant (above) helps prevent heat loss around electrical outlets and other points of air leakage. Material also prevents infiltration by insects or rodents. Insta-Foam. NAHB booth 2316. Circle 336 on reader service card



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Textured coating and mastic mortar are formulated for use with manufacturer's simulated brick products, shown above. Mortar comes in white, black and natural. Z-Brick. NAHB booth 1081. Circle 337 on reader service card



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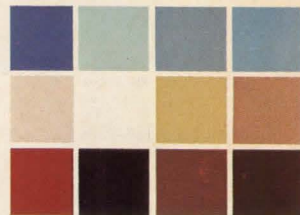


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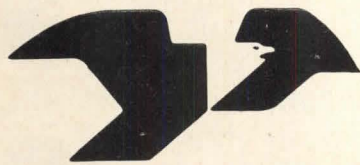
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PRODUCTS/COATINGS & ADHESIVES



Max Bond® adhesive (above) for use in installing drywall, paneling and insulation, permits repositioning of any material for up to 30 minutes. H.B. Fuller. Circle 338 on reader service card



Clear wood finish (above) protects cedar shakes, shingles and sidings from damage from moisture and sunlight. Aquatrol™ finish can help restore natural color of weathered cedar. Flood. NAHB booth 2311. Circle 339 on reader service card



Ceramic wall-tile adhesive (above) trowels on easily and hardens within 90 minutes. Product—a nonflammable latex emulsion—is available in 3½- and 5-gallon pails. It has a light color, a mild odor and is freeze-thaw stable. W. W. Henry. Circle 340 on reader service card



Water-base stain is semi-transparent, allowing wood grain to show, as seen above. Stain, which is easy to apply and clean, may also be used on concrete block, brick and galvanized metal. Gray-Seal. Circle 341 on reader service card

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New from the Raynor Forest... steel that looks like wood!

Timberline is Raynor's new sectional garage door that combines the beauty of wood with the strength, security and durability of steel. And because it's made of steel, Timberline won't rot, warp or shrink, ever. Plus, it's deep-ribbed design takes on an attractive wood-plank appearance.

Timberline features a rich wood-grain, baked-on enamel finish offered in both one and two-car sizes. Insulation and other weather-protection materials are



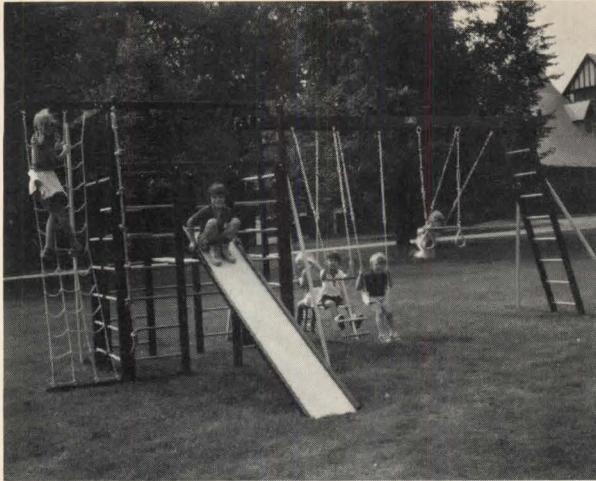
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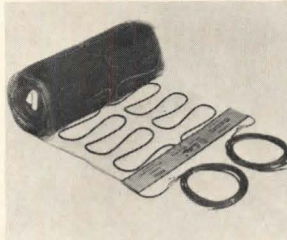
Next time you're selecting a garage door, be sure to ask for the Raynor Timberline. The one door that offers the best of two worlds.

For complete information on the new, beautiful steel Timberline sectional garage door, call your local factory-trained Raynor distributor/installer. You'll find him in the Yellow Pages under "Doors." Or write Raynor Manufacturing Company, Dixon, IL 61021.



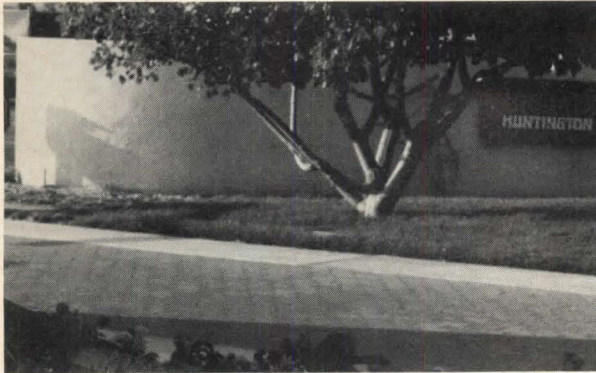
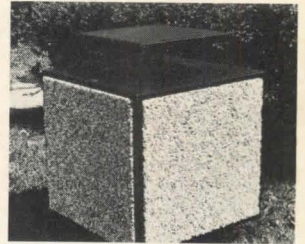
Wood swing set and climbing gym (above) features safety hardware that eliminates exposed threads on bolts. Wood is preserved with a non-toxic, waterproof stain finish. Swing Design. Circle 393 on reader service card

Ice melting system (right), composed of fully grounded heating cables, is suitable for residential and commercial applications. UL-listed unit installs beneath concrete or asphalt. Optional timer is available. Easy-Heat/Wirekraft. Circle 390 on reader service card



"Ironrock" ceramic pavers, typically used for interior decor, may be used outdoors, as shown above, in climates not subject to freeze-thaw conditions. Clay tiles come in a variety of natural tones. Metropolitan Ceramics. Circle 389 on reader service card

Litter receptacle (right) is offered in two sizes: 55 gal. and 30 gal. Receptacle has a bronze metal finish, and comes with four stone aggregate panels. Three aggregate types in a choice of five colors are offered. Clean City Squares. Circle 394 on reader service card

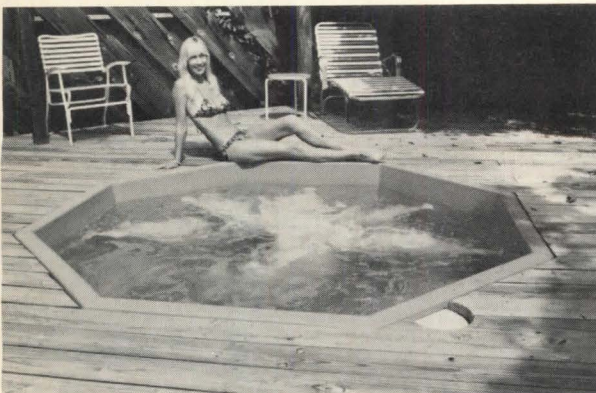


Non-grouted pavers (above) may be replaced individually. A variety of natural tones and four patterns are offered. Muller Supply. Circle 391 on reader service card

Aluminum shed (right) is offered in six sizes. Corrugated unit comes partially assembled. Doors glide on extruded vinyl tracks. Cabanarama. Circle 395 on reader service card



Panelized pavilion (below) is constructed of pressure-treated pine and red and white cedar. Five models are available. Bow-House. Circle 396 on reader service card



Prepiped fiber glass whirlpool (above) requires only three PVC connections for installation. Six models are available. Neptune. Circle 392 on reader service card



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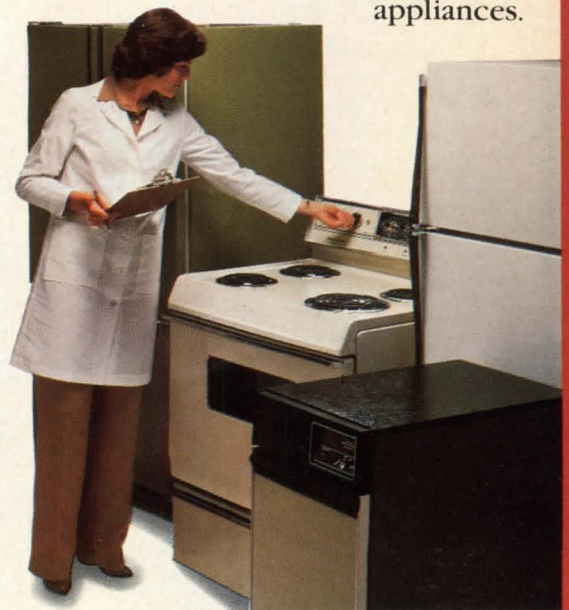
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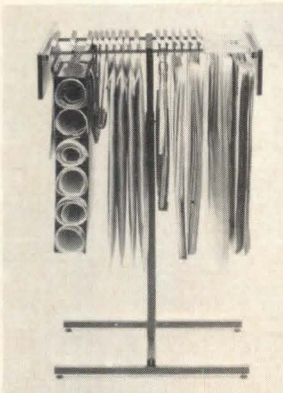
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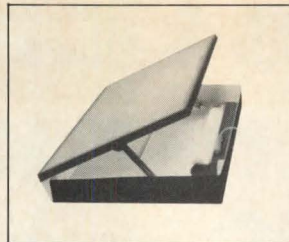
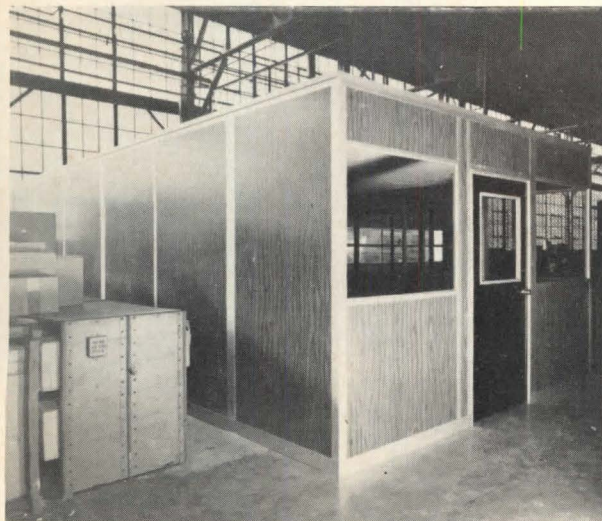


Room partition (above) consists of glass panels mounted on manufacturer's aluminum posts and rails. Carlsrail® railings and posts can also accommodate wire-mesh or plastic panels, or be used as handrailings. Julius Blum. Circle 397 on reader service card

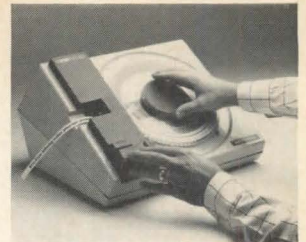
Hanging file (right) has a 25'-long rack, which, according to the manufacturer, holds up to 1,000 single-sheet files. Unit's height is adjustable to 56". Huey. Circle 398 on reader service card



Office module (below) comes K/D in 4'-wide panels. Panels may be used to create two- or three-wall cubicles or enclosed offices, using suspended ceilings. DSI. NAHB booth 2057. Circle 399 on reader service card



Portable light table (above) may be used with its own built-in fluorescent lamp, or with any other light source. Unit measures 16" x 23". Hunter. Circle 400 on reader service card

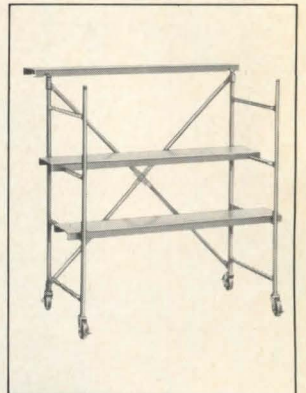


Lettering machine (above) comes in manual and electric models. Interchangeable lettering discs may be obtained for up to 19 typefaces. Kroy. Circle 401 on reader service card



Storage file (above) will hold up to 300 lbs. of blueprints, maps, charts and other flat materials. FLAT/STOR™ files are made of particleboard, with steel frames and drawer channels. Bankers Box. Circle 402 on reader service card

Portable step ladder (right) is 45" long, 22" wide and can hold up to 400 lbs. Four-inch casters are equipped with butterfly brakes to ensure safety during use. Goldblatt. Circle 403 on reader service card



Software package, designed specifically for builders, may be used on Wang minicomputers, as shown below. Program includes job costing and general accounting. T. O. M. Circle 404 on reader service card



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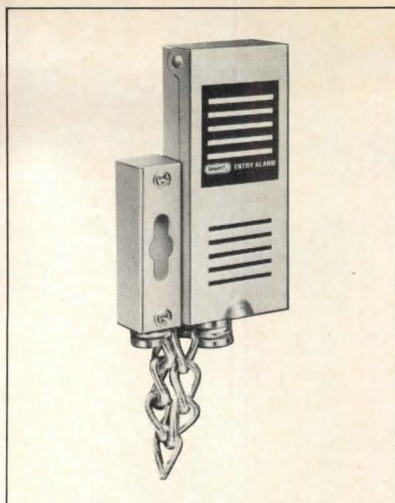
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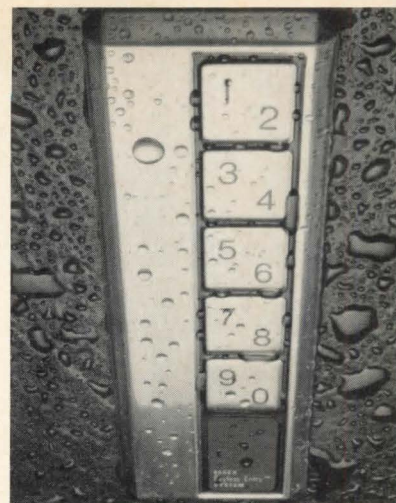
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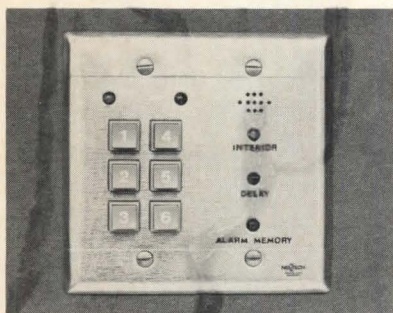
Combined lock and intrusion alarm (above) features a carbon steel deadbolt and pressure-sensitive switch that sounds alarm if door is forced open. The battery-operated Boltalert™ unit may be installed on any wood or metal door. Boltalert. Circle 381 on reader service card



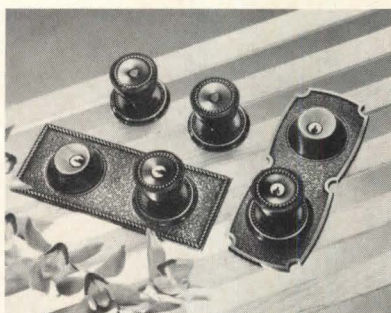
Entry Alarm™ door and window guard (above) is a combination chain guard and alarm system. Unit will sound whether or chain is attached. Unit operates on a 9v battery, has solid state circuitry and heavy-gauge all-steel housing. Cable Electric. Circle 384 on reader service card



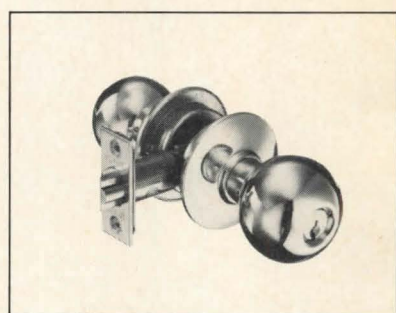
Keyless Entry™ security system (above) can be programmed with any five-digit master combination, which can be changed at any time. Unit can handle a second combination. Keyboard is weather- and vandal-resistant. United Technologies. Circle 386 on reader service card



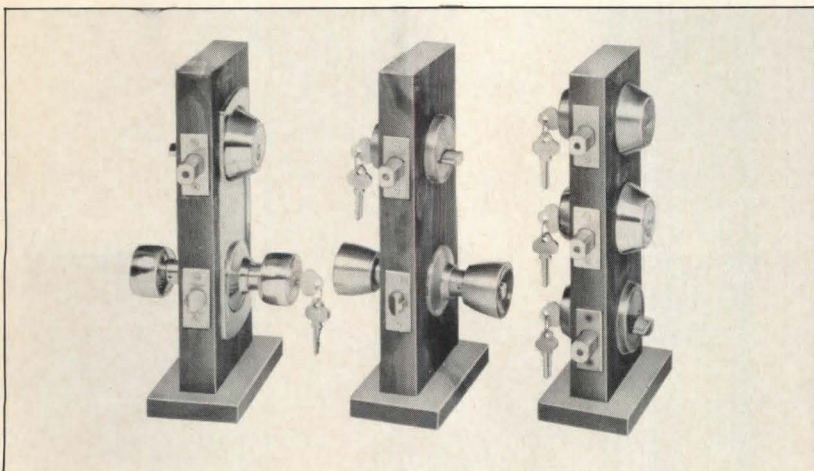
Remote keypad (above) controls any microprocessor-based security system. Unit, designed for surface-mounting, is easily reprogrammable. Units may be installed in any number of rooms. Labeled LED's report which modes are in operation. Nel-Tech. Circle 382 on reader service card



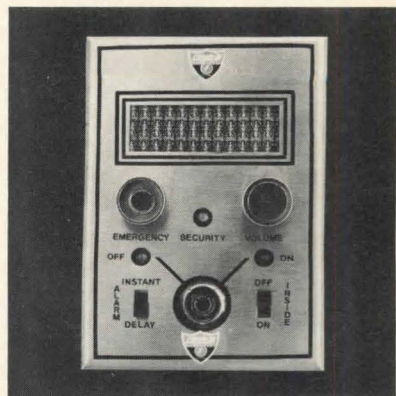
Doorknob line (above) has a decorative beaded motif, and comes in two finishes: antique brass and antique bronze. Matching deadbolts are available. Also available is a lever handle, with the same beaded motif and finishes. Weiser Lock. Circle 385 on reader service card



"Orbit" lockset (above) is available in keyed and non-keyed models for entry- or passage-door use. Brass and bronze knobs and roses are offered in a variety of finishes. Lock is reversible for right or left-hand openings. Schlage Lock. NAHB booth 610. Circle 387 on reader service card



Expanded line of security locks includes (left to right), double lock with decorative escutcheon plate, combination deadbolt/"key-in-knob" lock, and three deadbolts. All internal parts are steel and the bolt, cylinder and housing are constructed of brass. S. Parker Hardware. Circle 383 on reader service card



Master security panel for apartments (above) is part of a multipurpose security system. The wide range of services offered by system includes monitoring of individual units for intrusion, fire and smoke detection. Caribbean Security Systems. Circle 388 on reader service card

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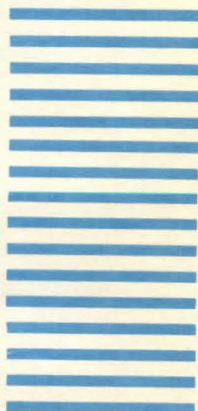
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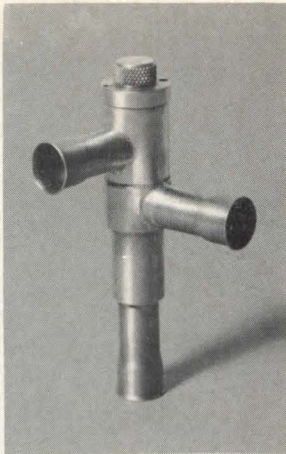
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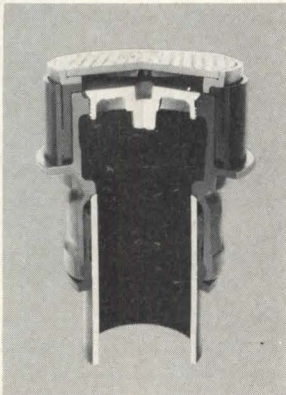
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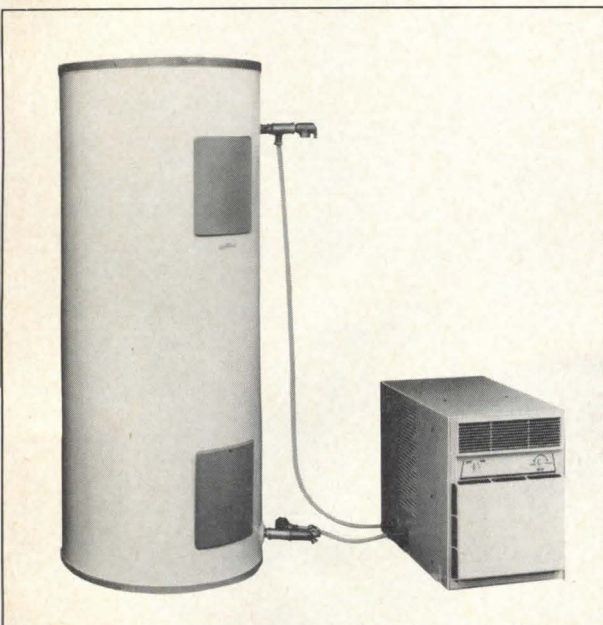
Thermal three-way valve (right) directs the flow of water as it falls above or below a preset temperature. Unit can be used in heat recovery or solar applications and also as a mixing valve. A two-way valve is also available. H&H. Circle 416 on reader service card



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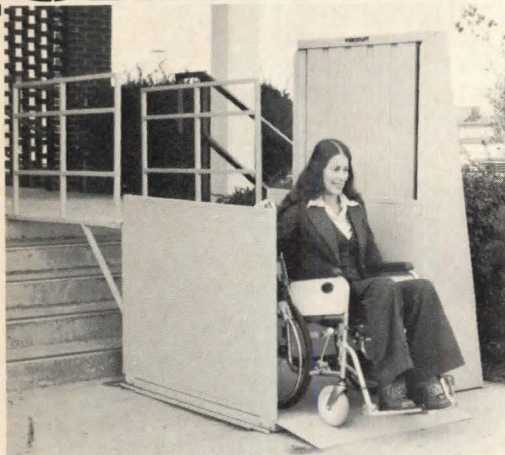
The Board of Directors, former Directors, officers, and employees of Leisure Technology are saddened by the untimely passing of their beloved friend, associate, and former Director of the Company.

For decades he was an articulate leader, critic, cynic, and spokesman for the housing industry. His wisdom, understanding, and friendship will be missed by all those who were fortunate to have known him and touched by his extraordinary life.

Our sympathy to his widow, Patti, and his children, Jennifer, Julia, Richard II, and Susan.

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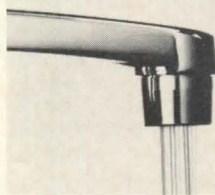
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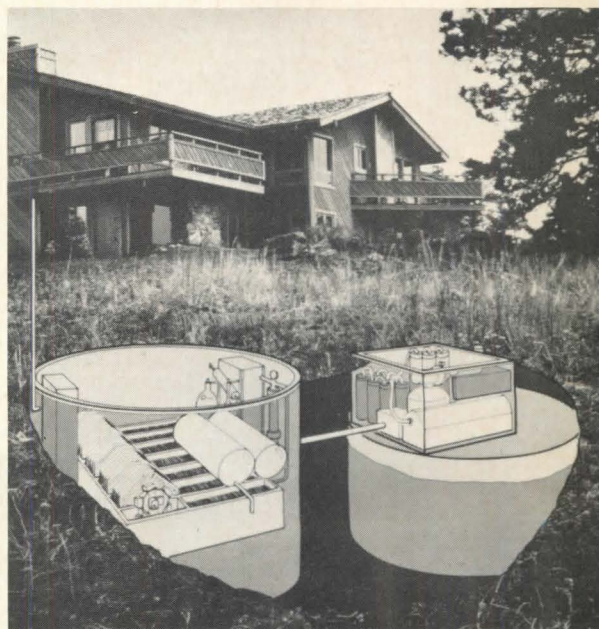
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Corrugated plastic drainage tubing (above) weighs less than conventional materials. Available in various diameters and lengths. ADS. Circle 413 on reader service card



"Omni" flow control (left) limits water flow from faucets and shower heads. Unit, which produces a non-aerated stream, is available with various gallon-per-minute discharge rates. Omni Products. Circle 414 on reader service card



Closed recycling system (above) with a 1500 gal. capacity purifies domestic waste water to be reused for all household purposes. PureCycle. Circle 415 on reader service card

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"290A" truck (above) features a telescoping boom and highlift. The boom has a maximum height of 37' and a load capacity ranging from 9,000 lbs. to 2,250 lbs. when fully extended. Hyster. Circle 405 on reader service card



Concrete vibrator (left) attaches to screed boards that are as long as 20'. The SCREED VIBE™ has a built-in motor that moves the vibrator in the direction of the pour, bringing the finishing paste to the top. The "jitterbugging" problem is eliminated. Cronkhite. Circle 406 on reader service card



Lawn plow (above) lays cable or plastic pipe with the minimum of dislodgment of soil. The V250 vibratory plow, powered by a 25 hp engine, is capable of installing power, communication, water or natural gas lines, and residential sprinkler systems. Ditch Witch. Circle 407 on reader service card

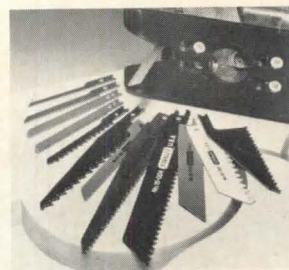
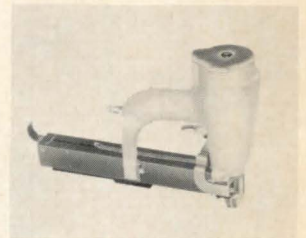
Pneumatic nailer (right) is designed for use in hard-to-reach areas. The heavy-duty CN-325 drives nails measuring from 2" to 3 1/2" long. Duo-Fast. NAHB booth 1961. Circle 408 on reader service card



Heavy-duty chainsaw (below) features a capacitor discharge ignition and automatic oiler. The 24" guide bar uses a 3/8" pitch chain. Safety features include an anti-kickback device. Homelite. Circle 409 on reader service card



Stapler (right) is for use with gypsum, high-rib metal or paper-backed wire laths. It can also be used for wall board, plaster-based materials, stucco mesh or metal stripping. An "open back-plate" staple prevents jamming. Power Line. Circle 410 on reader service card

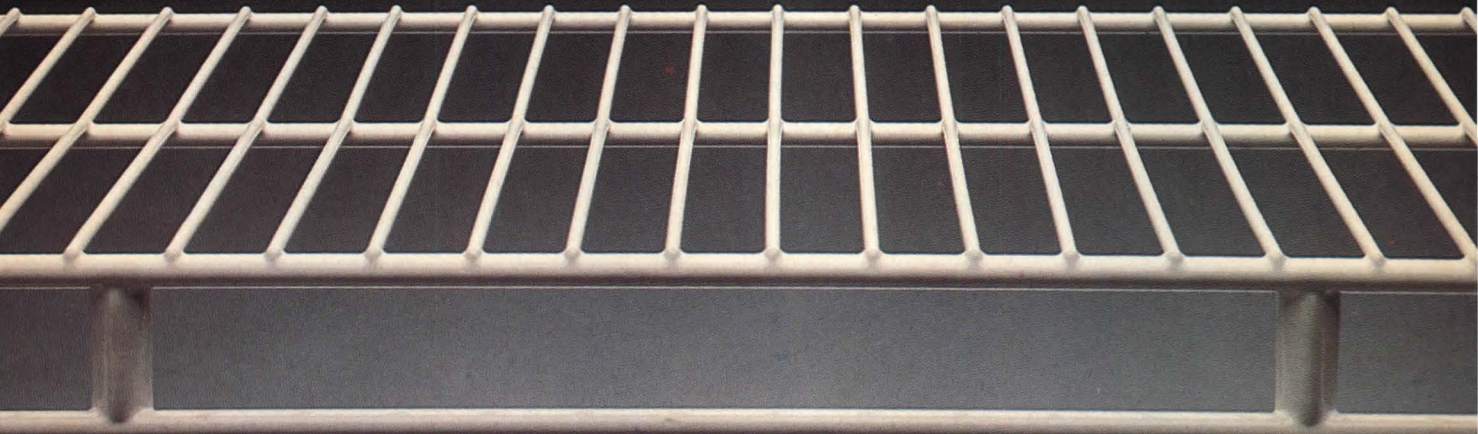


Sabre saw blades (left) are suitable for use in any power saw. The 14 blades shown are offered with 1/4" shanks made of carbon or M2 tool steel. Jig blades are also available in the reciprocating line. Blades come in a variety of lengths and numbers of teeth per inch. Stanley. Circle 411 on reader service card



Skid-steer loader (above) has a 1300 lb. capacity. The loader is 75" high and 55" wide for greater maneuverability in confined areas. Unit is available with either a diesel or gasoline engine. All models have a single-speed transmission for smooth handling. Clark. Circle 412 on reader service card

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- Circle
No.
- 123 Alliance Mfg. Co.123
Hesselbart & Mitten, Inc.
 - 128 American Stair-Glide128
Aspen Adv. Agency
 - * 47 Andersen Corp.46, 47
Campbell-Mithun, Inc.
 - * 2 Armstrong World
Industries, Inc.Cov. II
Marsteller, Inc.
 - 30 Boeckh Publications30
 - 31 Cabot Inc., Samuel31
Donald W. Gardner Adv., Inc.
 - 39 Caradco Corp.38, 39
MacGill/Roos Inc.
Classified127
 - 131 Closet Maid131
McCann-Erickson, Inc.
 - 114 Comptite Shower Pan114
D'Arcy-MacManus & Masius, Inc.
 - 11 Congoleum10, 11
Grey Adv., Inc.
 - 124 Design Space International124
Creative Media of Bala Cynwyd
 - 71 Duo-Fast Corp.126B
Juhl Adv. Agency
 - 135 Du Pont Co.—CorianCov. III
N. W. Ayer ABH Int'l
 - 6 Ford Glass6
Wells, Rich, Greene, Inc.
 - 66 Forest Fiber Products108B, 108C
Westerman Adv., Inc.
 - 33 GAF33
Scali, McCabe, Sloves, Inc.
 - 129 Gas Appliances Mfg. Assn.
(GAMA)129
Needham, Harper & Steers,
Adv., Inc.
 - 15 General Electric15
 - 17 General Electric16, 17
 - 19 General Electric19
 - 21 General Electric21
BBDO, Inc.
 - 23 General Electric23
Young & Rubicam, Inc.
 - 121 Glidden121
Meldrum & Fewsmith, Inc.
Housing Seminars
California Marketing
Scene100, 101
Sales-Effective Marketing
& Design57, 58
Smaller, High-Density
House40, 41
 - 49 Howmet Aluminum Corp.49
Crume & Assoc., Inc.
 - * 27 International Paper Co.25-27
Ogilvy & Mathers, Inc.
 - 111 International Paper Co./
Long-Bell Div.111
Gerber Adv. Agency
 - 115 Jacuzzi Whirlpool Baths, Inc.115
J. Walter Thompson Co.

- Circle
No.
- * 62 Kitchen Compact, Inc.116
Halbleib & Moll Assoc., Inc.
Leisure Technology128
 - 5 Magic Chef4, 5
Liller Neal Weltin, Inc.
 - * 8 Majestic Co.8
Keller Crescent Co.
 - 67 Mechanics National Bank108D
The Cox & Burch Adv. Co.
 - 20 Microphor, Inc.20
Benefield, Levinger & Campbell
 - 116 National Bank of North America 116
Geers Gross Adv., Inc.
 - 60 New Energy Industries, Inc. ..106A
Nutone Div., Scovill Inc.1, 2
Dektas & Eger, Inc.
 - 136 Olympic StainCov. IV
Kraft Smith
 - * 43 Owens Corning Fiberglas43
 - * 45 Owens Corning Fiberglas45
Ogilvy & Mather, Inc.
 - 50 Pen Ply50
Soderberg Thompson
MacEwan Inc.
 - 48 Poly-America, Inc.48
W. Neal Marketing & Adv. Svcs.
 - 68 Pozzi Window Co.108E
 - 117 Raynor Mfg. Co.117
Ad Forces
 - 65 San Valle Tile Kilns108A
Evans/Weinberg Adv., Inc.
 - 13 Scheirich Co., H. J.12, 13
Doe-Anderson Adv.
 - * 29 Sears, Roebuck & Co.28, 29
 - * 59 Sears, Roebuck & Co.59
 - *119 Sears, Roebuck & Co.119
Stern Walters/Earle Ludgin, Inc.
 - 70 Shell Chemical108A
 - 70 Shell Chemical108H
MDR, Inc.
 - *133 Simpson Timber Co.133
Kraft Smith
 - 69 Standard Structures, Inc.108G
The Capener Co.
 - *113 Temple, Div. of
Temple-Eastex, Inc.113
Ritchie, Hopson & Assoc.
 - * 61 Trus Joist Corp.106B
David W. Evans Inc./Calif.
 - 35 Weather Shield Mfg. Inc.35
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 - * 37 Whirlpool Corp.36, 37
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For 1981: a potpourri of advice and products

Rehab & Remodeling. As long as building costs continue to rise, so will interest in housing rehab and remodeling. Recognizing this interest, the American Institute of Real Estate Appraisers has published an eight-page pamphlet which suggests that "rehab know-how is more than hammer and nails." The publication discusses the factors to be analyzed and the research to be done before a builder can make a safe real-estate investment. The Institute recommends that a feasibility study be prepared, taking into account such factors as the social makeup of the area, street patterns and the availability of public transportation and shopping to the property. A list of construction details for assessing the building itself are also included. For a copy of this publication, *circle 501 on reader service card.*

Solar hot water system. Advice on another kind of investment—the installation of a solar hot water heating system—comes from the U.S. Dept. of Housing and Urban Development in cooperation with the Dept. of Energy. Although designed primarily for consumers, this 125-page book is filled with information on how solar hot water heating systems work and on the installation and upkeep costs. Chapter headings include: "How Solar Water Heaters Work," "Estimating Costs and Savings," "Warranties and Contracts," and "Protecting Your Investment." The publication could be useful as a guide for your wavering or confused new-home prospects.

The appendices include economic "worksheets" for comparing costs and savings in reference to mortgage and short-term loans, and tables showing annual energy-savings by state from a typical solar water heater.

For a copy of the book, write to Monique Rothschild at the National Solar Information Center, at the Franklin Research Center, 1030 15th St. N.W., Washington, D.C. 20005, or call their toll-free number, (800) 523-4700. NAHB booth 1886.

Lighting. The SPI lighting system, which offers glare-free indirect lighting, is described in a 24-page publication. The brochure highlights contemporary-style lighting portables and task lights for office installation. Four-color photographs show several such applications. Fixed lighting for offices, lobbies and other commercial uses are also featured. Application guides are included. McGraw-Edison. *Circle 502 on reader service card.*



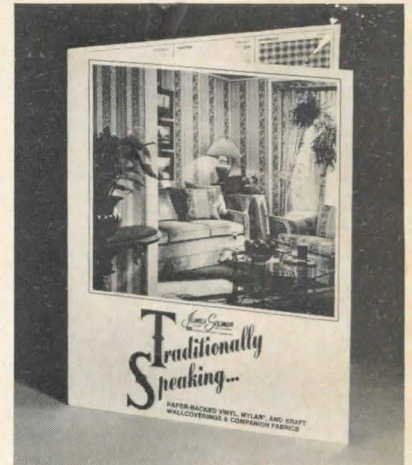
Ceramic tile. A 1981 catalog of glazed, quarry and ceramic tile is available (see photo above). The 36-page brochure introduces tile lines and colors, displaying stock patterns, pre-grouted tile systems, trim shapes and bathroom accessories. Four-color photographs show many of these tile lines installed in homes, spas, office buildings and other commercial applications. Accessories such as tile cutters and grouts are displayed. American Olean. NAHB booth 820 and 830. *Circle 503 on reader service card.*

Wallcovering. A four-page brochure on the "Traditionally Speaking..." collection of wallcoverings and companion fabrics is available (see photo above right). Each of the 25 wallcovering designs is displayed in color, as are companion fabrics. James Seeman. *Circle 504 on reader service card.*

Steambaths, whirlpools and tubs. The therapeutic benefits of these products' "hydro-massage" capabilities are discussed in a 12-page catalog. Technical and installation details are included. ThermaSol®. NAHB booth 1191. *Circle 505 on reader service card.*

Redwood paneling. The advantages of using redwood over other woods for paneling is discussed in a four-page pamphlet. Four-color photos show the paneling in a variety of room settings in the home, including the atrium, living room and bathroom. Windsor Mill. *Circle 506 on reader service card.*

Fir residential doors. A 16-page brochure catalogs the variety of models available from this manufacturer, including insulated doors, exterior panel and exterior sash doors, and interior doors. Cross-sections and diagrams show how the doors are constructed to



provide maximum insulation qualities. C. E. Morgan. NAHB booth 1135. *Circle 507 on reader service card.*

Stairs. A second brochure from this manufacturer is devoted to stairways and stair parts. Drawings illustrate the range of styles available and the parts—such as starting steps and rails—that go with them. C. E. Morgan. *Circle 508 on reader service card.*

Entrance door systems. The Crystalline® series is highlighted in an eight-page brochure. Photographs show the range of available doors. Also featured are leaded, beveled glass panels available for use as door inserts or sidelights. Therma-Tru®. NAHB booth 312. *Circle 509 on reader service card.*

Brass handle sets. A catalog of brass lever-handle sets is offered in a 20-page booklet. Nine styles are shown—both the passage and privacy models—in four-color photographs. Valli & Columbo. NAHB booth 2709. *Circle 510 on reader service card.*

Hardwood flooring. Four products are highlighted in an eight-page brochure: the PermaGrain®, GenuWood®, Cork-o-Plast™, and Longstrip™ floorings. The brochure also includes information on Fabritile™, a vinyl-bonded fabric flooring. PermaGrain. *Circle 511 on reader service card.*

Decorative blinds. A 16-page booklet provides a showcase for the manufacturer's stock of decor blinds. Four-color photographs of room settings show how window treatments can enhance room decor while providing privacy and sun protection. A fold-out back cover displays the range of colors. Hunter-Douglas Inc. *Circle 512 on reader service card.*

CORIAN®



CORIAN® is solid value for both builder and buyer.

When you select CORIAN® building products for bath, kitchen or bar, you offer buyers a solid investment in luxurious beauty plus durability and ease of care.

The solid construction of CORIAN is unique. Marble-like patterns and colors run clear through. There's a depth and richness not possible with coated "synthetic marbles" or laminated plastics.

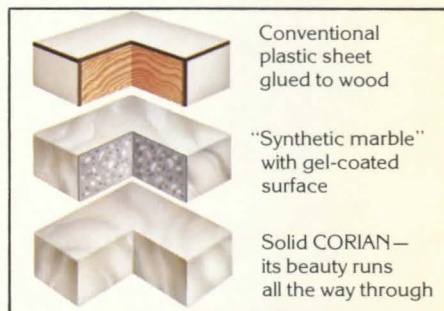
CORIAN is tough enough to take rugged wear without losing its look of elegance. It resists staining. And a little household cleanser does

away with minor surface scratches or cigarette burns.

What's more, craftsmen can work and shape CORIAN as easily as wood, to carry out the most imaginative decorating ideas.

CORIAN comes in one-piece molded tops and bowls for baths, kitchens and bars in a range of styles and sizes. CORIAN sheet for kitchen and bath counter tops, wall wainscoting, bath and shower surrounds, and custom surfaces is also available.

Successful builders find CORIAN appeals to buyers. It's a solid



Conventional plastic sheet glued to wood

"Synthetic marble" with gel-coated surface

Solid CORIAN—its beauty runs all the way through

investment in beauty, and adds more in value than in cost. For more information write: Du Pont, Room 38398, Wilmington, DE 19898.



Circle 135 on reader service card

LOOK WHAT'S NEW IN VEGAS.



Check in to the Olympic display area at the Las Vegas NAHB exhibition. You'll see three new Olympic products—Weather Screen, Wood Preservative Clear, and Wood Preservative Green. Plus see the new colors we've added to our line. There's even a new demonstration for Olympic Machine Staining. See what's new under the Vegas sun. At Olympic's booth #1577.

Circle 136 on reader service card