

HOUSE & HOME

THE
MAGAZINE
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4/77

housing

APR 1977
AMERICAN INSTITUTE
OF ARCHITECTS

RE-SELL KITCHENS

houses at \$13.88 sq. ft.

density affects development costs

houses priced for the market



The Call of The Wise



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The bath helps sell the home. Here's how NuTone can help sell the bath...



Simply stated, a NuTone-furnished bathroom sells because it looks great. People walk in and gasp, "Wow!" It's class and looks custom-built. Everything is so well-constructed. It looks like the kids can't scratch that finish! Bath cabinets and vanities are so thoughtfully matched. Honey, look how the mirror goes with the lighting! Plus coordinated decorative lighting, polished chrome Hall Mack

accessories, quiet and powerful heaters and ventilation fans. All with the NuTone reputation for dependability. Chances are, those buyers already know about NuTone — they've been seeing our full color ads in consumer magazines and on national television. Besides, up close, the quality is obvious. Bathrooms mean a lot to people. When they've chosen your bathroom, it's a good bet they've bought the house.

To learn more about NuTone's complete line of bathroom products, turn the page.

From Decorator Cabinets to Towel Rings... NuTone is the leader in bath products

All NuTone products are designed and engineered to serve the builder's or remodeler's needs. They are good-looking and long-lasting, to please your buyers. They are also competitively priced and easily installed, to please *you!*

New Flexibility with a Breakthrough in Bath Cabinets!

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Matching Vanities and Lights say "Class!" to your buyers.

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- long service life
- easy installation
- competitive pricing

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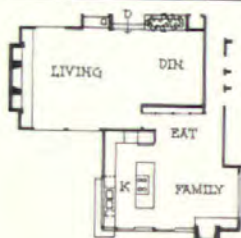
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COVER

Kitchen in 2,475-sq.-ft. patio house priced from \$151,000 to \$176,000. Builder: Avco Community Developers. Location: Windemere, La Jolla, Calif. Photo: Charlie Schneider. For another kitchen from the same project, see page 78.

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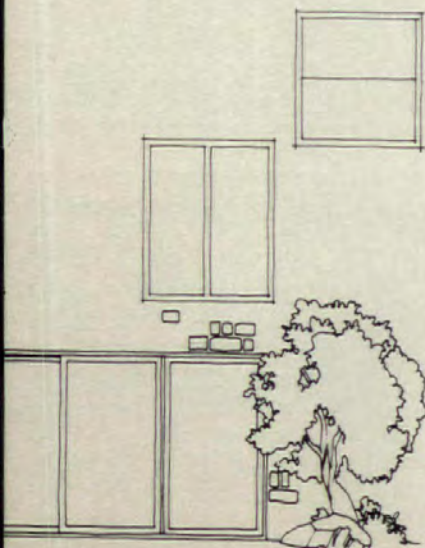
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Big freeze's silver lining: Better climate for the solar house

Ere spring obliterates the harsh memory of last winter's big freeze and fuel crisis, we point out an important implication for home-builders:

Energy-efficient housing's market appeal is now greater than ever.

The public is ready to pay slightly more for heavy insulation. And solar-energy systems, with their even higher price tags, are not as far from market as they seemed a few months ago.

If this market is to be tapped, however, builders themselves must supply the impetus. Manufacturers will help where their products are concerned. But it is the builder who has the ultimate responsibility for the entire process of planning, financing, building and marketing. He has to assemble all the bits and pieces that make up a house. And he must bring to market a product that buyers not only want but can afford.

Builders should have few difficulties insulating and sealing the house shell. As you'll read in the energy roundtable report on page 98, there is much to be done in this area, but the basics are well established. And builders who have led the way in merchandising well-insulated houses have found surprisingly ready market acceptance.

Solar heating is another matter. It's much more complex, much more expensive, and its basic technology has yet to jell completely. The builder going the solar route can buy the components—collectors, heat exchangers, pumps and control elements—pretty much off the shelf. But he'll have to design and size the complete system

himself. He'll have to provide all guaranties above and beyond the individual components. And he'll have to risk marketing a house that, despite its energy-saving potential, is expensive and unfamiliar to most buyers.

So it's exciting when builders like the one you'll read about on page 86 take the plunge and put solar-heated houses on the market.

And as such pioneer efforts prove successful, it is important for the homebuilding industry to be ready to help take the next steps. We think that these will be among the most important:

- Persuading lenders to take the lower operating costs of energy-efficient houses into consideration in qualifying buyers. Otherwise many people just won't be able to afford the inevitably higher prices.

- Persuading municipalities *not* to include the extra cost of energy efficiency when they assess new homes. It doesn't make sense to penalize people for something that helps not just them, but the economy and the country as well.

Finally, we'd like to put in a good word for HUD, which doesn't get many these days. Without HUD's grants to builders who are doing the pioneering, the widespread use of solar energy would be nowhere near as imminent as it is today. Sure, there will be some ripoffs and bureaucratic bungling; they're endemic to any government-funded program. But in this case the good seems to far outweigh the bad. And there's no other way most builders can afford the upfront development costs that solar heat still requires.

—M.C.H. Jr.



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HUD tilts toward the cities

Mrs. Harris pledges 'new beginning' in drive to rebuild urban America

Housing Secretary Patricia Harris intends to spend most of her time and give most of her attention these next four years to the nation's cities. HUD, she told the House subcommittee, has been chosen by President Carter to launch "a new beginning in the realm of housing and urban development."

The agency and the cities will become partners, she said, and HUD will become the cities' national advocate.

The significant new domestic initiative in President Carter's first legislative proposals to Congress is an "action-grant" program under which—if Congress approves—Mrs. Harris and her aides will choose among cities to share \$400 million in grants each year.

Hand in hand with the action-grant proposal goes a campaign to stimulate private investment in the older cities. To an Atlanta audience, Mrs. Harris quoted Anthony Downs of the Real Estate Research Corp., the housing think tank in Chicago:

"Federal funds alone—and even all public-sector funds together—have little chance of stimulating effective community development unless they are used as a catalyst to attract large amounts of additional resources from the private sector."

More grantsmanship? Chairman Thomas Ashley (D., Ohio) of the

House housing subcommittee asked whether the action grant was not simply a new categorical-grant program. His implication: the beneficiaries would be those cities most skilled in the grantsmanship that paid off so well for New Haven, Boston, Philadelphia and Chicago in the riotous 1960s.

Mrs. Harris said the new grant would not be a return to urban renewal or the like. She said cities would propose specific inner-city projects that would

boost employment, housing and business development—or projects designed to keep employers from leaving a city for the suburbs.

One congressional expert suggested that the action grant might have a better chance now that the more prosperous cities and the suburbs are sure of getting their own slice of the federal bonanza via the block-grant program.

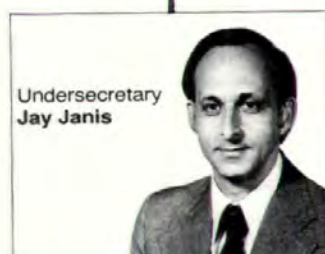
Restyling the Ford. The other Harris-Carter proposals are, for the most part, modifications, enlargements and liberalizations of the programs inherited from President Ford and Secretary Carla Hills.

For low-income families, Mrs. Harris seeks spending authority to build more Section 8 and Public Housing units than the 126,000 a year in the Ford budget. She would start 149,000

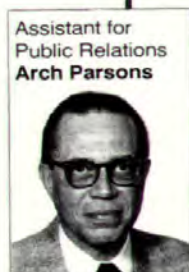
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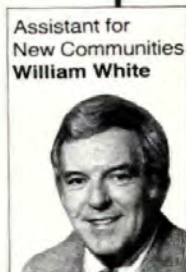
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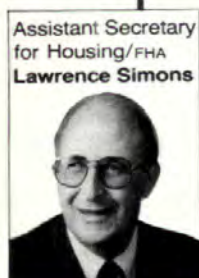
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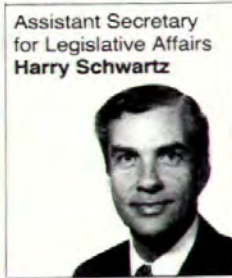
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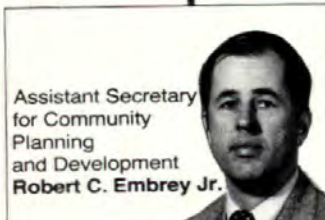
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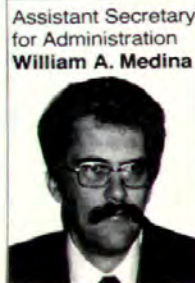
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new units under Section 8 in fiscal 1978 and rehabilitate another 23,000.

One proposal would pay Section 8 landlords the rent on an empty apartment for up to a full year. This, Rep. Fernand St. Germain (D., R.I.) suggested, was "essentially getting back to Section 236," the scandal-ridden program that President Nixon stopped in its tracks.

\$75,000 FHA mortgages. For middle-class families, Mrs. Harris proposes to boost the maximum mortgage amount insurable by FHA to \$60,000 (and as high as \$75,000 for four-family units in high-cost areas). She would lower the down payment on a \$47,000 house, for example, to \$1,850, or 3.9%, instead of the \$4,150, or 8.8%, under existing law.

Mrs. Harris says she wants to improve the Section 312 rehabilitation loan program—but that the \$70 million in carryover funds is enough. She wants to boost planning-grant funds back to \$37.5 million. She also wants to liberalize the Section 245 program,

which permits FHA insurance for some variable-rate mortgages. She would boost the money available for urban homesteading to bring 3,000 units into the program.

Housing in the cities. The housing that interests Mrs. Harris is housing for the poor and for moderate-income families in the cities. She told the subcommittee that the new \$400 million in action grants "will be restricted to cities that have successfully provided housing for people of low and moderate income, and have a proven record of providing equal opportunity."

She also makes clear that she wants stricter accountability from the cities in carrying out the housing programs to which they commit themselves in their housing-assistance plans. Such housing, she says, "is the highest priority of the block-grant program and we in the federal government must see to it that . . . the program serves that objective."

When Mrs. Harris spoke of the cities' housing-assistance plans, she

said there would be "continuous monitoring" by the department's bureaucrats. They would not be "heavy handed," she said, but "informed and responsible."

While Mrs. Harris did not say so, she obviously was inclined toward the view of Rep. St. Germain, who said that many of the cities' housing-assistance plans "were a sham."

The party line. Rep. Gary Brown (R., Mich), an architect of the 1974 block-grant program and housing law, wondered whether HUD was returning to the era of "second-guessing" local officials. This, he said, was mostly ended when Congress, "after a long, hard battle," adopted block grants.

Listening to Mrs. Harris, the Republicans could well be on guard against the Carter Democrats recreating modified versions of the housing and urban policies that the Nixon-Ford administration had hoped they were stomping out for good.

—DON LOOMIS

McGraw-Hill World News,
Washington

Builders take over big jobs in HUD

Homebuilders and mayors screamed over Carter's choice of Patricia Roberts Harris as Secretary of Housing and Urban Development but they're all smiles over her selections for top jobs at HUD.

The builders placed two of their own at Mrs. Harris's right hand:

Undersecretary Jay Janis, 43, a Miami developer before selling out to take a management job at the University of Massachusetts, and Assistant Secretary for Housing Lawrence Simons, 52, a major developer on Staten Island, in New York City.

The third top job went to Robert Embrey Jr., 40, who has earned a national reputation since 1968 by guiding the redevelopment of downtown Baltimore. As assistant secretary for community planning and development, he will take charge of the \$3.5-billion-a-year block-grant program, the housing-assistance plans that go with it, and the proposed \$400-million-a-year action-grant program—if Congress goes along.

Teamwork. The three officials are responsible for most of the department's programs and for virtually all of its \$8-billion budget.

Janis will administer activities department-wide. Mrs. Harris is a strong advocate of action in the city and urban programs, and she and Embrey will team up to direct block grants, housing-assistance plans and the action-grant program.

This will leave Janis and Simons to run the subsidy programs and the FHA—and to influence recommendations to Congress in both areas.

The Janis record. Janis knows building. His family's company, Janis Corp., had been building in the Miami area for 25 years when Janis sold out in 1970 for \$5 million in stock from MGIC Investment Corp. in Milwaukee. He stayed with the company until 1975.

Janis then served as an adviser to Governor Reuben Askew, of Florida, and he was an assistant to Robert Weaver, the first secretary of housing, from 1966 to 1969. For the last year, at the University of Massachusetts, he has worked for Robert Wood, who was undersecretary to Weaver and—for the first 20 days of 1969—secretary of HUD.

Janis has been active in the National Association of Home Builders as an adviser to the executive committee on

land-use policy. One NAHB official noted, "It's the first time we've had a builder in the number two spot."

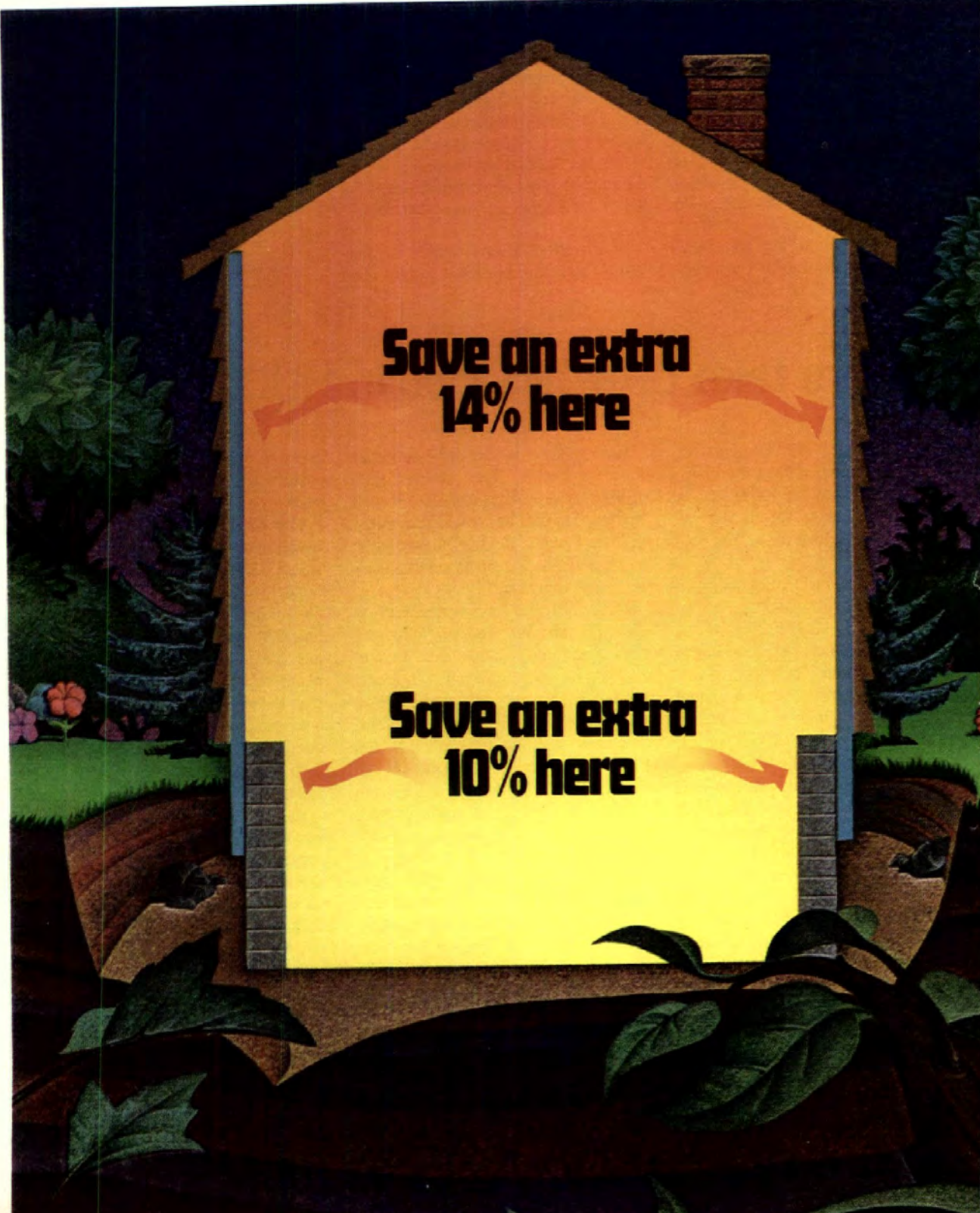
The Simons resumé. Simons, as president of LBS Construction Co., has been a builder of one- and two-family homes on Staten Island at the rate of 100 a year; his total since 1967 is more than 600. The company has been in land development, high-rise apartments and commercial and office buildings. He's been on the board of a bank, a mortgage-banking firm and New York State's Urban Development Corp.

He, too, has been a wheel in the NAHB. He led the fight against the no-growth movement as chairman of a land-use task force and of the association's sensible-growth committee. He has served on the board of the National Housing conference.

A woman as counsel. The new general counsel in HUD is Ruth Prokop, 38, of San Saba, Tex. She has been the senior counsel to General Telephone & Electronics Corp. in the District of Columbia. She practiced law for four years with the Washington law firm headed by Phil Brownstein, a former

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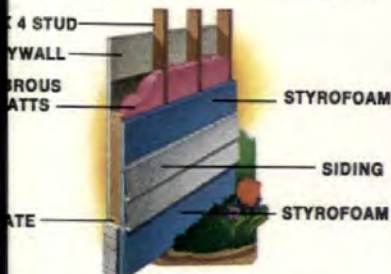
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STYROFOAM brand insulation also enhances the insulating effectiveness of batt insulation by keeping the wall cavity warmer.

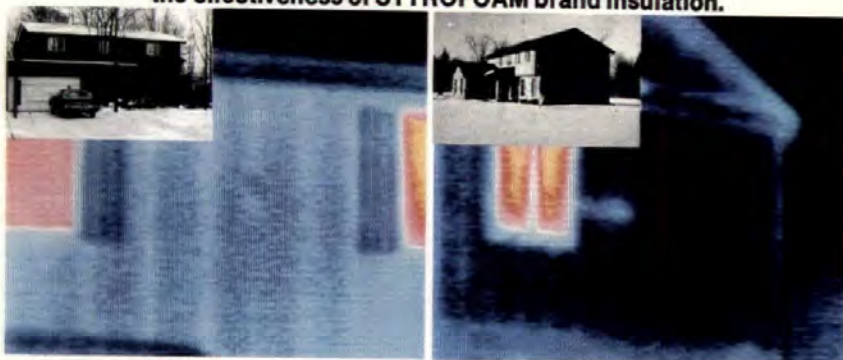
A warmer cavity reduces the "convective loop" (shown in the drawing) that can develop when the outer wall surface is cold and the inner wall surface is warm. "Looping" greatly reduces the effectiveness of batts as thermal barriers.



STYROFOAM brand insulation adds little to the cost of an average new home. Depending on where you build and your fuel costs, it can pay for itself in as little as one to three years—and keep on paying dividends over the life of the home.

For more information on how STYROFOAM brand insulation can help make lower heating bills a sales tool for you, contact your local salesman. Or write: The Dow Chemical Company, STYROFOAM brand insulation, Midland, Michigan 48640.

Infrared photos demonstrate the effectiveness of STYROFOAM brand insulation.



The demonstration involves two Midwestern homes insulated with conventional batts. The house on the right was additionally insulated with one-inch STYROFOAM brand insulation sheathing, while the house on the left was sheathed conventionally.

In the photo, the dark areas indicate heat retention and the light areas heat loss. As you can see, the house insulated with STYROFOAM brand insulation showed a considerable reduction in heat loss. Naturally, this can be translated to a comparable saving in heating costs.

[†]In a test in Columbus, Ohio—designed and conducted by Ohio State University—two identical side-by-side homes were insulated with conventional batts. One was additionally insulated with one-inch STYROFOAM brand insulating sheathing, while the other was sheathed conventionally.

Over a one-year period, the home with STYROFOAM brand insulating sheathing showed a 14% reduction in heating cost. This saving, plus a 10% saving with STYROFOAM brand insulation outside the foundation, results in a total saving of 24%. Test results available on request.

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FHA commissioner. She was a special assistant to Robert Wood when he was at HUD.

The assistant secretary for consumer affairs is a nationally known Catholic activist of the inner cities, Monsignor Geno Baroni, 46. As president of the National Center for Urban Ethnic Affairs, he has had a budget of \$1.7 million to help citizens' groups in 45 cities save and revive their neighborhoods. At HUD he will be in charge of the mobile-home standards program and inter-

state land sales as well and he will have a role in programs for the elderly, the handicapped and the Indians.

And another for policy. The assistant secretary for policy development and research is Donna E. Shalala, a professor at Columbia University in New York City. She has specialized in urban finance and government.

The new HUD lobbyist is Harry Schwartz, assistant secretary for legislative affairs. He's a Harvard graduate and has held staff jobs on Capitol Hill.

He was most recently the task force director for the Carter-Mondale campaign.

The assistant secretary for fair housing and equal opportunity is Chester C. McGuire, a New Yorker who has been teaching at the University of California at Berkeley.

The assistant secretary for administration is William A. Medina, a longtime bureaucrat and management systems expert for the Office of Management and Budget. —D.L.

Budget: A Ford gassed up by Carter

Spending is up, as might be expected from a new Democratic administration submitting its first budget request for the Department of Housing and Urban Development.

The new secretary, Patricia Roberts Harris, told the House housing subcommittee that the department, under her predecessor Carla Hills, "was meeting numerical goals but not actually producing the units represented by the numbers." Mrs. Harris vows that more spending authority and a new drive to produce results will "enable us to achieve the department's goals."

"I came to HUD and found a program that seems to produce housing reservations but not actual housing starts," Mrs. Harris told a House appropriations subcommittee from which she sought the funds to carry out the Carter/Harris budget proposals.

Subsidies: \$24 billion more. In fact, Mrs. Harris and the Carter White House were unable to make but minor alterations in the HUD spending program Ford handed Congress in January. But the total budget numbers did take a big jump. Mrs. Harris told President Carter during White House budget meetings that HUD is "a starved department."

The Carter/Harris amendments to the budget that President Ford submitted in January would boost HUD's spending authority for fiscal 1977 from \$20.7 billion to \$36.2 billion, and for fiscal 1978 from \$29.8 billion to \$39.3 billion. But the biggest increases—totaling \$24 billion—are the estimated runout costs over their contract life of 20 to 40 years.

Actual spending for the current fiscal year, 1977, and fiscal 1978, which begins October 1, would rise only

House's Boland
Suspicious about HUD's figures



slightly. For this year, spending would be increased only \$111 million to a total of \$8.1 billion. For next year, Ford's budget would be increased by about \$100 million, from an original estimate of \$8.9 billion to a new estimate of \$9 billion.

400,000 Section 8 units. Secretary Harris says that the new spending authority is necessary to get an increase in dollars actually spent to build or rent units for low-income families in the cities and towns. But the budget shows that it takes months or years before the dollars are pushed through the bureaucratic pipeline to the point at which the intended beneficiaries actually get help.

Thus, Mrs. Harris stressed that she was requesting funds to boost "reservations" made by sponsors and developers to add 94,000 units of new and rehabilitated housing to the Section 8 subsidy program. This would bring the total reservations to 400,000.

However, questioning of Mrs. Harris by Chairman Edward P. Boland (D., Mass.) of the appropriations subcommittee indicated his suspicion that a large percentage of the reservation might be only "paper reservation." That is, much of the reservation is an

earmarking of subsidy authority sought by a local developer from a local HUD office—even though the developer might have little intention of actually building the housing. Boland noted that despite nearly half a million reservations reported by the Ford administration, there were only 55,000 construction starts through December 1976.

More public housing. Among the other HUD increases sought, which will be part of a supplemental appropriations bill amending the fiscal 1977 budget for the department, are:

Additions to the operating subsidies for public housing, bring the totals up to \$595 million in fiscal 1977 and \$665 million in fiscal 1978; a request for \$37.5 million for planning grants, a program that the Nixon and Ford administrations had tried to phase out; and \$500 million to bring the community development block grants up to \$4 billion in fiscal 1978.

FHA's \$9-billion loss. One HUD request that got little public attention was for a \$1.8-billion appropriation to "restore losses to the Federal Housing Administration insurance funds."

Mrs. Harris pointed out that cumulative losses from insurance claims on 694,945 units down through the years have amounted to \$9.3 billion. The department has Treasury loans of \$4.9 billion still outstanding, and the interest on these loans for 1976 alone was \$301 million.

The only budget item of the Ford administration deleted by Mrs. Harris was a \$200-million request for the bicentennial land heritage program that was, she said, an "overtly political pre-election promise" she was not about to keep. —D.L.



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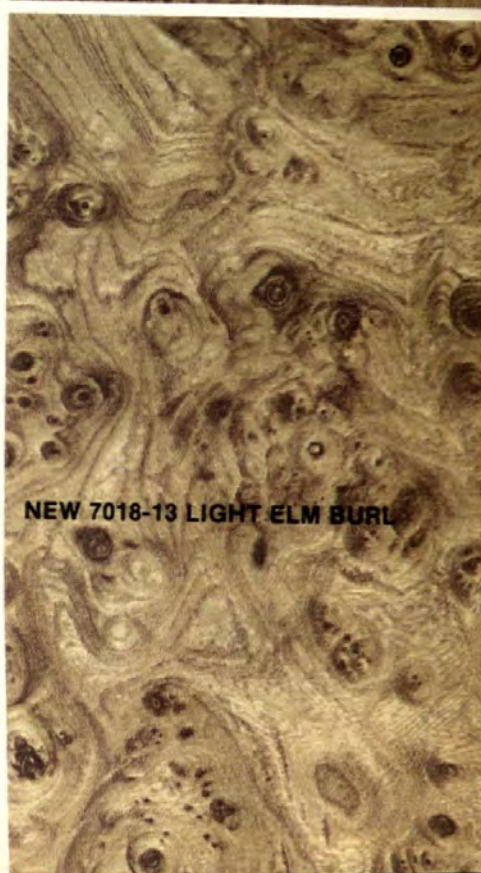
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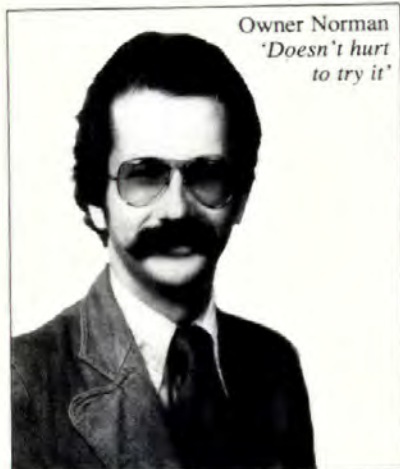
Lottery cuts apartment utility bills

One apartment complex owner in suburban New Orleans has devised a novel scheme for keeping the apartments' utility bills down, and his tenants are ecstatic over it.

Ernest Norman, owner of the Chateau Cleary apartments in Metairie, pays his tenants to use less electricity than they used the year before.

Chateau Cleary, with 104 one to three-bedroom apartments, has a central meter. Three years ago its utility bills were rising so fast that Norman decided something had to be done.

"I tried everything I knew about,"



Owner Norman
*"Doesn't hurt
to try it"*

he said. "I tried working with the utility company, better insulation, reasoning with the tenants. Nothing worked.

"But then money worked," he explained.

The winner's share. In January of 1974 Norman told his tenants he would try an experiment. He would compare each utility bill with the bill for the same month a year earlier. If the new bill was less, someone in the complex would receive a credit on his rent.

For three years Norman has compared monthly bills with those from the previous year, and he has worked out the rent credit this way.

"We divide the bill by the number of days in that month," he explained. "Then we multiply that daily average by 30 for a monthly average."

"If that amount is less when com-

pared to last year's monthly average, we divide the saving in half. We draw from a hat with all the apartment numbers inside. I keep half of the profit and give the winner half."

Over the three years, utility bills and electric usage have been decreasing.

Old ideas disproved. "When I went to Louisiana Power & Light for help when the bills were high, they told me that as the complex grew older, electricity usage would increase," Norman pointed out. "They said that as the complex aged, there would be more cracks between doors and that the buildings would not operate as efficiently."

"But were that true, we should be using more electricity now than when the complex was new. Tenants have been using less."

In Chateau Cleary's first two years, electricity bills rose by \$4,500. In the first year of Norman's lottery, they fell by \$653.

"Some tenants would never admit that the money led them to conserve energy, but I knew it had worked," he said. When he continued the program into 1975, he saw a decrease of \$1,273 from 1974 in his utility bills.

"In 1976 we were about \$168 more, but that's because of a cold winter," he said.

Killing the watts. A test meter was put on the lines at the complex, Norman said, and the findings proved his program was reducing usage. In 1972 and 1973 the tenants were using approximately 5,999 kilowatt hours daily. For the last three years they have used an average of 4,659.

When Norman told officials of LP&L about the lower bills, he said, they wanted to attribute it to milder summers. "But I know the reason for the decrease, and it's money."

No other apartment complex owners in the New Orleans area have tried Nor-

QUOTATION OF THE MONTH

"It will mean nothing to re-build our cities' downtowns without anyone to live there . . . Housing for our cities is fundamental—for the old, for the blind, for the working couple, for all kinds of people of all incomes. A diversity of housing to shelter a diverse and strong population means a strong and growing city."

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GOLDSMITH
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Improvement
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in San Francisco,
Feb. 5.



man's scheme, but he contends it would work in any apartment complex—at least for a while.

The lessons. "It doesn't hurt to try it," he advises. "Just announce it on a temporary basis first, like I did."

"Sooner or later it will stop working because the bills will reach a minimum, then I'll think of something else."

Chateau Cleary's tenants are still enthusiastic, says Mrs. Nancy Horlson, the manager: "I know the program has worked because I hear the tenants talking. This has given them an incentive to cut down, and they have."

The tenants don't save money every month now, Norman concedes, but they don't waste much electricity either.

JOYCE DAVIS ROBINSON
McGraw-Hill News,
New Orleans

Sorry, Messrs. Jordan

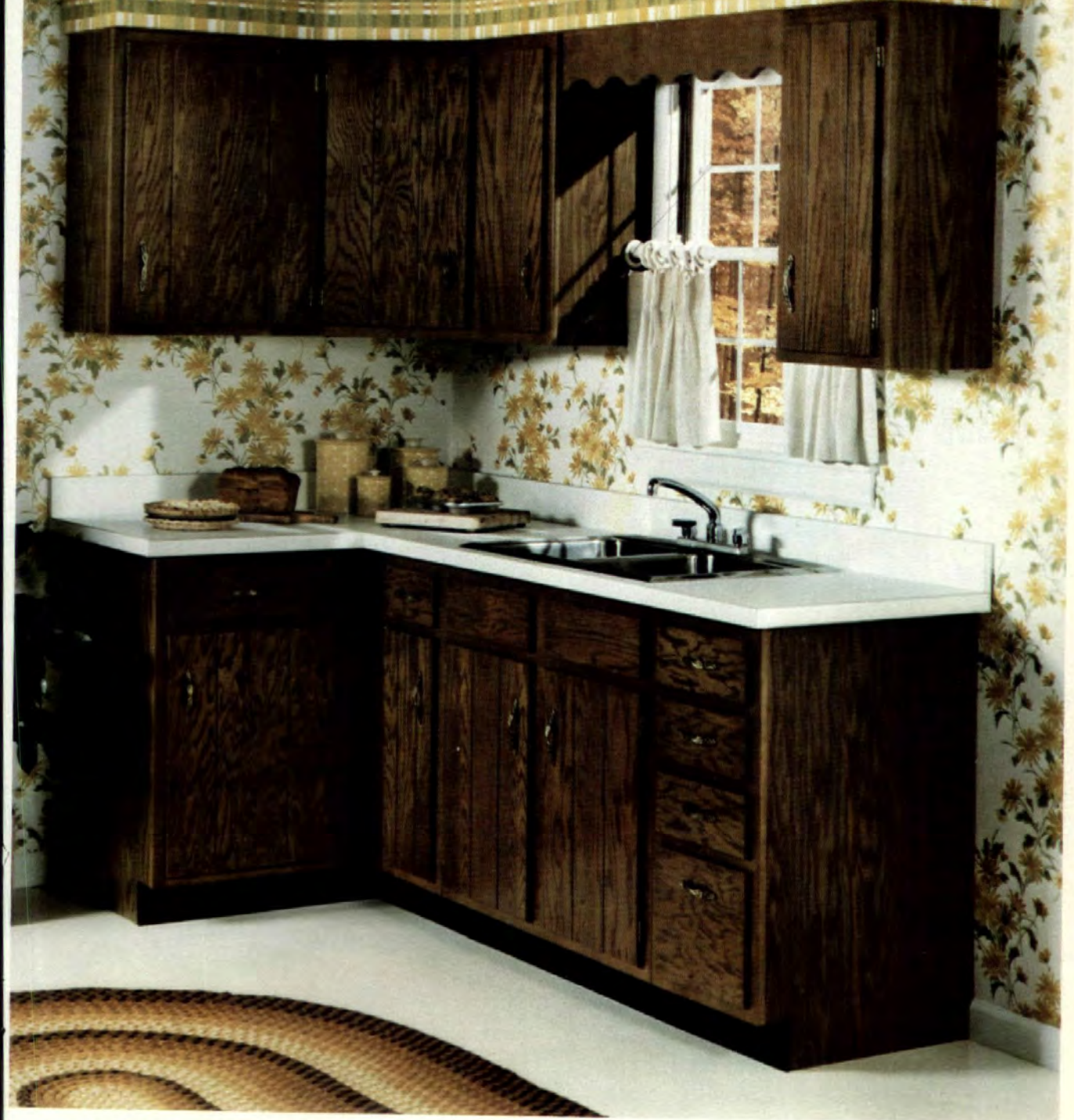
A photo appearing in an article entitled "HUD job? Not for me," in *HOUSE & HOME*'s February issue was mislabeled as that of Vernon E. Jordan Jr. of the National Urban League. It was in fact a photo of Jack Jordan, a Group W television producer in New York City.

Vernon Jordan appears at right. He is the league's executive director.



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U.S. Home gets new chief, new unit

The torch has been passed at U.S. Home—at long last.

After going nine months without a president, the big builder reached into the ranks of its loyal alumni and tapped Guy Odom, 45.

Chairman Charles Rutenberg and an operating committee headed by the former corporation counsel, Robert Strudler, made the choice. Odom takes over the chief executive's post as well as the president's chair at company headquarters in Clearwater, Fla.

In signing Odom, who fills the slot left open by Ben F. Harrison's resignation last June [H&H, July '76], U.S. Home also acquired the company Odom founded after leaving U.S. Home's Texas division in 1973.

The company, Homecraft Corp., builds single-family houses in metropolitan New Orleans and in Texas. Privately held, it netted about \$1.7 million on revenues of \$48 million and deliveries of 1,200 homes for the year ending Feb. 28. U.S. Home paid one million shares of its common, which closed at \$7 on the N.Y. Stock Exchange the day of the deal (February 18). The stock eased off slightly, to \$6.87, in the next three weeks.

Reverse takeover? Wall Street analysts and company executives were reluctant to term the arrival of Odom (and his Homecraft team) a takeover, but they contended that his quick ascension—at the very least—demonstrated that he should not have been permitted to leave the company in 1973.

Odom's relationship with U.S. Home began in 1971, when he agreed to merge his Norwood Homes of Houston into the larger company's operation. Odom became head of U.S. Home's new Texas operation, but he resigned in March 1973. With several Norwood execs who followed him, he formed Homecraft.

The takeover of U.S. Home, if it is such, is generally viewed as favorable to the company. There was reportedly no dissent among U.S. Home directors over Odom's appointment. Wall Street analysts see it as "a good deal," and Tim Jones of Faulkner, Dawkins & Sullivan, a New York securities firm, sums up:

"If nothing else, Odom's appointment resolves the situation in a good way."

Analysts, says Jones, are hopeful that Odom will continue Ben Harri-

son's policy of "running the company on a return-on-assets basis wherein the managers who were carrying surplus land were penalized for it."

Mr. Low Key. Odom maintains such a low profile that he refuses to release a picture of himself to the press. U.S. Home's brand new vice president and communications director, Herbert Ehlers, speaks for Odom and says yes, Harrison's policies will be continued.

The attempt to bring Odom and his company into U.S. Home began, according to Rutenberg, as far back as 1974.

"Contrary to the rumors," Rutenberg insists, "I led the move. I wanted him and his then fledgling company back at U.S. Home long before we even had need of a president."

The powerhouse. Rutenberg and Robert Winnerman, U.S. Home's founders, split up in 1973 and Winnerman retired [H&H, June '73]. Rutenberg has wielded the power at U.S. Home ever since, and few analysts see him fading quietly into the background now. They feel, however, that Odom's reputation as a hotshot builder and his old association with Rutenberg will strengthen his hand.

Adds Carmine Muratori of Blyth, Eastman, Dillon: "Charlie's right there. And he'll be right there until he feels comfortable with his new management."

"Harrison, after all, was known as an organizer. He wasn't a builder. But Odom is a builder—a darn sharp one."

Even Winnerman, when reached at home in Short Hills, N.J., was optimistic about an Odom presidency.

"Guy Odom is good," he said. "Homecraft is a strong company and Odom has talent. He brings good people with him and he'll use them. Most importantly, he won't rock the boat."

"There won't be any immediate—and great—leap forward. I don't think anyone expects big changes in policy for at least a year."

The Odom team. In addition to the "solid team" he finds entrenched at U.S. Home, Odom brings three former Homecraft (and U.S. Home of Texas) execs with him. George Matters, 34, continues as president of the Homecraft division and becomes a corporate group vice president. Virginia Stead and Harland Smith are senior vice presidents.

In an unrelated change, Ehlers, 32,

replaces Ross Stemer as director of U.S. Home's corporate communications. Stemer, who suffered a "mild" heart attack in November, has resigned, the company says. Ehlers, who takes on the title of corporate vice president, is to assist Rutenberg and Odom in strategic planning and analysis. Ehlers was formerly a vice president of Parker/Hunter Inc., an investment banking firm in Pittsburgh.

The spoils. Besides picking up 550,000 shares of U.S. Home common in the Homecraft transaction, Odom gets a three-year contract at \$150,000 a year. He purchased 134,078 shares of the U.S. Home stock, worth \$1,078,154, (\$7.37 a share) for \$1 million. The purchase (\$13,407 in cash and the balance on a demand note) gives Odom 6.8% ownership of the company.

He takes over a company that reported revenues of \$327,008,000 and net income of \$4,218,000 in fiscal 1976. Earnings per share last year were 41 cents. It was not U.S. Home's best year but it was far better than 1975, when the company lost \$2,982,000 on revenues of \$308,246,000. Harrison had promised to turn the company around, and he did.

With Homecraft's \$1.7 million net added to its projected total, U.S. Home expects to report \$10 million in earnings for the year that ended Feb. 28—a gain of over 100%.

U.S. Home calls itself the nation's largest homebuilder. It hit its peak in 1973, the last year of the housing boom and of Winnerman's chairmanship. Revenues were \$291,246,000 and net income was \$12,499,000, or \$1.24 per share. Those totals were recorded despite a \$3,438,000 writedown from the company's ill-fated acquisition of the 3-H Building Corp. of Chicago, a development widely believed to have caused the split between Rutenberg and Winnerman [H&H, June '73].

—TOM ALLEN

CORRECTION

HOUSE & HOME'S NAHB convention story, appearing in March, reported erroneously that the NAHB board of directors passed a resolution requesting exemption of residential housing from consumer protection legislation. In fact, the resolution was withdrawn from consideration.



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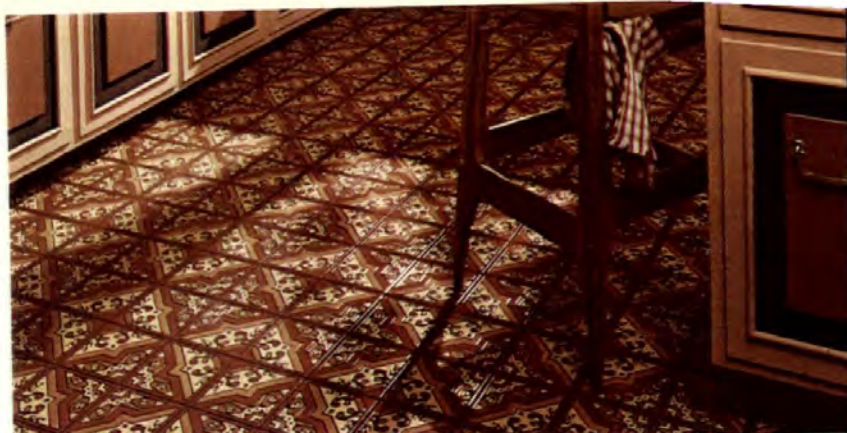
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John P. Woods, President
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Developers of The Heather Ridge Communities



Redman Industries loses a president

James Redman is alone at the top.

Lee Posey, 42, president and chief operating officer of financially ailing Redman Industries of Dallas, has resigned. His departure—for personal reasons, he says—leaves Jim Redman, at 56, in sole charge of his mobile-home company.

"Lee left," Redman said, "because there was a breakdown in communications between us and we disagreed on aspects of company policy." From his home in suburban Plano, Texas, Posey agreed with his former boss's assessment and added:

"It was simply time to leave."

He was the third Redman executive to leave within a span of six weeks.

No replacement. Redman, who moved his company from Michigan to Dallas 17 years ago, says he'll assume Posey's responsibilities for about four months. "At that point," he adds, "I'll decide if I want someone else or if I want to keep on. I suspect that we will probably fill the job—if we fill it—with someone already in the company."

Posey, who joined Redman after college as a plant materials manager, was named president in 1967 at age 32. His secretary, queried after his departure, said he seemed to have no outside interests.

"He just worked," she said. "His work was his whole life."

Now Posey says he will form his own building company in Dallas.

Money woes. Jim Redman's company was founded by his father, James Sr., in 1937 as Redman Trailer. It became Redman Industries in 1963. In addition to Redman Homes (formerly Redman Mobile Homes), the subsidiaries are Redman Building Products, Corporation R (mobile-home parks), Redman Development Corp. and Redman Properties. Only Redman Homes, Redman Building Products and Corporation R remain active, according to Redman's vice president of finance, Herbert R. Clifton. "The others are inactive except for land we still own and notes receivable."

The company's golden era, following its entrance into single and multi-family markets, came in the late 1960s and ended in the early '70s. Sales rose through 1973, and the company ranked fourth among mobile-home manufacturers and claimed 7% of the market.

But by the end of 1973, says Clifton, interest expenses were greater than in

the past due to a jump in short-term borrowing. The 1973 report said, "The net loss of discontinued operations increased significantly for the period ended Dec. 28, 1973. Operating losses in that period were \$5.5 million compared to \$2.7 million in the preceding year."

The report attributed the loss to construction-cost overruns and operations deficits in the company's apartment operations.

Restructuring. In September 1973 Redman halted its real estate projects and began selling off mobile-home parks, undeveloped land and its interest in apartment projects. In March 1974 the company entered a credit agreement with lenders. About \$25 million was converted into a long-term loan. Of

that, the company—by selling land, mobile-home parks and its interest in apartment projects—has repaid \$13 million.

For the year ending April 2, 1976, Redman had revenues of \$114,288,000 and a pretax loss of \$3,337,000. However, says Clifton, it had \$1,938,000 in income from discontinued operations. Clifton explains the last item's effect on the balance sheet:

"In earlier years, we had set up a reserve to cover anticipated losses on discontinued assets. We had more reserves than required, so we were able to report income of the \$1.9 million."

"In addition, we changed our depreciation from an accelerated basis to straight line, gaining \$1,507,000. So bottom-line net came out \$108,000."

The future. Jim Redman is guardedly optimistic. The winter's freeze hurt the company's Northeast operations "and we won't have a good quarter," he says. "But I'm real optimistic about the mobile-home business. Everybody is projecting about a 20% increase this year and we should do pretty well. I won't give out any projections, but I feel good about it."

—LORRAINE SMITH

McGraw-Hill World News, Dallas

Ex-President Posey
"Simply
time to leave"



NEMAN MARCUS PHOTOS BY GITTINS

Savings Bankers choose leaders

Norwick R. Goodspeed, president of the \$1.4-billion People's Savings Bank-Bridgeport, Conn., has been nominated as chairman of the National Association of Mutual Savings Banks, the trade organization of the \$135-billion savings bank industry.

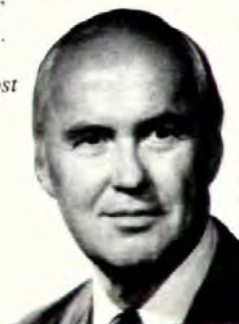
His nomination for a one-year term in the top elective post is scheduled for approval by the membership at the organization's 57th annual conference in San Francisco, May 15-18. Goodspeed

succeeds Edwin J. McWilliams of Spokane, Wash.

Charles A. Pearce, president of the \$217-million Quincy (Mass.) Savings Bank, has been nominated as vice chairman, and Vincent J. Quinn, chairman and chief executive officer of The Brooklyn Savings Bank, New York City, has been designated for a second term as treasurer.

Goodspeed is vice chairman of NAMSAB and Pearce is a board member.

Savings banks'
Goodspeed...
He'll take
chairman's post



...and Pearce
Incoming
vice chairman





ANOTHER REAL STANDOUT

The Leesport now joins the "CUSTOM LIMITED" group, Quaker Maid's cabinet program that offers fast, 4-5 week production. This new door style has a raised panel that really stands out. It's a custom paneled door without the high premium price tag. Beautiful cherry, pecan or stately oak are available. Leesport, Clarion, Monarch, Mayflower and Modulus II are all customized with Quaker Maid's exclusive

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McCulloch settles for \$16 million

In a move apparently made to square accounts while it phases out of land development, McCulloch Oil Corp. of Los Angeles pleaded guilty to 19 misdemeanor counts of criminal fraud in Colorado's 10th Judicial District Court on Feb. 22.

Only four days after the settlement, Robert P. McCulloch Sr., 65, the parent company's patriarch and chairman, was found dead in his home in Bel-Air, Calif. Initial reports attributed death to a heart attack, but the Los Angeles County coroner, Thomas Noguchi, said later the body contained barbiturates and alcohol. (Obituary below.)

The parent pleaded through its Denver land-development subsidiary, McCulloch Properties. The developer was accused by a district attorney, Joseph E. Losavito, and a special state prosecutor, Anthony Accetta, of making misrepresentations to buyers in the sale of lots at its Pueblo West subdivision in Colorado. The prosecutors charged that McCulloch sales personnel promised falsely that water would be provided from a certain source, that underground utilities would be supplied and that subdivision families would have easy access to specific schools.

Fines: \$19,000. McCulloch was fined \$19,000 with half that suspended, but it agreed to pay \$16 million for general improvements at Pueblo West.

President Robert P. McCulloch Jr. of the parent company accepted blame for any misrepresentation but contended

that "it is humanly impossible to monitor all aspects of sales presentations." He asserted that McCulloch Properties executives had no knowledge of any wrongdoing and that no company employees had been charged.

Loss coverage. When the parent announced last year that it was getting out of land development, it set aside a \$60-million reserve against anticipated losses [H&H, Dec.] Those funds will cover the Colorado settlement, the company says, so the subsidiary's financial statements won't suffer.

Pueblo West houses 3,000 residents. McCulloch Properties has other projects at Lake Havasu City and Fountain

Hills, Ariz.; Spring Creek, Nev.; Silver Lakes, Calif.; Holiday Island, Ark. and in Amarillo, Tex. The parent company said last fall that it would take five years to phase out of all projects.

Arizona improvements

The FTC has just announced a consent agreement requiring Flagg Industries Inc. of Los Angeles and a subsidiary, Queen Creek Land and Cattle Co. of Van Nuys, Calif., to spend about \$4.1 million to improve their three Arizona properties: Cordes Lakes, Verde Village and Valle Vista.

Developer Robert McCulloch dead

Robert P. McCulloch Sr., who was found dead at his home in Bel-Air, Calif., on Feb. 26 (story above), was

best known as the inventor of the chain saw and the man who brought London Bridge to Arizona.

Four companies founded by McCulloch still bear his name, the largest being McCulloch Oil. He was widely known as a land developer, and his major project was Lake Havasu City, an Arizona resort, built by McCulloch Properties on the Colorado River.

In 1968 McCulloch bought London Bridge for \$2,460,000, moved the components to Lake Havasu City and rebuilt it.

McCulloch was 65. He leaves his wife, Barbara; a son, Robert P. Jr.; and three other children.



Developer McCulloch
Built a city,
rebuilt a bridge

Levitt back in the black—first time since '71

Levitt & Sons Inc., the homebuilding company with headquarters in Greenwich, Conn., has just reported earnings of \$3.2 million for 1976. This is the first year of profitable operations since 1971.

Unaudited operations for the quarter ended Dec. 31 showed net operating profit of \$2.46 million.

The report said \$2.1 million of the year's profit and \$1.16 million of the profit for the last quarter was contributed by Levitt Corp., the homebuilding arm of Levitt & Sons. Levitt Corp. is being prepared for disposition as an operating company.

The earnings report was filed with

Judge M. Joseph Blumenfeld of the Federal District Court for Connecticut by Victor Palmieri and Co., court-appointed divestiture trustee for Levitt & Sons. The Palmieri firm was appointed in January 1975 to organize an operating company from the original Levitt & Sons, whose stock had been owned by the International Telephone and Telegraph Corp. [H&H, Apr. '75: "The Decline of Levitt & Sons."]

Divestiture. In 1971, ITT entered into a consent decree with the Department of Justice and agreed to divest itself of the original Levitt within three years.

When the divestiture had not taken

place late in 1974, ITT and the Justice Department agreed to the appointment of a divestiture trustee. Victor Palmieri & Co. is an asset-management firm with headquarters in Los Angeles.

Disposition proposal. The Palmieri report noted that on Dec. 31 it remitted to ITT, as proceeds from noncontinuing operations, \$24,446,853 in promissory and mortgage notes, \$47,600 in accrued interest on those notes and \$5 million in cash.

The trustee also noted that by June 30 it expects to submit to ITT, the Justice Department and the court a proposed disposition process for Levitt Corp.

"Our \$100,000 home buyers responded enthusiastically to Sears appliances"

Hal Magruder, Vice President, Golf Course Woods Development, Reston, Virginia

"Having sold Golf Course Woods homes equipped with Sears Contract appliances is a source of satisfaction," says Hal Magruder, "because it proves our conviction that today's luxury home buyer looks for quality and value as well as beauty.

"Buyers were delighted with the way the advanced styling and colors of the matching Sears range, dishwasher and refrigerator/freezer contributed to the distinctive decor and convenience of the kitchens. Many of the buyers completed their laundry rooms with a Kenmore washer and dryer.

"And, I believe the Sears name itself, its reputation for dependability backed by the convenience of having a single source to call for repair service

played an important role in their buying decisions."

The enthusiastic response of \$100,000 home buyers to Sears Contract Appliances adds to the 10 good reasons why you should consider Sears

for your next luxury home development:

1. Dependable service. 2. Contract sales specialists. 3. Product leadership. 4. Value/Price. 5. Single source for appliances and many building products. 6. Delivery to your schedule. 7. Strong brand recognition. 8. Product quality. 9. Kenmore. Solid as Sears. 10. Ninety years of consumer satisfaction.



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☐ Send address of nearest Contract Sales office

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 Position _____
 Firm _____
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 City _____ State _____ Zip _____

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 Sears Tower, Chicago, Illinois 60684

44-HH-4/77-GOLF COURSE WOODS

© Sears, Roebuck and Co. 1977

Kaiser Aetna venture comes unjointed

The split comes after nearly eight years of partnership that built a half-billion-dollar business in land development.

The parents, Aetna Life & Casualty of Hartford, Conn. and Kaiser Aluminum & Chemical Corp. of Oakland, Calif., are dividing the holdings of their joint venture. They had taken multimillion-dollar write-downs on Kaiser Aetna's assets last year [H&H, Dec.]. The partnership's net worth is now estimated at \$60 million.

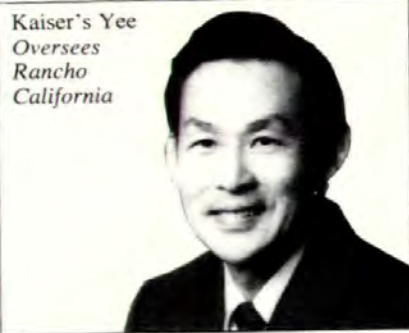
Kaiser's share. Kaiser Aluminum gets the Pacific properties. They include projects in Hawaii, Guam and Australia; Rancho California, a southern California development; and Kaiser Aetna's West Coast industrial projects.

And Kaiser Aluminum retains the partnership's marketable securities, its cash and its current president, K. Tim Yee. He'll manage the old Kaiser Aetna properties for the parent.

Aetna's portion. Ponderosa Homes operating in southern California, Arizona and the San Francisco Bay area, goes to Aetna. So do the McCormick Ranch, near Scottsdale, Ariz., and the partnership's shopping-center division.



Aetna's Galvin
Rides the
McCormick
Ranch



Kaiser's Yee
Oversees
Rancho
California



Launching of Kaiser Aetna as described in HOUSE & HOME in September 1969.

An Aetna senior vice president, John M. Galvin, supervises those properties.

The partners said little on parting. A joint statement announced that the split reflected "our belief that the assets

... can be managed more effectively separately." And an Aetna spokesman summed up:

"We're in industries with different economic cycles."

BRIEFS

A very good year—1976, that is. So good that the C.F. Bullock Co. of Danville, Ill. wanted employees to share the prosperity. So President Curt Bullock hauled all 350 to Hawaii for a week in the middle of the Big Freeze. The tab? \$220,000. The company prefabs houses and garages. Its annual gross has risen from \$7 million to \$24 million in five years.

A giant is born. Canada gets its biggest diversified real estate organization via merger between A.E. LePage Ltd. and Gibson Willoughby Ltd., both of Toronto. Gibson Willoughby is absorbed. The new company's offices stretch from coast to coast.

Merger vows are taken. Development Corp. of America, in Hollywood, Fla., and Zellner Communities Inc. of Newport Beach, Calif. combine in a joint venture to build



Hawaiian-bound team of the Bullock Co. of Danville, Ill., includes (l. to r.) James and Curt Bullock, Jack Odum and Joseph Lane, all at Chicago airport.

300 single-family houses in the San Diego area. It will take them three years.

A new REIT bows in. The Robino-Ladd Co., a Miami-based developer, forms Institutional Property Management, to be owned jointly with DACO S.A. of Zurich, a cor-

porate entity financed by Zurich's Rothschild Bank.

A new town, developed by a private builder, gets organized. The Colony Inc. has just been incorporated, out there on the Texas plains, by 3,500 citizens. It's being built by Fox & Jacobs north of Dallas.

INTRODUCING THE "AFFORDABLE FLOOR" FOR THE "AFFORDABLE HOME"

Now, give your homes the extraordinary elegance of GAF® GAFSTAR® with the Brite-Bond™ surface, at an extraordinary value.

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On top—the GAF Brite-Bond surface with its high-gloss, no-wax finish that resists scuffs and is practically maintenance free. (If desired, gloss can be restored in heavy traffic areas by

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Also, GAFSTAR 5400 Series is available in 6 and 12-foot widths. Which means less waste. Less seaming. Less labor. Lower cost for you. So throw in the extra features like a microwave, or the stainless sink.

And the "affordable floor" comes in stylish patterns you won't have to sell anyone on.

When you build the "affordable home", look into the "affordable floor". The GAFSTAR 5400 Series. You can't afford not to.

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we are.

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which have been a source of pride to
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You'll still find the complete
line of building supplies, including the
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Our name change will
simply tell you what you already
know, that in our company,
plywood is only the beginning.

Our new name will
remind you that we also
have a host of other products:
hardboard, particleboard,
Decolam® /hpt, Novoply® veneers, panel-
ing, siding, lumber, insulation, roofing.

All of which come to you from 45
manufacturing facilities, 56 sales
offices and 112 distribution centers.

So say hello to an old, old friend
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It says we're proud to be part of a major forest
products corporation, called Champion International.
Because it's time we shared the same great Champion
family name.

Now, watch us grow!



Champion Building Products™
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Rio's 4 guilty; Great Western to refund

Four executives of Rio Rancho Estates Inc. have been convicted of conducting fraudulent land sales aimed at enticing investors into buying 91,000 acres of semiarid desert for homesites.

Also convicted, after an 11-week jury trial in Manhattan Federal District Court, were Rio Rancho's parent, Amrep Corp., and a wholly owned subsidiary, ATC Realty. Both are based in New York City.

In an unrelated development, meanwhile, Great Western United Corp. of Los Angeles signed a consent agreement with the Federal Trade Commission to refund nearly \$4 million to 14,000 land buyers. The refund was the largest ever obtained by the FTC.

Guilty! The four Rio Rancho execs, each convicted on 25 fraud counts, are Howard W. Friedman of Hewlett, N.Y., president of Amrep and Rio Rancho; his brother Daniel of Manhattan, vice president of both firms; Chester Carity of Manhattan, executive vice president of both companies and president of ATC Realty; and Henry Hoffman of West New York, N.J., an Amrep director who held several executive positions with Amrep and Rio Rancho.

The four were sentenced to six months in jail each but went free pending appeal. Amrep was fined \$45,000.

Prosecutor Patricia M. Hynes told the jury the four officials had sold land to 45,000 buyers from 37 states for



Prosecutor Patricia Hynes
She wins over Rio Rancho

\$170 million. She said the Rio Rancho/Amrep execs had bought the land for about \$178 an acre and retailed it, for homesites, at prices up to nearly \$12,000 an acre.

The government's indictment alleged that the defendants bought up the "semiarid desert grazing land" near Albuquerque, N.M. in 1961 and subdivided it into 86,000 lots. The lots were

then sold for single and multifamily homesites as well as for commercial use. Regional television ads claimed the land would become a master-planned community.

'False and fraudulent.' To entice buyers, the indictment said, the defendants used several "false and fraudulent pretenses, representations and promises." There was almost no resale value for the land, the indictment concluded.

Defense Attorney Stanley Arkin maintained that Rio Rancho was a flourishing community with 7,000 residents who had invested \$100 million for homes, stores and utilities.

The big refund. In addition to agreeing to repay investors in land developments in Colorado, California and New Mexico, Great Western United will spend up to \$16 million on capital improvements to the three projects. The firm will also pay the federal government a \$50,000 penalty and will warn potential investors that land purchases may not be profitable.

The developments—in California City, Calif., Colorado City, Colo. and Cochiti Lake, N.M.—are run by Great Western Cities Inc. It's a subsidiary of Great Western United, a holding company controlled by the Hunt brothers, Nelson Bunker and William Herbert, both of Dallas.

The refund goes to investors who bought between Jan. 1, 1972 and Jan. 25, 1977.

The Homex Stirlings sentenced to prison

The brothers Stirling have had their day in court. It was a bad day.

David Stirling Jr., 43, former chairman of the Stirling Homex Corp., and William G. Stirling, 38, the company's ex-president, were convicted by a Manhattan Federal Court jury of conducting a fraudulent scheme involving sale of \$40 million in Stirling Homex stock.

Three other defendants, Harold M. Yanowitch, 56, of Braintree, Mass., former Homex executive vice president; Edwin J. Schulz, 42, of Lancaster, Pa., onetime company controller; and Rubel Phillips, 51, of Jackson, Miss., an attorney on a Homex retainer, were found guilty along with the Stirlings on all nine counts of the grand

jury's indictment [H&H, Feb.].

David Stirling was sentenced to one year in prison and fined \$10,000, and brother William was sentenced to six months and fined \$5,000. Yanowitch drew a one-year sentence and a \$2,000 fine and Phillips a 10-month term with a \$5,000 fine. Schulz received a suspended sentence because the judge found him less culpable; he was fined \$2,500.

Sentences were pronounced March 11 by Judge Marvin Frankel in the same court in which the defendants had been convicted six weeks earlier. All went free on bond pending appeal.

Bankruptcy. Homex stock was offered to the public in February 1970 at

\$16.50 a share. The price spiraled up to \$55 in the over-the-counter market before Homex entered bankruptcy proceedings in July 1972. Investors who had paid in \$40 million wound up with stock that federal prosecutors described as virtually worthless.

The prosecutors told the jury that the five defendants fraudulently inflated company earnings by including land sales at artificially high prices. And Prosecutors W. Cullen MacDonald and Angus C. MacBeth also charged that the Homex execs forged a \$15-million FHA mortgage commitment in order to sell housing modules to a shell corporation. The five were also found guilty of concealing special stock arrangements

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I have lots. My typical selling price is \$.

5 reasons to call Owens-Corning first when you want to build energy-efficient homes

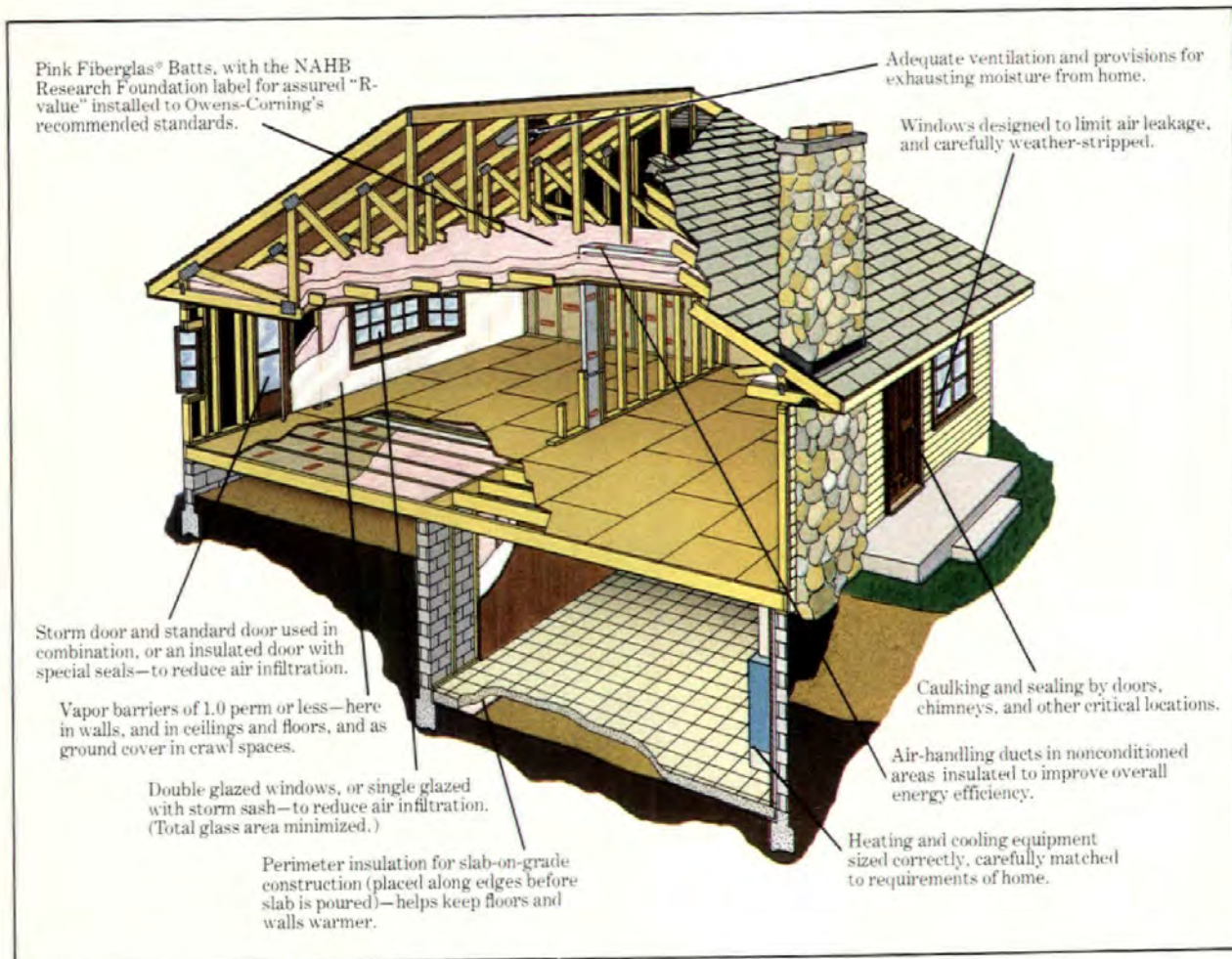
Owens-Corning is the leading manufacturer of insulation in America.

So Owens-Corning has accepted the *responsibility* of leadership in helping builders adapt to the energy crisis.

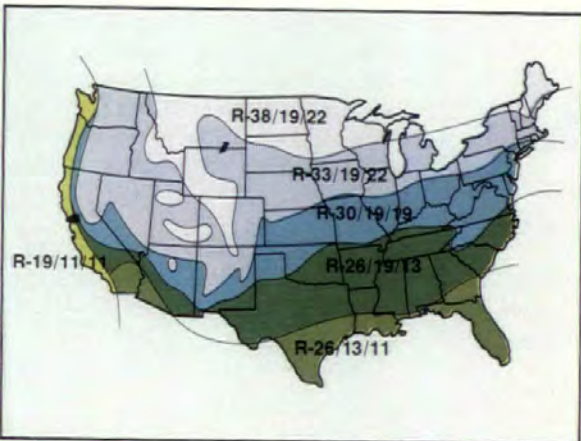
Here, on these pages, are five important ways Owens-Corning has tried to make it

easier and more profitable for you to offer energy-efficient housing.

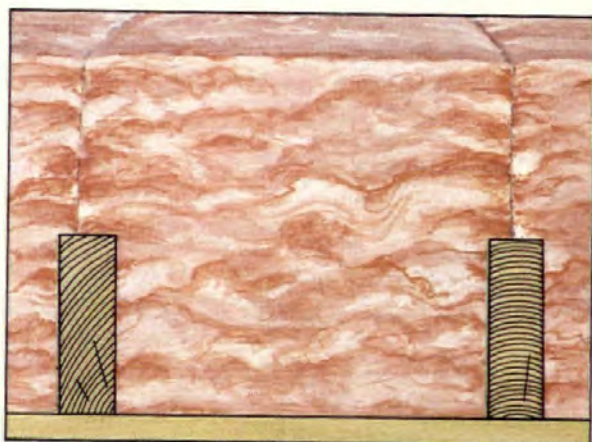
Look them over. Then, to get fast action regarding any of the ideas, go straight to the *source*. Call your Owens-Corning sales office, or write: I.K. Meeks, Fiberglas Tower, Toledo, Ohio 43659.



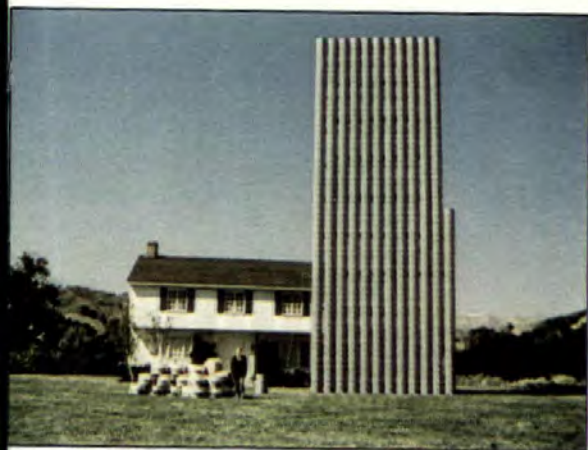
1 The Owens-Corning Energy-Efficient Home. This new program is a systems approach to energy saving. Homes built to these recommended 10-point specs are designed to cost *significantly* less to heat and cool—so they *sell better*. And they may not cost you any more to build than ordinary homes!



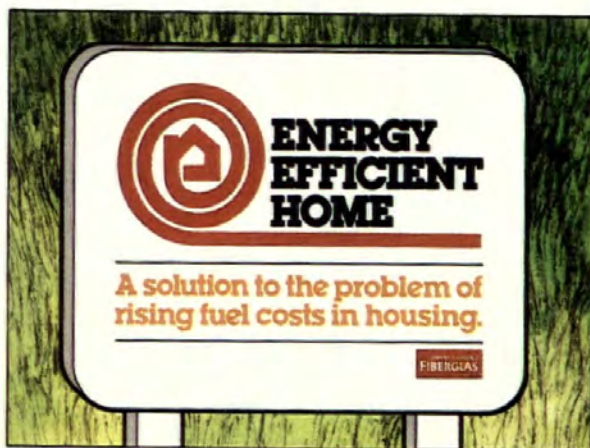
2 Owens-Corning recommended minimum insulation guidelines. These are conservative recommendations, by different climate zones in the United States, for *cost-efficient* levels of insulation.



3 New higher-R batts. Owens-Corning's new R-30 Fiberglas* batts—with the NAHB Research Foundation label for assured thermal performance—make it *easier* to meet new standards.



4 Massive television advertising. Owens-Corning's commercials bring you eager buyers for your well-insulated homes—and quick approval for the Fiberglas product you use.



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Builders on move: Irvine shakeup

The Irvine Co. shuffles execs.

Kenneth W. Agid fills the vacant marketing and sales vice presidency with Irvine Pacific Development Co. in Newport Beach, Calif. **Richard T. Bonetti** replaces Agid as associate director of parent Irvine's residential development division and **Gerald L. Rewers** becomes vice president of administration for Irvine Pacific, a new post. He had been director of operations.

Kaufman and Broad (Los Angeles) moves **Robert M. Galloway** to vice president of technical services. He's been the director of land engineering.

In Houston, **Julian Pugh** is named vice president of marketing for Superior Homes. He was advertising director.

Roger Acierno succeeds retiring **Charles M. Goldben** as president of Creative Shelters Inc. in Denver. Acierno has been Goldben's assistant.

Abe Stark becomes director of advertising services for Leisure Technology Corp. in Lakewood, N.J. He had managed the company's marketing services in the Northeast.

Cheezem Development Corp. of St. Petersburg, Fla., names **Ami Tanel** as vice president of operations and **Lee E. Stickler** as vice president of planning.

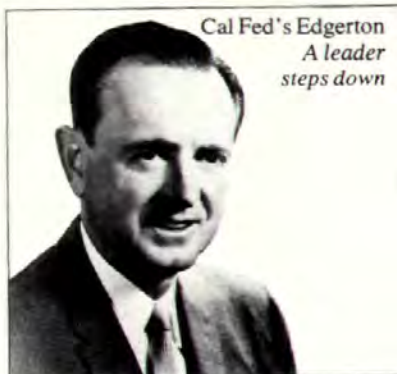
LENDERS: A senior statesman of the S&L industry retires on the Coast. He

Irvine's Rewers
New v.p.
for Irvine Pacific



is **J. Howard Edgerton**, 68, who founded giant California Federal S&L of Los Angeles during the 1930s, became its president in 1939 and later assumed the chairmanship. **Robert R. Docking**, 58, becomes chairman and remains chief executive. **Frederick T. Burrill** steps into the presidency vacated by Docking.

ASSOCIATIONS: The National Home Improvement Council elects **Ed-**



Cal Fed's Edgerton
A leader
steps down

ward A. More as president for 1977. He is the merchandising manager for Formica Corp., Cincinnati.

California remodeler **Mimi Ward** notches three firsts. Mrs. Ward, who runs John R. Ward Construction Co. of

Danville, Calif., with husband John, is installed as the first woman president of the Bonded Remodelers Council and the first woman member of the Associated Building Industry's regional board and of NAHB's rehab and remodeling committee.

In Chicago, **Mark F. Clark** is appointed director of news media services of the U.S. League of Savings Associations. He shares public relations duties with **Harry Pierson** and **Jim Kendall**. Clark, 32, was deputy press secretary to former Illinois Governor **Daniel Walker**.

DIED: **Thomas C. McMillan**, 74, founder of the McMillan Mortgage Co., of California, January 27 in Los Angeles.

At NAHB: A changing of the guard

Time passes. The guard changes.

So it is at NAHB headquarters in Washington as old-line staffers like Stan Baitz and Albert Manola prepare to cover worn typewriters for the last time.

The retirement of Nat Rogg and the advent of Bob Stahl as executive vice president opened a new era [H&H, Jan].

Baitz, 65, the staff vice president in charge of the public information division and a 23-year association veteran, eases into retirement in July. Before joining NAHB he was a newsman with the *Washington Star*, the defunct *Washington Daily News* and United Press International. He served the Office of Defense Mobilization during the Korean conflict and did time with a New York public relations firm.

His plans, Stan says, are "a little indefinite, but I'm lining up some projects."

Life as a treasure hunt. Manola leaves his post as editor and publisher of NAHB's *Journal-Scope* on October 1. He joined NAHB 19 years ago as executive editor of *Journal-Scope's* predecessor, *The Journal of Homebuilding*.

Manola, too, has a strong news background. He spent ten years as a telegraph and news editor for the *Washington Post*, as a reporter in the Scripps-Howard chain and as a staffer in UPI's Washington bureau.

Al plans to do full-time duty with a "treasure-hunting company I've got" in Key West.

"It's not as profitable as this job," he says, "but it's a lot of fun."

Soon—but not yet. Also slated for retirement "in about a year" is Charles McMahon, the NAHB's senior staff vice president and assistant to Stahl. Another former newspaperman (UPI), Charlie has been with the association since 1956.

Baitz, Manola and McMahon have all been familiar figures at the NAHB's national conventions and Washington meetings. They have been popular with an entire generation of newspaper and television writers the country over, several of whom are now making the same long march down the sunset slope themselves.

Time passes.

—T.A.

NAHB's Baitz...
Lining up
some projects



...and Manola
Off on a
treasure hunt





DELTA WASHERLESS FAUCETS.

An appealing touch people recognize.

When prospects visit a home or condominium featuring Delta Faucets, they inch a little closer to buying. Because they recognize the distinctive styling that sets Delta apart from all other kitchen faucets.

They know Delta works as good as it looks, thanks to its patented rotating ball valve that does away with washers once and for all. And to you, that means elimination of costly call backs that faucets with old-fashioned compression washers often create.

Home buyers recognize Delta's exclusive ball handle as a sign of kitchen glamour—and convenience. The handle turns easily on and off with a flick of the wrist or a nudge of the elbow. The desired water temperature and flow rate can be set with one simple movement.

The Delta Faucet story is an appealing one to every home owner. And millions

will be seeing this story throughout the year. On network television. In consumer magazines. And with sales promotion and publicity. It's additional evidence that Delta is the faucet to specify and install.

To see the full line of Delta and Delex Faucets for kitchen, bath and lavatory, write for our free literature.

DELTA & DELEX FAUCETS

No washers • No washer worries

Delta Faucet Company, Dept. G2, Greensburg, Indiana 47240.
A Division of Masco Corporation of Indiana.
© 1977 Copyright, Masco Corporation of Indiana.

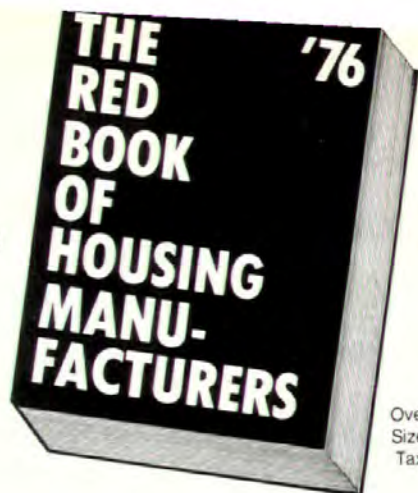
Circle 41 on reader service card



ANNOUNCES

An all-new Housing Industry Research Report THE RED BOOK OF HOUSING MANUFACTURERS®

A major research report
on industrialized housing
based upon hundreds
of detailed
individual reports



Over 250 Pages
Size: 8 1/2" x 11"
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A NEW APPROACH . . .

The RED BOOK identifies FIVE different types
of housing producers

- Pre-fab Home Manufacturers
- Modular Home Manufacturers
- Mobile Home Manufacturers
- Manufacturers of Building Components and Systems
- Production Home Builders who produce industrialized building components for their own use.

SORTS OUT THE CONFUSION . . .

which has plagued marketers and researchers as they try to assess the trends in industrialized housing.

GET THE FACTS YOU NEED . . .

to service this big, complex and HIDDEN segment of the housing industry.

The RED BOOK details WHO they are . . . WHERE they are . . . WHAT they produce . . . HOW they sell . . . and WHERE they ship . . . The information includes details on single family units, townhouses, multifamily units, mobile homes, and commercial/industrial buildings.

Data is given for all of the important markets across the country.

The Industrialized Housing Industry is big, complex, and **hidden**. It is hidden among thousands of firms, big and small. These companies, spread all over the country, produce a wide variety of housing products. Some—like those who produce mobile homes or pre-fab houses are easily identified. Others like homebuilders who manufacture their own components, require a marketer of building products to be constantly looking for new information. **Industrialized housing is too big and too complex to be surveyed with a quick glance.** THE RED BOOK OF HOUSING MANUFACTURERS has been designed to provide you with the detailed marketing research data you need. **It will uncover the "hidden" aspects of industrialized housing for you.**

HERE IN ONE BIG PACKAGE IS THE MARKETING INTELLIGENCE YOU NEED TO MAKE THE MOST OF THE EXPECTED UP-TREND IN HOUSING . . . It will help you recover lost ground in the months ahead.

In your hands the RED BOOK becomes a useful tool for prospecting, selling sampling, mailing, marketing, merchandising, researching and analyzing your position in this big segment of the housing industry.

These are just a few of the many profitable ways you can use the RED BOOK. In fact, just one good contact, can easily repay your investment.

CMR Associates, Inc.
1559 ETON WAY • CROFTON, MD. 21114

ORDER FORM

Phone: (301) 261-6363

A TAX-DEDUCTIBLE BUSINESS EXPENSE

YES! SHIP 1976 RED BOOK

Enclosed is my check (or money order) for \$____ payable to CMR Associates, Inc. Book(s) to be shipped prepaid with guarantee of full satisfaction or 15-day full refund privilege on return of RED BOOK.

☐ Payment enclosed to save postage & shipping charge

☐ Bill me

\$94.50

RED BOOK PRICE

NAME _____

TITLE _____

FIRM _____

ADDRESS _____

CITY _____

STATE _____

Please Check One:

- ☐ Builder
- ☐ Manufacturer
- ☐ Ad Agency/Consultant
- ☐ Finance
- ☐ Library
- ☐ Bldg Mfrs Sales Distributors
- ☐ Architects
- ☐ Subcontractor
- ☐ Realty
- ☐ Ind/Commercial
- ☐ Government
- ☐ Other _____



Nord's Orleans (1423) bifold doors.



"We've looked at plastics, metal, other wood doors. We think Nord bifolds are the best on the market."

Tom Davis
Marketing Manager
Interstate Homes
Salt Lake City

Interstate Homes builds 700 modular homes a year, \$17,000 to \$55,000. And you'll find Nord bifolds in over 85% of them. "We use Nord bifolds on linen closets, clothes closets, utility closets, even kitchen pantries," explains Tom Davis. "They reflect the overall quality of our homes and add to their salability."

Nord bifolds are made of Western hemlock because it's inherently stronger than woods such as pine. And they're $\frac{1}{4}$ " thicker than most other bifolds. They measure $1\frac{3}{8}$ ", instead of $1\frac{1}{8}$ ".

What difference does all this make? In terms of basic bending strength, Nord's $1\frac{3}{8}$ " Western hemlock doors are almost twice as strong (91.63%) as $1\frac{1}{8}$ " Western pine bifolds, according to independent research. (Source available upon request.)

"Our customers can feel the difference. And in the long run, Nord's thicker doors hold up better. In the modular business, we can't afford call-backs."

For details, write "bifolds" on your letterhead and mail it to E. A. Nord Company, Everett, WA 98206.



When you need
breathtaking windows,
start by making sure
they'll be ready
when you are

is to get acquainted with the company that makes more custom and modified standard windows than anybody else. Most of the windows we sell are right out of our catalog, but we build and ship custom windows with the same speed and efficiency. Most orders, including those with special sizes, true divided lites, non-standard jamb widths, etc., go out in a very short time. That's why you can count on Marvin for hundreds of double hungs or one breathtaking divided lite bay.

Write or call for literature and complete details. Marvin Windows, Warroad, MN 56763.

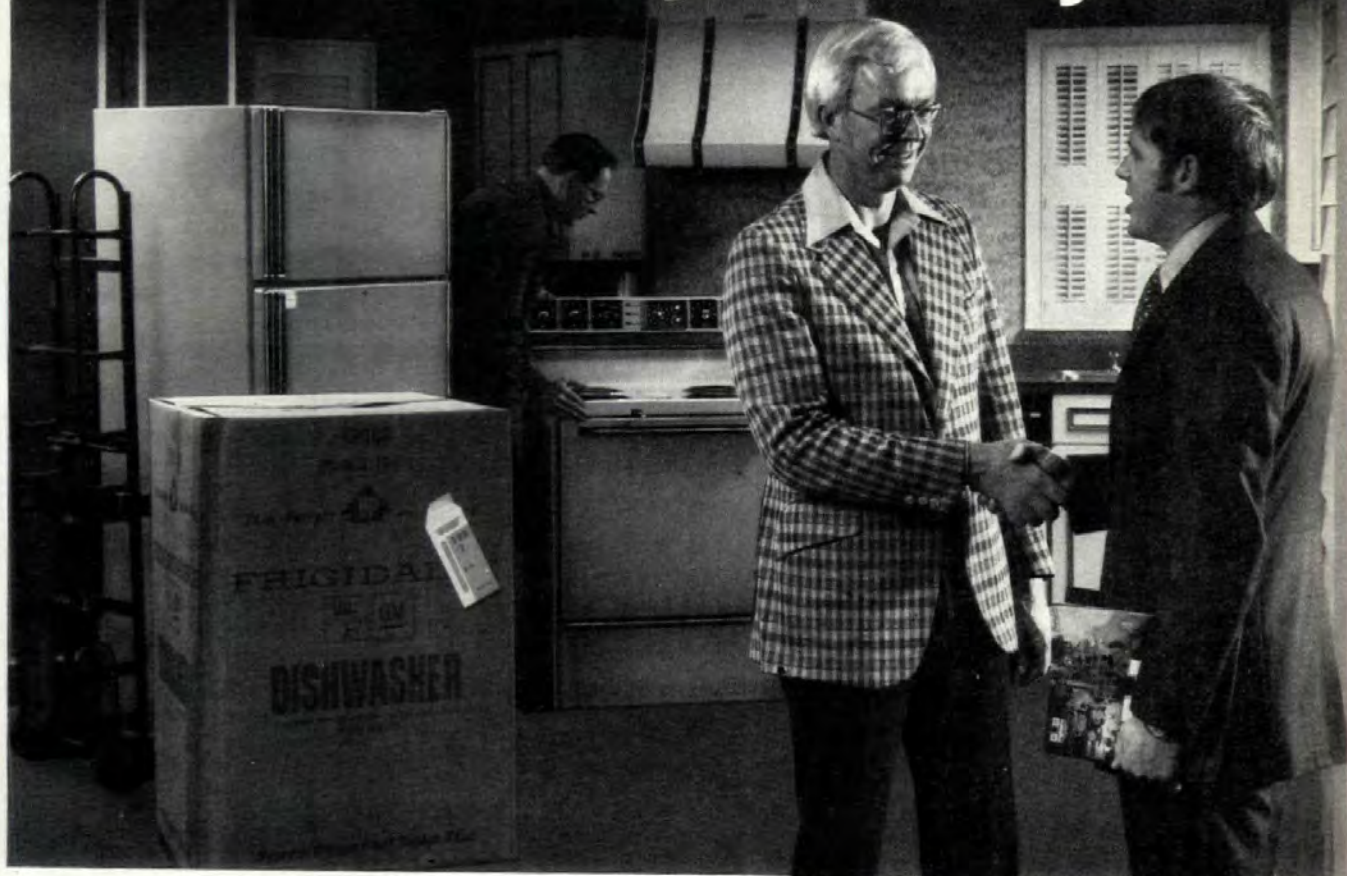
Phone: 218-386-1430.

Circle 44 on reader service card



**Marvin
Windows**

You can depend on Frigidaire appliances because the man who sells them depends on you.



One of the best reasons for you to add Frigidaire appliances to your kitchens? It's the man who sells them: your independent Frigidaire Builder Supplier.

You'll be dealing with an independent businessman like yourself, who lives and works in your own community. He owes his loyalty and his success to pleasing you and serving your interests better. What's more, he's extremely knowledgeable about your business, because it's his business to serve you more than just appliances.

Many Frigidaire Builder Suppliers carry complementary product lines associated with new construction such as lumber, millwork, plumbing and electrical supplies, supplementary appliances, kitchen cabinets and counter tops.

In addition, your Frigidaire Builder Supplier can perform all

the services you might need in connection with purchase, delivery, installation and service according to your individual needs. It's easier, less expensive and less time consuming for him to make any last minute changes you might require.

And he'll save you time, thanks to a large showroom that gives your customers easy accessibility to choose optional products and features that help them customize their kitchens. What's more, his inventory is backed up by Frigidaire's sophisticated ordering and regional distribution system.

Best of all, your Frigidaire Builder Supplier offers you a full line of Frigidaire appliances with a nearly sixty-year-old reputation for quality and dependability that can't help but complement yours.

To get all this and a lot more, think independent. And look up the Frigidaire Builder Supplier nearest you, soon.

Frigidaire, 300 Taylor St.,
Dayton, Ohio 45442
Attn: Housing Industry Sales

- ☐ I'm interested in becoming a Frigidaire Builder Supplier. Please advise me of available territories and necessary qualifications.
- ☐ Please have a Frigidaire Builder Supplier contact me.

Name _____

Firm Name _____

Address _____

City _____ State _____ Zip _____

Telephone _____



Frigidaire. A Heritage of Quality Since 1918.

The largest selection of plywood sidings is made by Champion Building Products.

Weldwood Sidings

Weldwood® sidings offer more ways for you to put the strength and durability of plywood on your homes. We're #1 in plywood siding sales. Because we've got the rustic appeal of natural timber that your customers want today.

When it comes to texture, Weldwood wrote the book: you can choose from Planktex®, the siding with the look of circular sawn wood; Oldbridge®, the siding that looks hand-hewn; or Roughtex®, with a rugged rough-sawn texture. You can pick a rough-sanded effect, or the full-grained appeal of an abraded wood.

What's more, you've got a choice of wood types: Douglas Fir, Southern Pine or Cedar. Many of which are available factory finished in your choice of 25 rich, wood-enhancing stains. Or, if you're planning to paint, get Duraply®. It's got a smooth resin-fiber surface that makes painting super easy (especially when you order it pre-primed).

Once you've picked the right surface, it's just the start.

Weldwood offers styles to fit any mood you want to evoke: with classic lap siding; Ivy League with shallow grooves; wide-grooved T-1-11, flat siding perfect for applying battens (don't stop, there's more); V-grooved siding; Great Divide with the look of board and batten without applying battens; kerf siding with narrow grooves; or early American with the look of spaced boards.

It all adds up to the freedom of choice to make each of your homes a unique statement. And that sells.

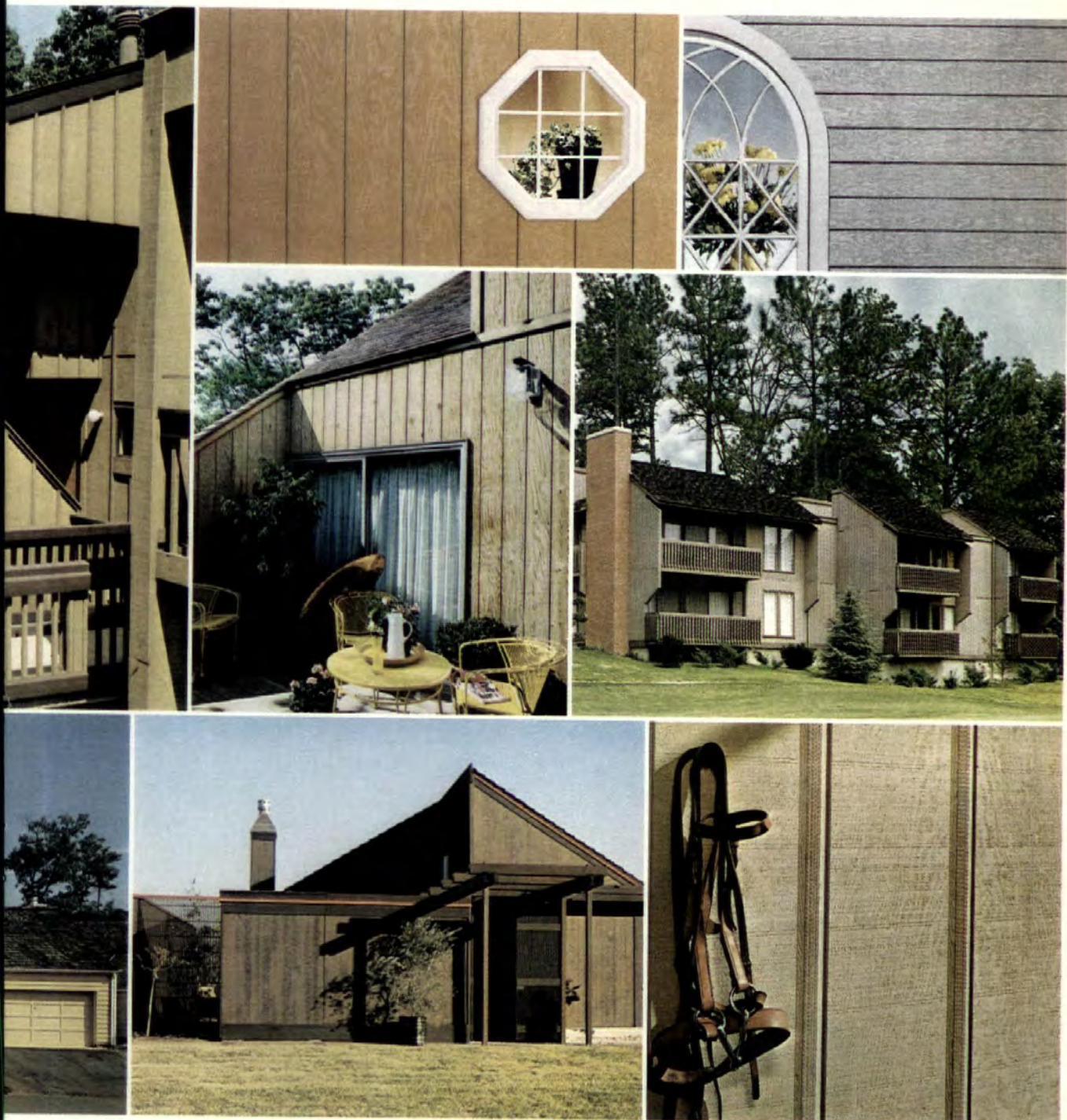
We're proud to say that we make this fantastic selection now, under our new name, Champion Building Products. (You've known us for a long time as U.S. Plywood.) It proves you can have quantity and quality at the same time.

Look for our plywood sidings, along with our smooth and textured hardboard and PFL® sidings, at your local Headquarters/Champion Building Products Dealer. He has everything you need from sidings to paneling to roofing, insulation or lumber.

For further information, call your local Champion Building Products Sales Office.



Champion Building Products™
Champion International Corporation



The following Weldwood sidings are shown clockwise from upper left corner: Roughtex board & batten; Planktex*; Roughtex lap; Planktex; Great Divide; Oldbridge*; PF-L* lap. Center: Roughtex Texture 1-11.

© Champion International Corporation, 1977

and now...
valley II™

Two Handle Washerless Faucets





A Great Product Line Gets Better!

Valley II faucets are designed, manufactured and assembled using the experience, integrity and craftsmanship that make Valley single control faucets a leader. Valley II uses the same "time-tested" materials proven dependable in millions of Valley single control faucet installations.

Valley II faucets operate quietly.

Only Valley II washerless faucets have the "Whisper-Soft" noise inhibitor that prevents rumbling and whistling.

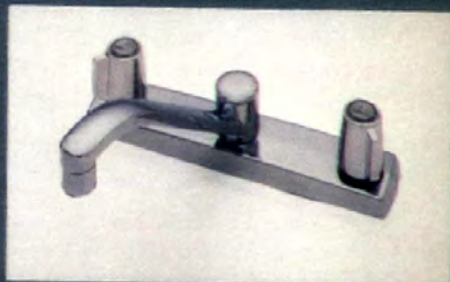


Valley II's linear flow control.

Valley II's unique operating unit functions smoothly with minimum effort and maximum control of water from trickle to full flow.

Valley II's washerless design gives trouble-free performance.

Valley II eliminates the age-old compression stem, washer and seat problem. One internal moving part glides over the inlet ports to allow water flow in the "on" position, shears off flow in the "off" position. Valley II offers years of drip-proof, trouble-free operation. And one operating assembly is common to all models.



Valley II faucets are available with elegant Starfire-Crystal handles or high styled chromed metal handles.

Valley II faucets are backed by Valley's famous Limited Five Year Warranty.

Valley II two handle washerless faucets. For quality, design and performance, Valley II gives you what you're looking for in a two handle faucet.

Write for our full-line catalog.

Valley Faucet

UNITED STATES BRASS CORPORATION



A Division of Hydrometals, Inc.
901 Tenth Street, Plano, Texas 75074



Circle 49 on reader service card

Name _____

Company _____

Street _____

City _____ State _____ Zip _____

Doing your own ads?

Lots of builders do. They don't want to spend money for agencies, or the nearest agencies are unfamiliar with housing.

And you can create effective ads by yourself, says marketing consultant Briggs Napier of Bloomington, Minn. He warns, however, that you should follow some basic rules. Here are the simple guidelines he suggests:

Know when—and when not—to advertise

You can't force a dead market to life all by yourself, Napier says; so if your area is slow now, don't advertise.

"Wait until you see some activity returning," he advises. "Then advertise for all you're worth. That way, you'll get your market share when the action is there, and you won't throw away money when it's not."

Understand your buyers

There are many kinds of home purchasers, Napier says, and they certainly don't all speak the same language. Such phrases as "swinging style of life" and "a cool house" won't tempt empty nesters nor will "gracious and relaxed living" rouse young move-ups.

So be careful of how you describe your homes and amenities. And if possible, Napier says, avoid jargon and cute phrases; they seldom mean much.

Choose your ad vehicle carefully

While most builders use newspapers, keep in mind that they're not the only game in town. Magazines, radio, outdoor displays and even TV can help.

"We sold out a 150-unit project by switching from newspapers to radio," Napier says. "We were going after young buyers with classified ads, but they weren't reading them. So we arranged for a disc jockey with a large under-30 audience to plug our homes. The response was almost instantaneous."

Direct mail can also be effective, according to Napier, if you can afford the cost. In fact, he adds, sending printed brochures directly to prospects' homes may be the best way of promoting your models.

Keep content direct and simple

Don't say too much, Napier suggests. Remember that you want to draw

people to your models; you don't want them trying to make decisions on anything while they're sitting at home.

So include in your ads such things as price, location, style, benefits—anything that gives prospects a reason to come out. Leave out a laundry list of features or full descriptions of amenities and floor-plan options.

"Stay completely away from financing," Napier warns. "The buyer may assume that what you've listed is the only plan available."

And when planning your approach and style, Napier says, keep these additional points in mind:

- Avoid clutter in your ads. It may seem wasteful to pay for space and then leave some of it empty, but an ad crammed with information is seldom attractive. And it can be difficult to read.

- Use photos instead of drawings. Buyers prefer something real to something staged. And put people in your pictures; buyers relate best to other people.

- Make sure your headlines cite a benefit instead of just another of your features. "Point to the fact that your model has a convertible den or nursery rather than three bedrooms with an option," says Napier. "Emphasize that your house has a place to welcome guests instead of a large entry foyer."

- Make your ad approach consistent from week to week. National advertisers do because they know that continuity builds memorability. Follow their lead, says Napier; it also makes good marketing sense for you.

- Finally, be honest in your claims. Talk about a stand of oak trees instead of a heavily wooded lot when you have only three young trees on a site. Say your project is a ten-to-twenty-minute walk from downtown instead of a hop, skip and a jump.

"Believability and credibility are important," Napier says, "not just because government and consumer groups are always looking for dishonest claims, but because honesty sells best."

—J.G.C.

GUIDE TO MEDIA SELECTION

(Based on annual production)

Media	To 20 homes sold	To 50	To 100	Over 100
Newspaper classified	Yes	Yes	Yes	Yes
Newspaper display	Maybe	Maybe	Yes	Yes
Radio	No	Maybe	Yes	Yes
TV	No	No	Maybe	Maybe
Direct mail	Yes	Yes	Yes	Yes
Outdoor display	No	Maybe	Yes	Yes

House & Home promotes two editors

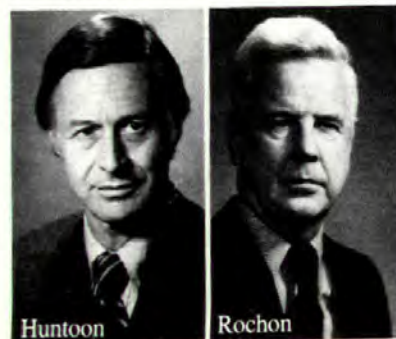
Maxwell C. Huntoon Jr., managing editor since 1971, becomes executive editor. Edwin W. Rochon, who became H&H's senior editor for news and finance in 1966, succeeds Huntoon as managing editor.

The promotions were announced by H&H's publisher, Blake Hughes.

Huntoon is a former builder and the author of the Urban Land Institute's book, "Planned Unit Developments." He came to H&H as an associate editor in 1960.

Rochon was a copy editor for the *New York Herald Tribune* and *Daily*

News and a foreign affairs columnist for the *New York World-Telegram & Sun* before joining H&H in 1963.



Huntoon

Rochon



Builder: Robert Solomon, President S.I.R. Developers, Inc. Garden Grove, Calif.

Introducing new $\frac{1}{8}$ " PPG Solarcool® glass. It's beautiful any way you cut it.



For years, the commercial and institutional market has had the advantages of using the beauty of PPG Solarcool Bronze reflective glass.

Now, PPG reflective glass is available for residential use in $\frac{1}{8}$ " thickness. What makes it so practical for builders is that it's annealed. Which means that local dealers can cut it, temper it, fit it and fabricate it into insulating units right in your locality.

In this model home in Anaheim Hills, Calif., it looks perfectly stunning. But it has a practical side, too—the inside. Compared to clear glass, PPG Solarcool Bronze reflective glass delivers a 15- to 18-percent energy

saving from air conditioning in this house—by reducing glare and heat gain from the brilliant Southern California sunshine. This data is based on PPG computer energy analysis of this model. In other locations the savings could be even more impressive.

In the daytime, the subtle, mirrored facade of Solarcool sharply reduces visibility from the outside, so people inside can enjoy comparative privacy.

At the same time, it's a lot nicer to look out at all the sunlit flowers and lawns because the glare is cut down. And since only 16 percent of the sun's ultraviolet light can get

inside, fading of interior colors is almost eliminated.

We'd like to help you sell the advantages of homes built with PPG residential Solarcool Bronze reflective glass. Write to us for a free color brochure.

PPG Industries, Inc., One Gateway Center, Pittsburgh, Pa. 15222.

PPG: a Concern for the Future

PPG
INDUSTRIES

Circle 51 on reader service card

H&H/housing 4/77 **51**

"I'd stake my reputation as a builder on Whirlpool heating and cooling."

("Last year I did it 28 times.")

"Whirlpool is a name I know I can count on. And if I've learned anything in 25 years in the building business it's not to take shortcuts when it comes to heating and air conditioning.

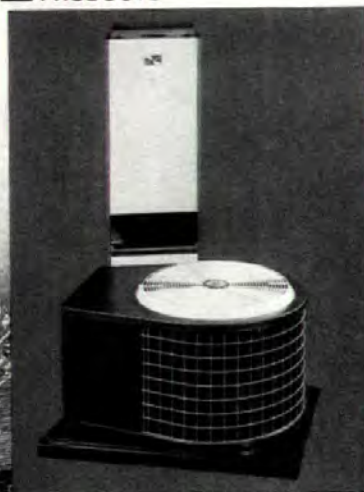
"The magic word today is 'trouble-free,' and I don't hesitate to use it when it comes to Whirlpool. I don't have any problems and my phone doesn't ring at night.

"If I'm going to guarantee a unit, it's going to be a Whirlpool unit. I know how proud Whirlpool is of its reputation, and when they put that reputation on the line . . . that's good enough for me."

If it's good enough for you, too, call us in Nashville at (615) 244-0450.

Mr. Charles K. O'Connor is one of the 12 custom builders selected to participate in developing Kingwood, "The Livable Forest," Houston, Texas.


Whirlpool
HEATING & COOLING PRODUCTS



There's a lot more behind the Merillat door

Extras you don't pay extra for...



WIPE CLEAN INTERIORS

The entire interior, including drawers and trays, is laminated with a tough wood-grained design vinyl.



SLIDE-OUT TRAYS

A standard feature in base cabinets, utilizes full depth shelf space and makes it so much easier for storage.



MERILLAT DESIGNED DRAWER SYSTEM

Nylon glides, in aluminum channels assure quiet easy open-close action. Aluminum guide rail supports plywood bottom. Proven dependability. Over 3 million in service.



SOLID OAK FRAMES AND "TRU-SQUARE" GUSSETS

Rigid solid oak front frames have double doweled joints. Massive corner gussets keep cabinets true and square.

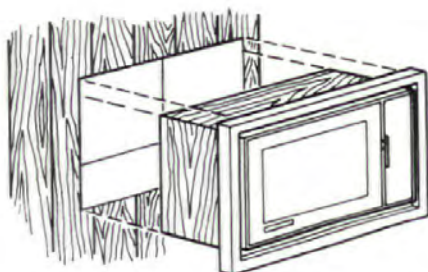
SELF CLOSING HINGES
ADJUSTABLE SHELVES
FURNITURE QUALITY FINISHES



MERILLAT INDUSTRIES, INC., Adrian, Michigan 49221

Circle 55 on Reader Service Card.

Whirlpool **microwave ovens**



Pick your spot and pick your model and see just how beautifully a Whirlpool Microwave Oven fits into your plans.



The Whirlpool Self-Cleaning range teams up with the Microwave oven of your choice through the use of a unique adapter kit that lets you easily combine the best of both worlds. It's the latest in cooking convenience for you.

BUILD IT YOUR WAY FOR BIGGER SALES

Whirlpool offers you just the right price and function combination to fit your needs when it comes to adding that extra touch to the kitchen that sells the house.

There are four Whirlpool models to choose from and each can be offered as a "plus" reason-to-buy—countertop, as a built-in to your own design, or as a part of Whirlpool's unique Micro Shelf concept, in conjunction with a Whirlpool 30" electric Self-Cleaning range. Your Whirlpool representative is ready with all the details. Don't let another sale go by without giving him a call.


Whirlpool
 CORPORATION




AMONG THE MANY ADVANTAGES OF **Ruff-Cut 44**[®] THIS IS THE MOST IMPRESSIVE ■ IT'S AVAILABLE.

It's catch-as-catch-can with a lot of wood products these days. But not so with **Ruff-Cut 44**®. We've doubled our production to meet increasing demands nationwide for this truly unique product. And we'll get it to you fast. . . When you need it, and where you need it. . . With a growing national network of distribution outlets.

SOME OTHER IMPRESSIVE ADVANTAGES ■

Besides being available in greater quantity, **Ruff-Cut 44** offers an impressive range of decorating advantages as well:

- The ease and economy of plywood in practical 4' x 8', 9' or 10' panels.
- The look of expensive 1" x 4" tongue-and-groove lumber, in your choice of Western Red Cedar, Douglas Fir or Redwood.
- The versatility to go contemporary or traditional — indoors or out.
- The durability of a panel produced to the industry's highest quality standard.
- Not to mention the eye appeal and sales appeal of beautiful, natural real wood.
- Ruff-Cut 44**. It offers you every decorating and design advantage imaginable. Contact us today for full details.

 **POPE & TALBOT**
1700 S.W. 4th / Portland, Ore. 97201

☐ Send me full details on **Ruff-Cut 44**, including pricing and local delivery.

Your name _____
Firm _____
Address _____
City _____ State _____ Zip _____



**Over \$160 million in insured
multi-family construction loans
financed in '76.**

**Is
there
anybody
else
doing more?**



Mortgage Company

Chicago • Columbus • Denver • Des Moines
Kansas City • Madison • Minneapolis • Omaha
Phoenix • San Francisco • Washington, D.C.

612-372-6724

"...bank-on, Banco!"



KOHLER PUTS GEMSTONES IN THE MOST UNEXPECTED PLACES.



PRESENTING ALTERNA ONYX.

For centuries, the world has recognized the beauty of onyx. In delicate cameos. In beautiful sculpture.

Now you can bring the elegance of this semi-precious gemstone into your home in a rather unusual way.

Because Kohler has added onyx inserts to its line of Alterna faucets. Onyx from Persia, Turkey, Argentina. Fashioned exclusively for you by European craftsmen. Designed to snap into and out of faucet handles to match a mood, change a decor. In four colors: white, green, light or dark brown.

Available in two-pair sets—white and green or two brownstones—to enhance Alterna faucets in satin or polished 24 carat gold electroplate or chromium.

Alterna Onyx. It may be the last place you'd expect to find a semi-precious stone. But then, it isn't the first time Kohler has introduced the unexpected.

For more information about Kohler plumbing products, write to Box A1,
THE BOLD LOOK OF KOHLER KOHLER CO.
KOHLER, WI 53044 Kohler products are available in Canada.

For low-budget variety: build several models from one plan

That's what Bensalem Development Co. is doing in the third phase of its Salem Point single-family project northeast of Philadelphia. The aim: to offer buyers a choice while keeping prices low.

And the result? About 80% of Bensalem's sales are five basically identical two-story plans, priced from \$38,990 to

\$42,990. (Three ranch-style models and two larger, higher-priced two-story plans are also offered.)

Sales have held steady at nine a month, even though models have not even been finished. And there has been no newspaper advertising yet because of the big freeze.

Here's how the company builds these popular look-alikes:



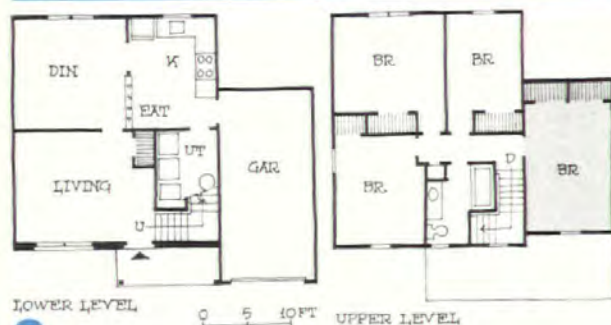
1 It starts with the basic plan

This 1,154-sq.-ft. house sells for \$38,900. It's been the choice of 27% of Salem Point's buyers, who are generally young working couples purchasing their first house.



2 Add a garage

Priced at \$41,990, this plan has accounted for 18% of sales. As in all Salem Point houses, its kitchen comes fully equipped with G.E. appliances, including dishwasher.



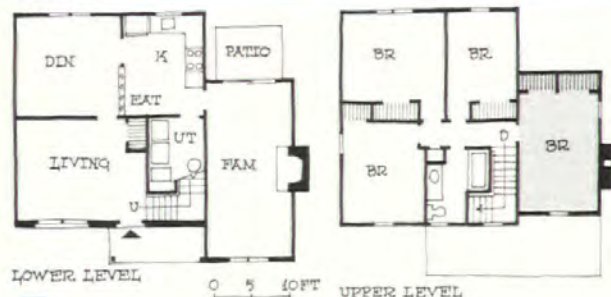
3 Put a bedroom over the garage

This plan, with 1,233 sq. ft. of living space, is priced at \$42,990 and has not been selling so far. Probable reason: There's not enough common area for a large family.



4 Add a family room instead of a garage

The best seller, with almost a third of total sales, this 1,374-sq.-ft. plan sells for \$41,990. The family room fireplace is a \$1,500 option; the 6' x 8' patio is standard.



5 Put a bedroom over the family room

With 1,453-sq.-ft. of living area, this \$42,990 house is the largest of the five plans, but has been the choice of only 4% of Salem Point buyers. As in all plans, the sales price includes landscaping.

And here's why Bensalem did it

When Salem Point opened in mid-1975, only three plans were offered—two ranches and a 1,272-sq.-ft., \$37,500 two-story that became the best seller.

By June 1976, rising costs had lifted that plan's price up to \$43,500, and the company knew it was on the verge of losing its market—young, first-time buyers.

So Bensalem decided to cut costs by producing a scaled-down version of its most popular plan. (The company narrowed it; eliminated a half bath and the garage; and repositioned stairs and bedrooms.) Result: the \$38,990 basic plan shown above left.

Another marketing advantage: by adding rooms to the box-like plan, Bensalem can offer its buyers a choice while sticking to economical repetitive construction.

Thermador announces a new microwave super system: one sleek built-in that cooks five ways.

(That should sizzle up your sales.)

Thermatronic II provides five basic cooking methods: microwave, conventional, a
combo of microwave-and-conventional, microwave broiling and conventional broiling

The upper oven has the best of two worlds: microwave for thawing frozen foods and cooking meals in minutes. Plus conventional heat for the slower way of cooking. Use both at the same time and get microwave speed as well as golden browning and finer texture provided by the conventional method. A large loaf of crusty bread bakes in 7 to 8 minutes. A 20-pound turkey is juicy and golden in just 1 hour and 40 minutes.

The lower oven operates separately and cooks with conventional heat. Both ovens have broilers, black see-through glass doors. Both are self-cleaning and ventilating. Push-button selector switches are located on the control panel. For customers looking for the best when building, remodeling or replacing, show Thermatronic II, the world's finest cooking system. It's a masterpiece of technological achievement.



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Micro-Thermal Ovens



For complete warranty details on Thermador products see your Thermador distributor
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Money strategies for the '70s

House & Home-4/77

NOBODY BUILDS A DISHWASHER LIKE WASTE KING

the best of everything. That's what you get with Waste King. A modern masterpiece in stainless steel, for those who want a better product, advanced features, long-lasting service.

Stainless steel is superior

It's tough. Rustproof. Sanitary. Unlike the porcelain or plastic coatings used by many manufacturers, stainless steel can't wear off, chip, peel or crack. That's why we use it where the action takes place. For the tank and inner door of the dishwasher, the wash arms that do the scrubbing and rinsing, the basket guide rails.

That's why we can guarantee all stainless steel parts for 20 years against failure due to corrosion.

Load it the easy, random way

There are no special instructions to follow when loading a Waste King dishwasher. Both baskets pull out all the way for easy accessibility. Both take a mixed load of dishes and utensils. Bowls can go on top of other dishes. Removable dividers in the upper basket provide space for oversize serving dishes, utensils.



Three-way washing action

Fast-moving jets of hot, detergent-activated water from two counter-rotating wash arms reach every corner of the steel tank. This two-level, full-width cleansing system not only cleans completely, it permits random loading of each basket. The lower arm sends water



up through the lower basket. The upper arm jets water up through the upper basket, as well as down through the dishes below it.

(SS777 has single arm only)

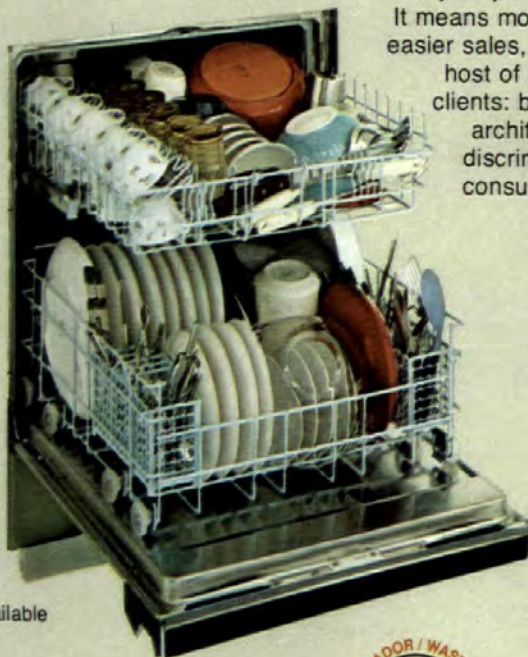
Superscrub and Sani-heat

The Superscrub cycle extends wash time to get tough jobs like roasters really clean. Sani-heat, a 165-degree final rinse sterilizes thoroughly. A silent heater provides humidity-free drying.



Control Panel for SS911.

Shown: Model SS911
Two portable models
(convertible) also available



Waste King pampers the load

Waste King's big baskets provide space for almost every size and shape. The huge-capacity tank can truly hold and wash a day's dishes for a family of five. There's no need to worry about breakage. Plates are spaced by cushioned loops to prevent chipping; M-shaped supports make secure cradles for the most fragile stemware. Flatware baskets have lidded sections to hold small items.



Insulation cuts down noise

Waste King dishwashers are ultra-quiet in operation, thanks to Hush-coat, a dense acoustical material that deadens sound at the source. In addition to hush-coating, the top, sides, back and door are wrapped with a thick blanket of fiberglass.

Disposo-drain ends pre-rinsing

No scraping. No pre-rinsing. Just flick off bones and large food pieces. Waste King's efficient Disposo-drain will flush away soft waste such as corn, spaghetti, potatoes, spinach. There's no screen to clean or to trap tiny food particles.

The Rinse-and-Hold cycle is a quick rinse to remove surface soil from dishes to be held for a full washing cycle later on.

We build it. We back it with a super-warranty

For more than 30 years, we have been building dishwashers to rigid standards of performance, quality and craftsmanship. We back them with a **super-warranty that's the strongest in the industry.** This kind of track record can make your job easier.

It means more sales, easier sales, and a host of satisfied clients: builders, architects and discriminating consumers.



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Super profits**

Waste King
Stainless Steel Dishwashers



For further information and complete warranty details, see your Distributor or write Waste King, Dept. S, 5119 District Blvd., Los Angeles, Ca. 90040

Circle 61 on reader service card

John Montgomery demanded an end to needless callbacks.



"We've been using APA's Glued Floor System for about six years. It provides better structural integrity, and our callbacks are practically nonexistent." John A. Montgomery, Jr., Montgomery Company, Louisville, Kentucky.



Have you got a construction problem? We can probably help you solve it with plywood, and cut your costs at the same time.

Look at floors, for instance.

If you have to go back and take out a squeak or pound a few nails back down, it can cut into your profit and affect your reputation. But with APA's Glued Floor System, squeaks, nail popping, bounce and callbacks are virtually eliminated.




Helping builders stay profitable and competitive is a chief concern of the American Plywood Association. So, we make available a complete assortment of plywood information, from building codes to new construction techniques. And we're also active in research and development of new plywood systems that improve quality and save time and money, too.

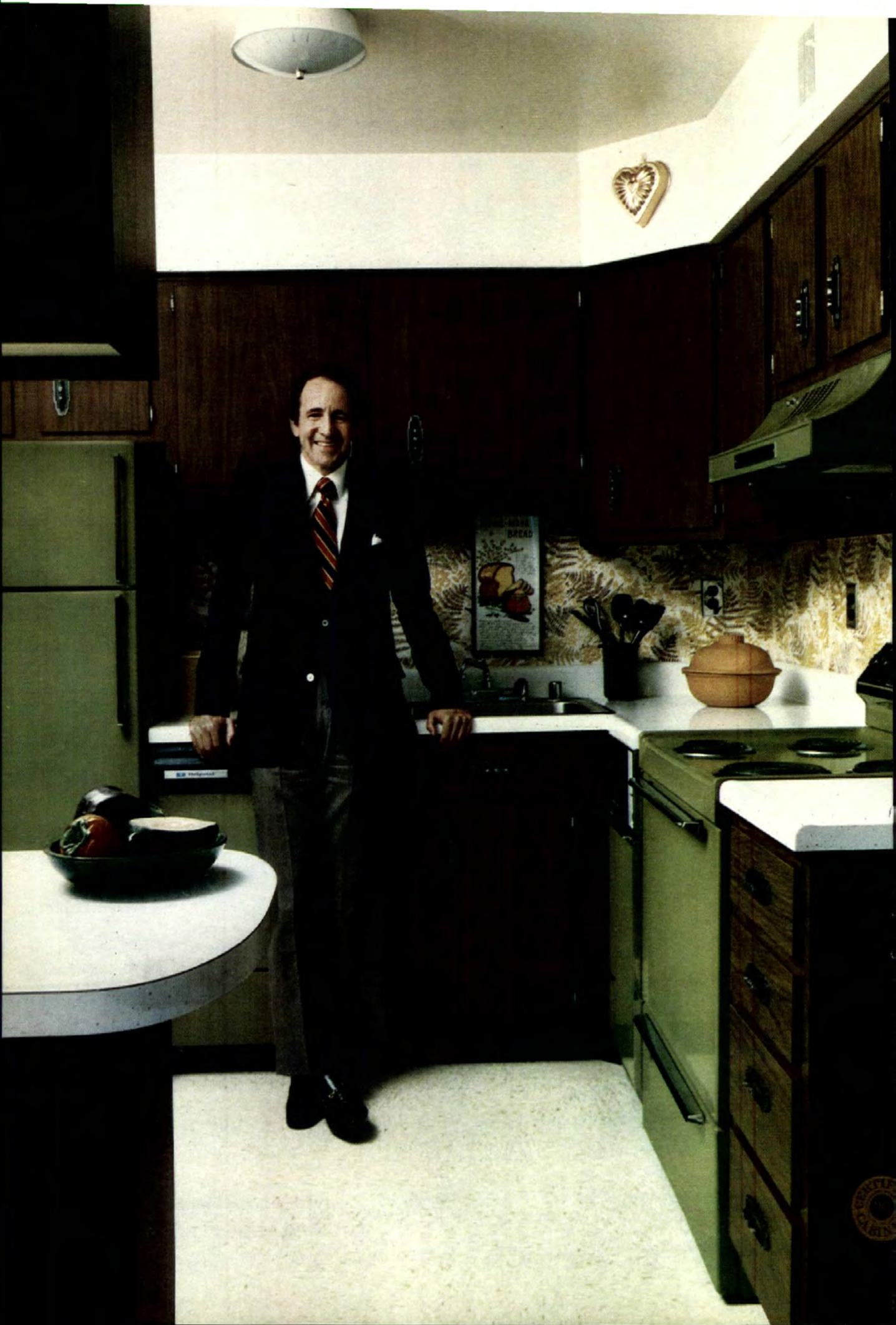
Our Glued Floor System is a

good example.

A single layer of tongue and groove UNDERLAYMENT plywood panels is glued and nailed to wood joists. This creates a T-beam assembly that's stiffer than conventional nailed floors, making it possible for joists to either be smaller, more widely spaced, or span longer distances. So, you can install it faster, use less wood and fewer nails and give your buyer a better floor as well.

Details on the APA Glued Floor System and answers to all your plywood questions are free. Just send in the attached reply card, or write us at 1119 A Street, Tacoma, WA 98401.

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"Scheirich's Gardencourt cabinet was ideal for remodeling.

It withstood the hard knocks of busy workmen, and we didn't have to sacrifice good looks for durability."

David Clark, President
Fairfax, Inc. Washington, D.C.

"In our remodeling projects, we've found the room that usually needs the biggest lift is the kitchen. So we wanted a cabinet that would make that room look like it had never looked before. But, since we're still working long after the cabinets are installed, we wanted something that would stay good-looking—even after some hard knocks by workmen. With Scheirich's Gardencourt cabinet, we haven't had a problem yet."

Gardencourt Parkview. One of the best investments you can make in equipping a kitchen. And priced to fit into the tightest budget.

The cabinets are made of strong wood fibers, bonded with a process that gives them resistance to moisture and temperature changes.

They're completely sheathed in a rugged vinyl with a pecan-grain exterior finish. An extra layer of clear vinyl is then added for more protection,

along with still another on all doors, shelf edges and corners.

Maintenance is practically nil. The cabinets wipe clean inside and out with just a damp cloth. Plus, the tough polypropylene drawers have rounded corners for easy cleaning.

Other features include rich, antique pewter-finish pulls and color-coordinated backplates.

If you're remodeling, look into Gardencourt Parkview. See your Scheirich distributor or write H. J. Scheirich at our main plant. H. J. Scheirich Co., P.O. Box 21037, Louisville, Kentucky 40201.

SCHEIRICH

CABINETRY

FINE FURNITURE FOR THE KITCHEN AND BATH



Clustered in a grove of trees along Pennsylvania Avenue in Washington, D.C., Fairfax Village is a 56-acre community of 826 apartments and townhouses. For 35 years, the community was a home away from home for senators, congressmen and other government officials. Now, over 435 units have been completely modernized, with the entire project scheduled for completion by 1978. The beautifully landscaped one, two and three bedroom units range from \$19,900 to \$40,000, and include everything from central air conditioning to trash compactors as standard equipment. To date, over 90% of the remodeled units have already been sold.

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H&H: I enjoyed the new HOUSE & HOME, the magazine of housing. The size is handy and practical. Editorial and news comments were concise and to the point.

The folks who plan, build, sell and manage housing should be pleased with their new friend.

Can the next issue be a month away?

DAVID P. BAKER, president
Southwest Federal S&L
Wichita, Kans.

H&H: I like it! I like it!

MARTIN A. BROWER
Director of Public Relations
The Irvine Co.
Newport Beach, Calif.

H&H: You've done a magnificent job in scaling down page size, yet maintaining the strong HOUSE & HOME presence.

NORMAN WEISSMAN, president
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H&H: Congratulations on your new format.

The easy-to-read type, the how-to articles, and the informative behind-the-

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WILLIAM E. BECKER, president
The William E. Becker Organization
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H&H: I think it looks terrific.

DAVID R. HARVEY
Campbell-Mithun Inc.
Minneapolis, Minn.

H&H: Your new format suggests an everyday news-type magazine that supports the more continual involvement our industry now demands.

RICHARD E. DOBROTH,
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Spaulding & Slye Corp.
Burlington, Mass.

H&H: It's a tremendous improvement.

DAN KEISERMAN, president
National Heritage Industries
Brea, Calif.

H&H: I particularly like the placement of the editors' page up front and the expressions of the editor about housing... The new format will only permit an already

fine job to be bettered.

RICHARD L. WEISS
The Richlar Partnership
Beverly Hills, Calif.

H&H: I want to extend my compliments on the new design.

Your new concepts bring the publication even closer to the industry.

ANDREW GREENMAN, president
Greenman Corporate Consultants
Hollywood, Fla.

1976 H&H INDEX AVAILABLE

The 1976 HOUSE & HOME editorial index is now ready for distribution. Copies of indexes for 1968, 1969, 1970, 1971, 1972, 1974 and 1975 are still available in limited quantities. Each lists the year's articles by subject and includes news, feature stories and columns. To get copies (there's no charge) write to: Reader Service Dept., HOUSE & HOME, 1221 Avenue of the Americas, New York, N.Y. 10020.

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With so much of the exacting, tedious, preparatory work already done, you will realize substantial savings in time, effort, and money and at the same time, a growing list of clients will realize that you're the one to come to for the right home at the right price.



plus 5 new home designs- of-the-month each month for the next 12 months

To supplement your library of 1,000 home designs, the Custom Home Plans Club will provide you with a steady flow of 5 new home design ideas each month for the next 12 months.

Illustrated in full color renderings—and complete with detailed floor plans—your five fresh designs-of-the-month can easily be added to your basic binder of 1,000 homes.

In this manner, the Custom Home Plans Club broadens the range of selections available to you and your clients, and keeps you current on home design trends beyond your immediate market.

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plus 12 sets of professional working drawings for homes of your choice

Members of the Custom Home Plans Club are entitled to receive a total of 12 sets of professional working drawings without charge.

These building plans may be ordered in any combination desired: 12 sets of drawings for 12 different homes; 4 sets for 3 different homes; or any other way you prefer them.

Beyond the initial 12 sets available as part of the Club



and get 1,000 home designs now the next 12 months plus 12 sets of homes of your choice.

membership fee, members may obtain additional working drawings at a 35% discount off published prices which range from \$25 to \$50 for single sets and from \$50 to \$75 for four-set packages—depending largely on the square-footage of single-family homes and the number of units for multi-family dwellings.

Drawn to FHA and VA general standards, these blue line prints—size 36" x 20"—are easy to read on a white background. Depending on the size and complexity of the house design, plan sets may include as many as nine sheets. Notes and drawings indicate location and types of materials to be used. With complete freedom of choice, Club members may order their 12 sets of detailed working drawings at any time during the 12-month membership period.

Club working drawings include: (1) Floor Elevations, (2) Complete Framing Plans, (3) Wall Sections, (4) Floor Plans, (5) Basement/Foundation Plans, (6) Roof Plan, (7) Plot Plan, (8) Kitchen Cabinet Details, (9) Fireplace & Built-in Details, (10) Specification and Contract Booklet.

plus itemized lists of building materials for accurate bids and reliable cost estimates

To eliminate the time-consuming task of taking off material requirements from each set of plans ordered, the Custom Home Plans Club automatically provides members with item-

ized lists of building materials needed to obtain reliable bids, to make accurate cost estimates, and to order building materials from suppliers.

The lists include the size and quantity of all millwork such as doors, lumber and built-ins . . . framing lumber . . . roofing . . . flooring . . . wallboard . . . masonry . . . concrete . . . reinforcing . . . insulation . . . beams . . . finishing materials, and more.

The lists of building materials used in conjunction with the detailed working drawings—save Club members dollars, drudgery and valuable time more profitably spent with clients.



Application for membership

Enclosed is a check for \$360 for a full year of membership in the Custom Home Plans Club. For this I am to receive immediately a binder containing 1,000 home designs, plus a portfolio of 5 new designs each month for the next 12 months.

My membership also entitles me to a total of 12 sets of professional working drawings and a list of building materials for Club homes of my choice. These sets of working drawings may be ordered in any combination I desire: 12 sets for 12 different homes, 4 sets for 3 different

homes, or any other way I prefer them. Beyond these 12 sets included in my membership fee, I will be able to buy additional sets at a 35% discount off published prices during my membership period.

If after receiving my first set of working drawings I am less than completely satisfied, I am entitled to a refund in full—and no hassle—simply by returning the binder of 1,000 designs and the working drawings in good condition.

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SURE-SELL KITCHENS

What makes the sell sure? An artful blend of efficiency and that eye-catching quality often referred to as glamour.

Today this mixture—shown at left and on the following pages—packs more sales punch than ever. And for good reasons: Cookery is in vogue. So is casual entertaining. And because of the trend to smaller houses, kitchen space has to work harder. So the room that was always the heart of the home takes on even greater importance in the eyes of buyers.

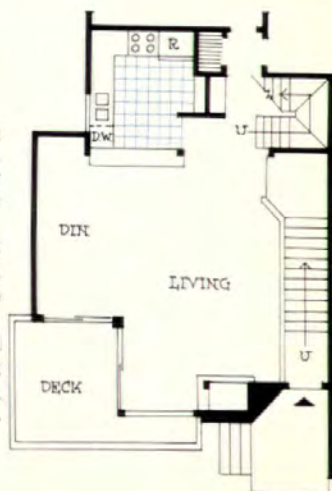
The kitchens you'll see here were designed with that fact in mind. They are grouped by housing type—single-family, townhouses, plexes and so on—because each type poses a different set of planning and marketing problems. On page 144, you'll find a list of products used in each kitchen. And if you're curious about what makes for a no-sell kitchen, check the floor plans on page 85.

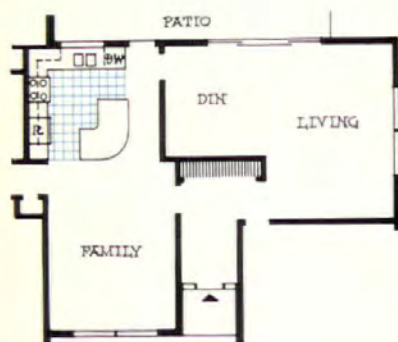
—NATALIE GERARDI

A vacation kitchen in a one-bedroom/loft beach retreat is right in the center of things. A large serving bar, which can be used for snacks or a buffet, divides it from the living/dining area.

This kitchen is in a 1,130-sq.-ft. unit—part of a sixplex at HarborWalk in Oxnard, Calif. [H&H, Nov. '76]—priced from \$45,000 to \$52,000.

Developer: Raznick & Sons, Woodland Hills and Wood-Bergheer & Co., Newport Beach. Architect: Kenneth Johnson, Covina. Interior designer: Cher-Ron Design, Woodland Hills.





Tight space used right

A compact L-plan squared off with an eating counter puts storage, preparation, cooking and serving areas within easy reach of each other. Yet the kitchen appears spacious, as it is open to the family room. It also has a pass-through to the patio.

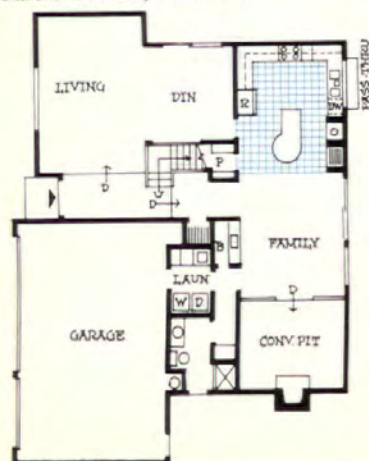
This kitchen is in a four-bedroom house selling for \$49,200 in Sand Lake Hills, Orlando, Fla. The 300-unit community opened in February and chalked up 20 sales that month. Developer: Bel-Aire Homes. Interior designer: Baywood Design, Winter Park.



Free-form dining

An eating counter with a curved end—which may be at chair or at stool height—makes a nook unnecessary in this 2,590-sq.-ft. house in Northridge Country Estates, Northridge, Calif. "Buyers use an adjoining family room as a game or a hobby room," says Marketing Director Garth Chambers. "No one uses it for eating."

The house sells for \$136,300, mainly to the move-up market. Developers: Shapell Industries Inc. and Liberty Building Co. Interior designer: Carole Eichen, Fullerton.





SHELDON LETTICH

The open-wide look

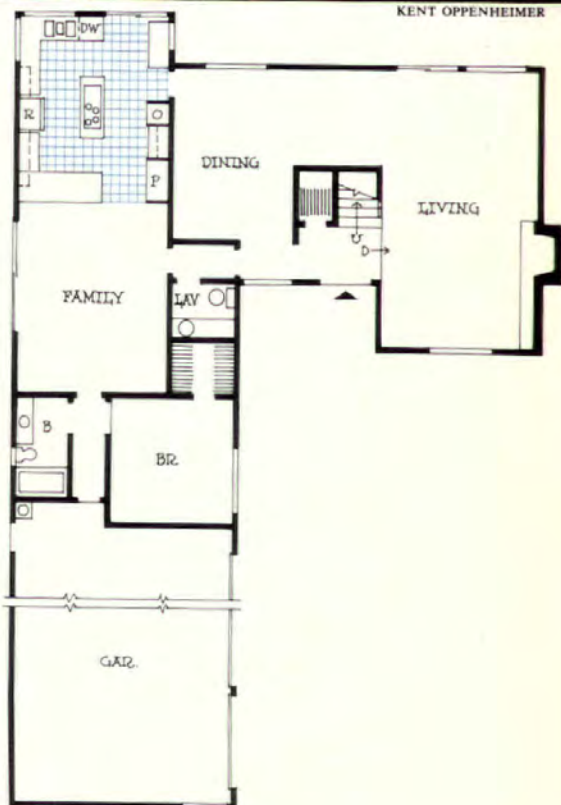
This island kitchen is surrounded on three sides by windows or sliding glass doors; on the fourth, a table-height eating counter separates it from the family room, which also has a large glass sliding door. It was designed for a waterfront site, but a similar plan would make sense wherever there is a good view—of a garden, a wooded area, or even of other houses from a hillside.

All that openness cuts down on places to hang cabinets. The problem is solved with a storage wall that includes a good-size pantry.

The kitchen is in a four-bedroom house that sells for \$183,600 on Trinidad Island, Huntington Beach, Calif. The 84-unit first phase opened in January and sold out the same day.

Developer: The Christiana Companies, Huntington Beach. Architect: Merle Roussellot, Los Angeles. Interior designer: Beverly Thompson, Newport Beach.

KENT OPPENHEIMER

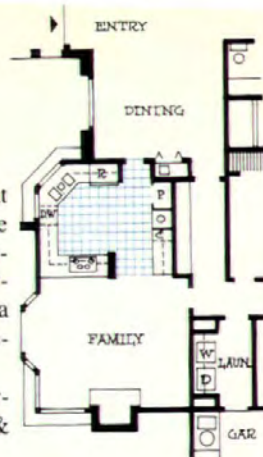


The hub-of-it-all kitchen

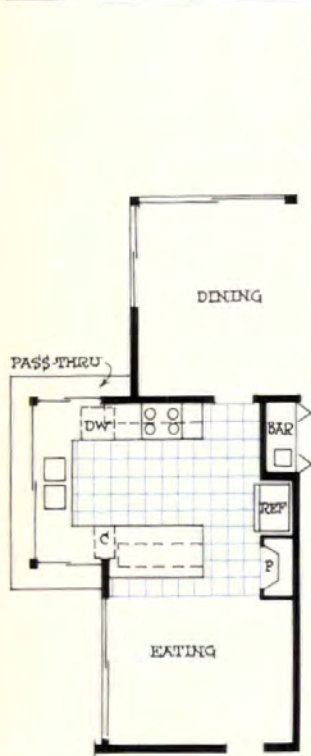
It overlooks the family room and—an unusual feature—the front entry as well. It is easily reached from the front path (through the double door in the family room) or from the garage (through the laundry, *lower right on plan*). And it is closed off from the formal part of the house, open to the informal family room, and accessible from the secondary bedrooms.

This setup is ideal for families that entertain formally and that may have older children living at home. And indeed, it is the older, move-down market that is buying at Broadmoor's Sea View in Newport Beach. This three-bedroom model sells for \$158,000.

Architect: Morris & Lohrbach, Irvine. Interior designer: Lois Harding & Assoc., Orange.



DAVE ROSS



CHARLIE SCHNEIDER





LELAND LEE

Two versions of the indoor-outdoor kitchen

In the plan at left, fully a quarter of the kitchen area extends out onto the patio. This space is enclosed by counter-to-ceiling windows, which provide a pass-through to a wide wraparound counter. The eating areas, too, are oriented to the outdoors, with sliding glass doors that take up most of the wall space.

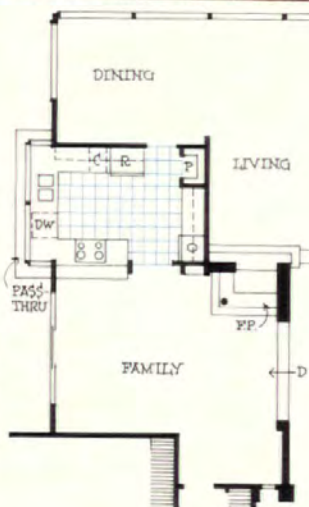
This kitchen is in a 1,925-sq.-ft., two bedroom patio home in Windemere, a 161-unit community in La Jolla. The house is priced from \$117,000 to \$138,000, depending on view and amenities. Some 66 units have been sold, mainly to empty nesters.

Developer: Avco Community Developers, La Jolla. Architect: Dale Naegel & Assoc., San Diego. Interior designer: Quinn Robertson, Tustin.

Like the kitchen at left, the one above juts out onto the patio. It also has pass-through windows and an outdoor wrap-around counter.

And yet the overall effect is quite different—partly because only a low eating counter separates kitchen from family room and partly because red brick is used on the oven and pantry wall and the counter base.

This kitchen is in a 2,100-sq.-ft., three-bedroom patio home at The Summit, a 98-unit, La Jolla community where prices range from \$139,000 to \$225,000. Developer: Gentry & Watts Development Co., San Diego. Architect: Wright Styles, Inc., La Jolla. Interior designer: Carole Eichen, Fullerton.





DAVE ROSS

The nook with a look

Here a spacious nook was created with a deep bay window that almost gives the effect of eating outdoors. The bay also separates eating area from kitchen and family room. That gives a somewhat formal feel to a plan that was designed for the older, established family. The kitchen itself is in classic U shape with an optional pass-through to the yard.

This kitchen is from a 2,044-sq.-ft., three-bedroom duplex unit priced from \$75,250 in the Irvine Company's new village of Woodbridge [H&H, Oct. '76]. Builder: Irvine Pacific. Architect: Red Moltz & Assoc., Irvine. Interior designer: Saddleback Interiors, Irvine.





DAVE ROSS

PAT HARPER

New angle on the eat-in kitchen

An inverted V with clipped corner (for pass-through to the patio) provides clearly defined eating space, convenient work space and plenty of storage. Note the colored cabinets, which are of laminated plastic: They have drawers instead of shelves in the bases and the upper ones have glass doors—an old-

fashioned touch.

This kitchen is in a 1,928-sq.-ft., two-bedroom retirement home priced in the low 50s in Sun City, Ariz. Developer: Del E. Webb Development Co., Sun City. Architect: George Flagler, Phoenix. Interior: Mary Jane Hawkins/Alvins Interiors, Sun City.

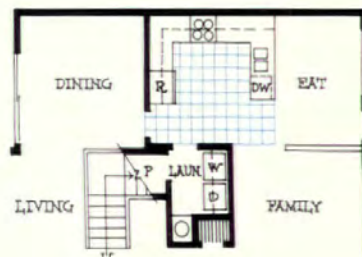


An inside kitchen that isn't closed in

A second Woodbridge kitchen (left) was designed for the younger family; it is open to the nook and family room so that a mother can supervise young children. A back-splash screens the sink area from the nook. And the nook is separated from the family room by a

half wall, which allows for easy furniture arrangement without blocking the view.

This plan is from a 2,161-sq.-ft., triplex unit priced from \$74,000. The builder, architect and interior designer are the same as for the plan above left.



The extra sell for two corridor kitchens



The kitchen below looks like an ordinary corridor kitchen, but it has a surprise: a laundry room that is convenient to the cooking area yet completely separate (*see plan left*). It is in a 2,155-sq.-ft., three-bedroom townhouse in Mission Hills, a 781-unit townhouse and mid-rise condominium community in Northbrook, Ill. that sells mainly to move-down families and empty nesters. Price: from \$129,000 to \$149,000.

Developer: Eugene R. Corley Builders, Northbrook. Architect: Salvatore Balsamo, Chicago. Interior designer: Decorative Manner, Highland Park.

The kitchen at right contains a counter that wraps around the corner into the eating area, making a small corridor kitchen seem like a large country kitchen. It is in a 1,300-sq.-ft., three-bedroom townhouse that sells for \$48,990 in Montpelier Oaks, a 130-unit development in Laurel, Md. Some 116 of the homes have been sold in nine months, mainly to government employees and professionals [H&H, Jan.].

Developer: KRB Inc., Laurel. Architect: Victor Smolen & Assoc., Chevy Chase. Interior designer: Judy Rock, Marina del Rey, Calif.





BUCK BALLAS

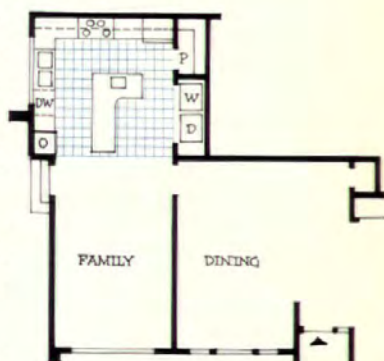
Extra sell on an island

An L-shaped island with a second cooktop—this one with a grill—and a marble slab for pastry-making provides added luxury in this large kitchen. And note the warming drawer below the double ovens.

Cabinets in other than wood finishes are cropping up more often. These are painted and were built on the job.

This kitchen is in a 3,000-sq-ft. townhouse in Hudson-on-Memorial, a 600-unit community in Houston. Prices average about \$180,000, and buyers are mainly couples in their 40s, some with older children.

Developer: Christiana Southwest Inc., Houston. Architects: Langwirth, Wilson, King & House, Houston and Kaplan & McLaughlin, San Francisco. Interior designer: Karen Butera, San Francisco.



House-like setup in a high-rise

There's room for eating, storage and a laundry in this 9'x14' apartment kitchen. The light colors used for appliances, countertop, cabinets and floorcovering make it appear spacious and up-to-date. This kitchen is in a 990-sq.-ft., one-bedroom apartment that sells for \$43,800 in Rotonda, 1,240-unit complex being built in five phases in McLean, Va.

Developer: International Developers Inc. Architect: Halle and Graff. Interior designer: Sherman Associates. All are of Washington, D.C.

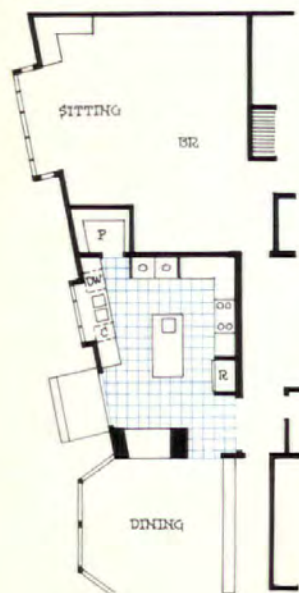


. . . IN CUSTOM HOMES

And, just for fun, a genuine original

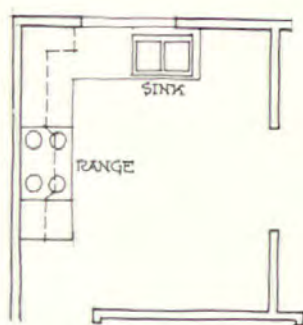
When a couple that loves to cook builds a 3,000-sq.-ft. house, here's what the kitchen can look like. Cabinets, walls and ceiling are all of redwood, and three 2'x8' stained-glass panels brighten the ceiling. The countertop is laminated strips of rosewood, teak and walnut. A center island holds a vegetable sink, and half its base pulls out to become a serving cart. Other built-ins include two microwave/oven combinations, warming drawers and a blender.

A 6'-high partition separates the kitchen from the den, and a stone fireplace separates it from the dining room. Architect: Berkus. Group Architects, Santa Barbara.

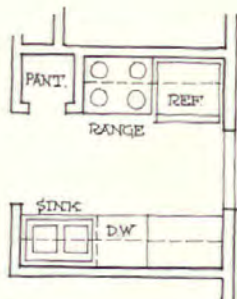


Test your kitchen planning skills

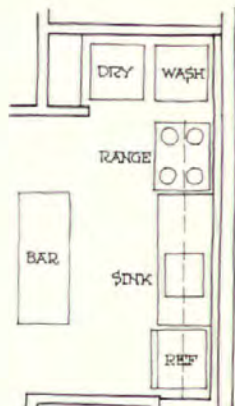
"We see the same mistakes over and over," says Bill Ketcham, manager of General Electric's kitchen/laundry design service. Six plans at right typify the layouts submitted to his department. Ketcham found 18 mistakes in them. How many can you spot?



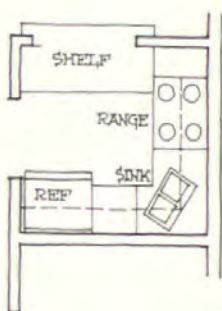
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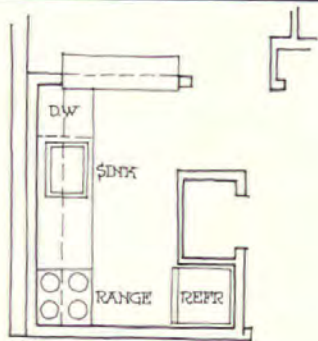
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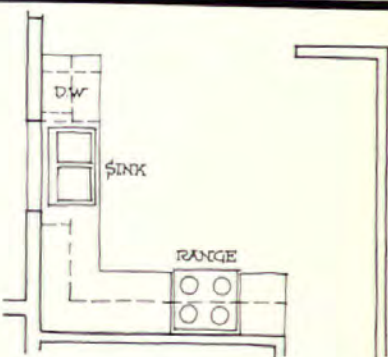
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6.

Plan 1 shows the most common mistake: inadequate space for the refrigerator. The upper right-hand corner of the kitchen was obviously intended for a refrigerator, but that location would put it too close to the sink. Ketcham recommends leaving at least 4 sq. ft. of counter between major work areas.

Another mistake: The sink is not centered under the window, and that makes work at the sink uncomfortable. Centering would solve the refrigerator problem but create another: no space for a dishwasher. Maybe the builder doesn't intend to offer a dishwasher? "Bad news in today's market," says Ketcham.

Plan 2 makes space for a pantry by omitting a counter between the refrigerator and the range. Says Ketcham: "It's great to have a pantry, but not if you have to sacrifice necessary counter space." Remember, base and wall cabinets serve the same purpose as a pantry.

Next, take a look at the sink. There should be counter space on both sides of a sink; in fact, the FHA specifies a certain amount depending on the size of the house. Because of the corner sink, this kitchen would not meet FHA standards.

Plan 3 crowds a laundry into one end of the kitchen. "It's hard enough to install the washer and dryer in this position," says Ketcham, "but then try to use that washer!"

Ketcham recommends keeping the laundry out of the kitchen. If that's not possible, put it where it doesn't interfere with food preparation and serving.

Other mistakes in plan 3: The refrigerator door could bind against the piece of wall that protrudes next to it; there's too little counter space between sink and refrigerator; the side of the range is unprotected (imagine doing the laundry while the oven is on!). And finally, isn't the builder at least going to offer a dishwasher?

Plan 4 shows another common mistake: The center aisle is too narrow. HUD's minimum standards call for 40 in., counter to counter. Ketcham would up the minimum to 48 in., although he feels that 42 in. is acceptable in a pinch.

The culprit here is that nice, wide eating counter. Most of it extends into the kitchen rather than the next room. And if it's a low counter, the oven door (under the range) won't open.

Next, look at the sink. No standard dou-

ble sink would fit in the space shown in the plan. Whoever drew the plan either didn't check sink sizes or scaled his drawing wrong.

Plan 5 pushes the range tight against a wall. This not only makes it clumsy to work there; it costs the builder more money for fireproofing. (Incidentally, this is another case of an appliance not drawn to scale; most ranges are 30 in. wide.)

Now look at the refrigerator. Not only is there no counter space next to it, but opening the door is sure to scar the wall.

Plan 6 looks great—until you try to put in a refrigerator.

The fastest way to check most kitchen plans (the exception is the one-wall plan) is to look for the work triangle. Draw a line from the center of the sink to the center of the refrigerator, then to the center of the range, then back to the sink. The three lines should total between 13 and 22 ft., and no single line should be shorter than 4 ft. 6 in. or longer than 7 ft. 3 in.

"If the person who designed plan 6 had checked it against the work triangle," says Ketcham, "he would have seen right away that he was in trouble."

A solar-house project comes to market—competitively

The project is Blue Skies Radiant Homes—33 single-family houses in Hemet, Calif. The 17 units in the first phase sold from \$37,900 to \$46,400, and developer Warren Buckmaster says his competition charges the same or slightly higher prices for conventionally heated homes of the same size (1,000 to 1,500 sq. ft.).

Buckmaster says he was able to bring solar-heated houses to market competitively because his no-frills

system is a lot less complicated than the solar plants that most other people are installing.

It is a hydronic/forced-air system (*see schematic below right*). Its solar segment is expected to handle 70% to 80% of the total heating and domestic hot water load in each house.

And Buckmaster says the payback period should be

TO PAGE 88

How Buckmaster's solar system heats

The combined hydronic/forced-air system is designed specifically for Hemet's micro-climate. The town is 40 minutes west of Palm Springs, and it has sunshine about 88% of the daytime. The temperature can reach 112° in the summer and averages 35° in the winter. Few nights get colder than 22°.

This means that Buckmaster can keep his collector area small. (There are 9, 12 or 14 collectors, each 3'x6½', on each house depending on the size.) It also relieves him of using antifreeze.

Besides collectors, there are these components:

- A 1,000-gal. underground concrete water-storage tank, insulated with 5" of styrofoam to help maintain the stored water's temperature. The tank also has a 200' coil of copper tubing in which domestic water is heated.

- Two conventional water heaters fired by gas—one to back up the house's space-heating system, the other to back up the domestic water system.

- Three pumps—two of 1/20 hp., one of 1/12 hp.

There are three circulation systems:

The solar pick-up system (*red in diagram*). Water in the storage tank is heated by circulating it through the collectors when the sun is out; when the sun isn't, this circuit shuts off. If temperatures drop below freezing, a slow-speed pump comes on and circulates enough warmed water through the collectors to keep the water in them from freezing.

The space-heating system (*blue in diagram*). When the house needs heat, water is drawn from the storage tank into another circuit, which passes it: 1) through a gas heater, which operates as a back-up only if water coming from the storage tank isn't hot enough, and 2) into a coil in the warm-air system. A fan pushes air over this hot coil and through the house.

The domestic hot water systems (*green in diagram*). Water passes through a 200' coil of 1" tubing in the underground storage tank and through a 40-gal. hot water heater, which fires only if the storage tank hasn't brought the domestic water to a high enough temperature.

Should the solar system fail, the back-up system is sufficient to take care of heating and domestic water.

Buckmaster is satisfied with the way this system is working, but he has learned it can be improved. His next 16 houses will have what he terms a "second-generation" system. These are the key changes:

- Space and domestic heating systems will be completely separated so that electricity can be saved in the summer by shutting off the space-heating system.

- A hot-water tank will be mounted on the roofs, higher than the collectors. Heated water will rise from the collectors into the tank, then travel into the domestic water system. The separation, Buckmaster says, requires the addition of one collector to each house.

- The 1,000-gal. storage tank will be moved from underground to grade level. Reasons: 1) The higher the tank, the easier it is to keep dry, hence insulated; 2) Less head pressure is needed for the pumps; 3) The pumps can be mounted below liquid level, so are always primed.

- A "drain-down" feature will be added so that, when water is not being circulated through the collectors, it will all drain into the storage tank. Thus, the below-freezing pump operation is no longer needed.

The drain-down feature, Buckmaster says, will allow the basic solar system to be adapted to very cold climates—and without the addition of heat exchangers or antifreeze.

By the same token, it is not necessary to use a gas back-up system. It could just as well be oil or electric resistance (in a very low-rate area). Or it could be a heat pump—in which case you would call it either a solar-assisted heat pump system or a heat-pump-assisted solar system.

Buckmaster received a \$97,000 HUD grant for his second-generation system, and he says it has been helpful in making the engineering changes.

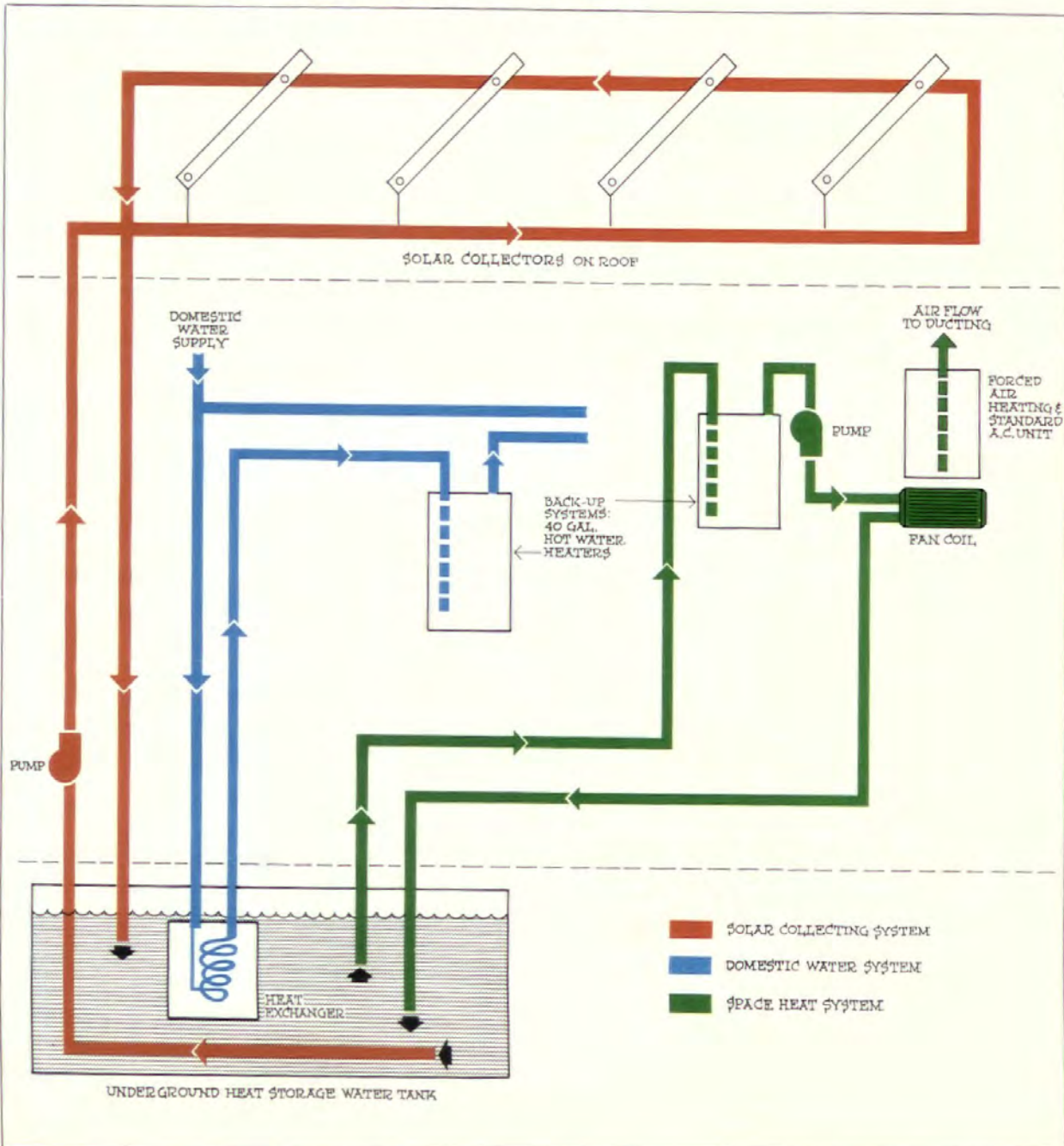
Air conditioning at Blue Skies is done with conventional equipment. Buckmaster says solar energy would not have been economical because only hand-built equipment is available and it is expensive.

However, he says, because of the super insulation he uses to engineer houses for solar heat, air-conditioning costs should be only one-third to one-half of those for conventional houses.



Solar-heated houses are sited in conventional subdivision fashion. Note that there are more solar collectors for the larger houses.

the house and its hot water.



Solar-house

CONTINUED

eight to nine years—"if conventional fuel rates increase the way our local utilities say they will."

Buckmaster won't disclose hard costs for his system; he fears sales might suffer if buyers try to separate solar cost from house price. "We want them to decide whether our houses as a whole—solar system or not—are good values," he explains.

But he concedes that a ballpark figure of \$3,500 to \$4,500 for the entire heating system is not far off.

Smart buying and in-house labor helped keep the solar costs down

Buckmasters' system is simpler than most, but he says it would have cost roughly \$2,000 more had he not eliminated a lot of middlemen's profits.

For one thing, he bought all parts directly. And he got rock-bottom prices from suppliers by convincing them that it would be good business for them to get in on the ground floor of something new. Buying in quantity also saved money. "It wouldn't have worked if we had built only one or two houses," he says.

He also had his own crews install the system. "It's really easy," Buckmaster says. "But the plumbing sub didn't understand what he was looking at so he would have bid the job high."

Buckmaster says he got the idea for his heating system by: 1) studying energy conservation for 18 months before putting anything on paper; 2) retaining as consultants five engineers who had worked on solar projects; and 3) checking out what others were doing "so I could learn from their mistakes."

The biggest lesson he learned: "You must engineer the house for solar heat. You can't take an ordinary house and put a solar system in it."

"Our houses are wrapped like a refrigerator with insulation. So our system can be comparatively small and inexpensive."

Buckmaster uses 4"-thick batt insulation (R-11) in exterior walls. "But inches aren't the whole story," he says. "We use foil-backed fiber glass and, for cooling, we turn the foil to the outside so that, when the sun's radiation comes through, the wall reflects up to 20% of it back out."

"And before the drywall goes on, we install a sheet of polyethylene to minimize air infiltration."

For ceiling insulation (R-28, which is above local code requirements), Buckmaster blows in recycled paper. "To get the R-28 with fiber glass, we probably would have needed 10" or 12" thicknesses."

In addition to the insulation, the houses have these energy-saving products:

- Double glazing on all windows and sliding glass doors.
- Weatherstripping and interlocking thresholds on doors.
- Metal fireplaces, which Buckmaster says heat up faster than brick and provide more warmth.
- Insulated bathtubs to keep water hot longer.
- Thermostatically controlled attic-exhaust fans to reduce the load on A/C equipment.

The houses are designed and sited conventionally

The design is typical of southern California—white stucco exterior walls and red tile roofs; and the houses sit on lots in normal subdivision fashion.

"Most of our buyers are retirees who wouldn't be comfortable in a community with a space-age look," explains W.J. MacDonald, an engineer and general contractor who's been working with Buckmaster.

That space-age look is a problem with solar houses whose collector panels are visible from the street. So collectors at Blue Skies Radiant Homes are placed atop the flat portion of garage and house and then masked by a parapet.

The parapets, Buckmaster says, also allow him to orient his houses to their sites, rather than to the sun.

How Buckmaster got started



In 1972 Warren Buckmaster was selling diamonds in New York City and living in a poorly insulated house in Connecticut.

"That was when energy costs first began to go up," Buckmaster says. "So I did what the experts suggested—put in more insulation, weatherstripping and storm windows."

The result: Buckmaster found he was fighting a losing battle. "My fuel dealer wrote a glowing letter about how much less oil I was using, but his bills still kept going up."

That convinced Buckmaster there was a great opportunity in energy-saving housing. So he moved to the West Coast and began his 18-month study of energy conservation.

"I didn't start out to build a solar-heated house," he says, "just one that would conserve energy. It simply turned out that solar fell into place with super insulation."

"Most architects place the collectors on the side of the roof, and the house must be turned so the roof faces the sun," says Buckmaster. "We can site the house and the collectors independently."

Staying with conventional California design proved to be the right market strategy. The 17-house first phase, completed in October, sold out in a month. And Buckmaster has firm prospects for the final 16 houses—due on stream this summer—even though prices aren't firm yet (he estimates a 12% increase due to inflation).

The developer also has mortgage commitments from the Bank of America, the source of his construction loan.

"The bank didn't refuse mortgages on the first phase," he says. "But it didn't make a point of offering them."

A few ads and lots of publicity pulled in heavy traffic

Buckmaster says more than 10,000 visitors have toured his solar homes since they opened.

"People come out because they're curious about how solar heating works," he explains. "But if they buy, it's because they like the house itself."

One reason he succeeds, he feels, is that he offers more amenities than his competition: fireplaces, fenced-in yards, two-car garages, soundproofed baths, cable TV outlets and safes embedded in the floors of master bedrooms. ("I've always wanted one in my own home," Buckmaster explains.)

"We came in like gangbusters on the amenities because we were offering a new idea, and we wanted to be able to merchandise a real bargain," he says.

Buckmaster joint-ventured the first phase with Lauren Construction Co. He's doing the second on his own. And even though the first 17 houses sold out fast, he's decided to make a few changes on the new models.

One change: The smallest plan will be increased to 1,050 sq. ft. Another: Elevations have been redesigned somewhat by architect Jim Calkin of Hemet. (There was no architect for the first phase.) "We need more facade variation," Buckmaster explains. "The first houses looked too much alike."

When Buckmaster completes his Hemet operation, he hopes to build similar houses in other areas of southern California.

—JUNE R. VOLLMAN



Solar collectors, angled at 45° (photo above) are installed on flat portions of roof. The collectors are masked by a parapet so they cannot be seen from the street (photo top of page).

Back-ups for solar system are two 40-gal. hot water heaters—one for the space-heating system, one for domestic hot water. The heaters are located directly above the 1,000-gal. underground water-storage tank (note access door in floor between heaters).



PHOTOS: LEONARD NADEL

Siting the single-family house:

How density affects your development costs

Will higher density cut costs enough to justify the time, money and risk of a rezoning battle?

That's one of the earliest and most important economic questions a builder must answer. And a new book, *Cost Effective Site Planning*, written by a Maryland land-planning firm and published by the National Association of Home Builders,* offers data that can help render the answer accurate.

The book lists typical development costs (right), applies them to a number of siting schemes with densities ranging from less than three to more than nine units per acre, and arrives at a comparative per-unit development cost for each scheme.

These comparisons lead to a conclusion that may surprise some people: Raising density just to cut development costs may not be worth the effort. A jump of from four to eight units per acre might save, say, \$2,000 per unit in development costs, not including the cost of rezoning. This would be significant for \$35,000 houses, but not \$70,000 houses. (But of course, raw land costs might be significantly decreased by an increase in density.)

"Furthermore," says Donald Hilderbrandt, the man most responsible for assembling the book, "you have to consider the marketing aspect. Higher densities might slow sales enough to wipe out savings in either development or raw-land costs."

Seven site plans of varying densities, taken from the book, are shown on the pages that follow. They include the basic design modes currently included under the single-family umbrella: detached, zero-lot-line, duplex, triplex and fourplex. And they are all based on cul-de-sac layouts.

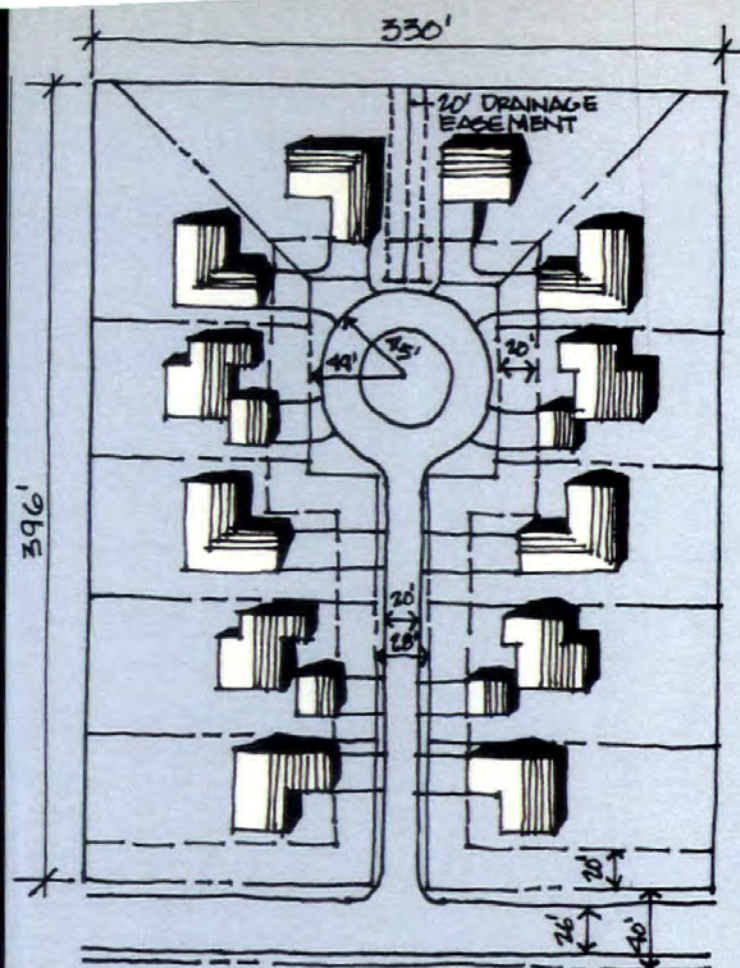
**Cost Effective Site Planning* can be obtained from the Land Use Department, National Association of Home Builders, 15th and M Streets N.W., Washington, D.C. 20005. Price per copy is \$12.50, and quantity discounts are available.



Partners in Land Design/Research, who conceived *Cost Effective Site Planning* include (l to r) Fred Jarvis, Donald Hilderbrandt, Kipp Shrack and Cyril Paumier. Hilderbrandt was the principal researcher and author, and his comments accompany the site plans in this article.

These key cost assumptions were used in the book

Clearing & grubbing (Assumes land 50% wooded, 50% open)	\$1,694/acre
Storm drainage	
18" pipe	\$11/lin. ft.
24" pipe	\$17/lin. ft.
30" pipe (Includes class 3 pipe RCCP, excavation, placement & backfill)	\$19/lin. ft.
Inlets, flat	\$1,000 each
Inlets, combination curb & gutter	\$1,120 each
Grass swales, 6'-8' wide	\$ 700 each
Headwalls/endwalls	\$2/lin. ft.
Riprap	\$50/headwall
Sanitary sewer	
8" AC pipe	\$12/lin. ft.
8" house service pipe (Includes excavation, placement & backfill)	\$10/lin. ft.
Water distribution	
8" mains	\$12/lin. ft.
6" mains (Includes excavation, placement & backfill)	\$9/lin. ft.
Fire hydrants	\$750 each
House service (Includes 1" copper pipe, excavation, placement & backfill)	\$6/lin. ft.
Grading R.O.W.	\$0.11/sq. ft.
Planting R.O.W. (Includes fine grading, seed, lime, fertilizer)	\$0.09/sq. ft.
Roads	
Cul-de-sacs	\$53/sq. ft.
Subcollector & collector street (Includes excavation, 5" stone base, 1½" bituminous base, 1½" surface course)	\$55/sq. ft.
Curbs & gutters	\$7.30/lin. ft.
Sidewalks (4' wide, 4" concrete w/mesh, no base)	\$4/lin. ft.
Driveways (5" concrete w/mesh, no base)	\$1/sq. ft.
Trees (2½" to 3" caliper, planted 40' o.c., priced at \$160 each)	\$8/lin. ft.



Detached houses at four per acre: \$5,686 per unit

This is the maximum density that most locales will permit for single-family detached homes, so it's a good standard against which to measure the development costs of the higher-density plans shown on the next six pages.

"It's a good layout from the community point of view," says Hilderbrandt. "Most local authorities will allow culs-de-sac that are 300' deep, as this one is, but they don't like anything much deeper. And from the residents' viewpoint, 12 houses is about right for a sub-neighborhood in which families can know each other well."

And from the developer's side, this is a good example of the law of diminishing returns as it applies to development costs. Were the density reduced to, say, 2.75 per acre, lot sizes (and per-unit raw land costs) would increase by more than 30%; development costs, on the other hand, would rise by only about 20% to roughly \$6,960 per unit. So the decision on whether to push for four units per acre in a community currently zoned for less should be based primarily on raw land costs, not development costs.

The basic cul-de-sac dimensions in this layout are repeated on the following pages, and Hilderbrandt considers them a good compromise among the needs of the residents, the community and the developer. As noted above, the 300' depth is generally acceptable; the 45' radius of the bulb is greater than most communities require to permit fire and service trucks to turn easily, and the 20' street width is sufficient for one-side parking with the low traffic a 12-house cul-de-sac generates.

Note that while the turnaround is circular, the right-of-way around it is square. This, says Hilderbrandt, permits the 70' frontage to be maintained on the pie-shaped end lots.

Net density	12 units on 3 acres = 4.0 d.u./acre
Gross density	12 units on 3.1 acres = 3.87 d.u./acre
Average lot size	9,611 sq. ft.

Cul-de-sac			
Total street	8,500 sq. ft.	708 sq. ft./d.u.	
Total R.O.W.	15,344 sq. ft.	1,279 sq. ft./d.u.	
Pavement width	20'		
R.O.W. width	28'		
Turnaround radius	45'		
Turnaround R.O.W.	98' x 98'		

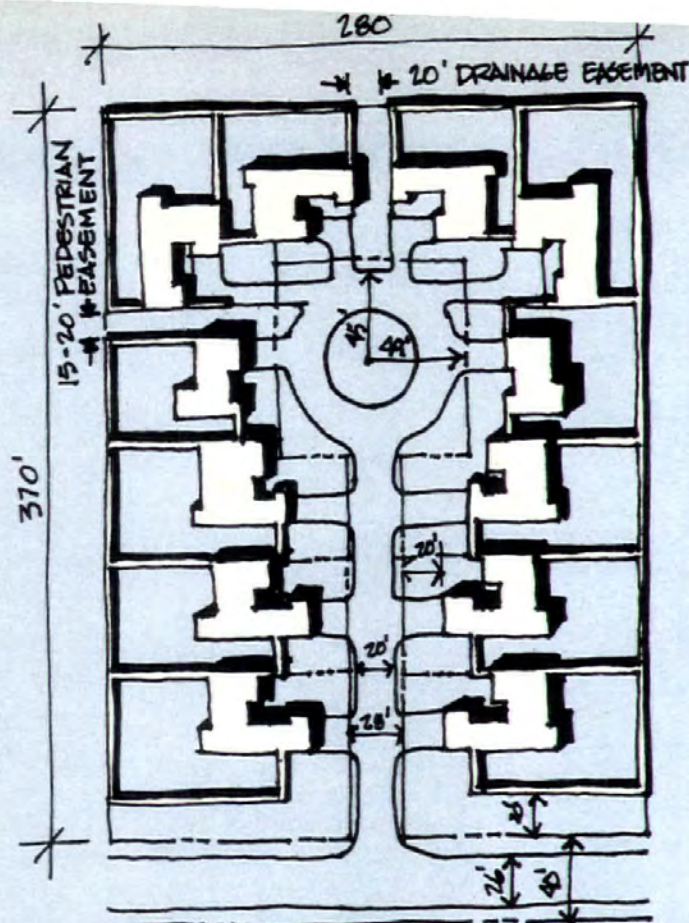
Subcollector street (½ street and R.O.W.)			
Pavement width	26'	4,296 sq. ft.	358 sq. ft./d.u.
R.O.W. width	40'	6,600 sq. ft.	550 sq. ft./d.u.

Setbacks			
Front yard	20'		
Side yard	10'		

Building coverage			
Average	1,000 sq. ft.		
Garage	440 sq. ft.		
Total coverage	1,440 sq. ft. x 12 = 17,280 sq. ft.		

Driveway coverage			
Average	700 sq. ft.		
Total coverage	700 sq. ft. x 12 = 8,400 sq. ft.		

DEVELOPMENT COSTS	
Clearing and grubbing	\$ 350
Grading streets	276
Street pavement	498
Storm drainage	611
Sanitary sewer	827
Water distribution	468
Curbs and gutter	701
Driveways	700
Sidewalks	208
Street trees	306
Grading/seeding	741
Total	\$5,686



Zero-lot-line at five per acre: \$5,039 per unit

From the environmental point of view, Hilderbrandt feels that this layout differs but little from that on the preceding page. The frontage is 10' to 20' less, but walling in the rear of the lots actually improves privacy.

"We've used deep front setbacks," he says, "and pulled the fences back of the garages. This eliminates the 'canyon' effect created by some zero-lot-line projects. This scheme was used in Columbia, and looks no more dense than detached units at four per acre."

Moreover, Hilderbrandt says that in getting zoning approval, "zero-lot-line at five per acre seems to be an acceptable alternative to detached at four."

But Hilderbrandt warns that the necessary walls in this kind of plan may wipe out the savings created by the increased density, especially in a cold locale where deep footings are necessary.

"And drainage can also be a problem, because the grading necessary to build the walls is often not compatible with the grading necessary for adequate storm runoff."

Net density	12 units on 2.38 acres = 5.0 d.u./acre	
Gross density	12 units on 2.51 acres = 4.78 d.u./acre	
Average lot size	7,390 sq. ft.	

Cul-de-sac			
Total street	8,200 sq. ft.	683 sq. ft./d.u.	
Total R.O.W.	14,924 sq. ft.	1,244 sq. ft./d.u.	
Pavement width	20'		
R.O.W. width	28'		
Turnaround radius	45'		
Turnaround R.O.W.	98' x 98'		

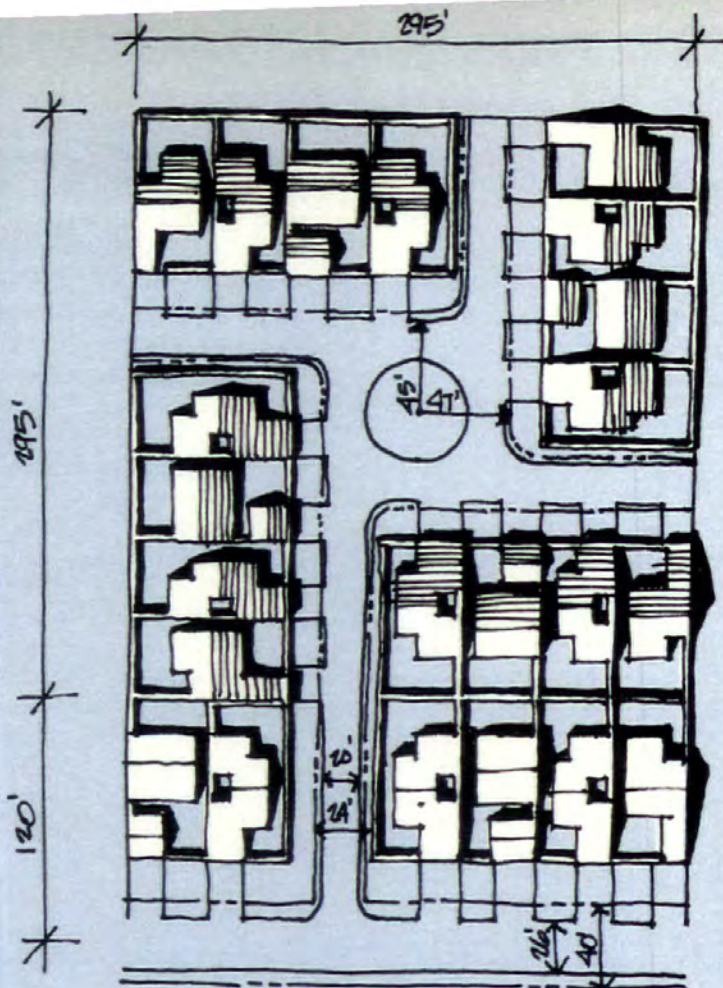
Subcollector street (1/2 street and R.O.W.)			
Pavement width	26'	3,636 sq. ft.	303 sq. ft./d.u.
R.O.W. width	40'	5,604 sq. ft.	467 sq. ft./d.u.

Setbacks	
Front yard	20' (10' for garages parallel to R.O.W.)
Side yard	0' and 15'

Building coverage	
Average	1,500 sq. ft.
Garage	300 sq. ft.
Total coverage	1,800 sq. ft. x 12 = 21,600 sq. ft.

Driveway coverage	
Average	500 sq. ft.
Total coverage	500 sq. ft. x 12 = 6,000 sq. ft.

DEVELOPMENT COSTS	
Clearing and grubbing	\$ 330
Grading streets	257
Street pavement	459
Storm drainage	583
Sanitary sewer	801
Water distribution	447
Curbs and gutter	657
Driveways	500
Sidewalks	188
Street trees	294
Grading/seeding	523
Total	\$5,039



Zero-lot-line at eight per acre: \$4,166 per unit

This is a decidedly unconventional cul-de-sac, but Hilderbrandt believes it would still qualify in most areas. The biggest problem would be the spurs running off the turnaround; they are 100' long and dead-ended, and trucks would have to be backed out.

"But the biggest bar to approval," says Hilderbrandt, "would probably be the high density—at least in suburban areas. In fact, this really is a plan for urban development. And with its 40' frontages and varied orientations, it provides a lot more privacy than typical row houses with 30' frontages."

This is not a theoretical layout, Hilderbrandt adds. It has actually been used—in Chicago. "And it's a very nice little neighborhood."

DEVELOPMENT COSTS

Clearing and grubbing	\$ 216
Grading streets	197
Street pavement	422
Storm drainage	490
Sanitary sewer	817
Water distribution	417
Curbs and gutter	540
Driveways	400
Sidewalks	168
Street trees	168
Grading/seeding	277
Total	\$4,166

Net density	16 units on 2 acres = 8 d.u./acre
Gross density	22 units on 2.81 acres = 7.83 d.u./acre
Average lot size	4,299 sq. ft.

Cul-de-sac

Total street	14,136 sq. ft.	643 sq. ft./d.u.
Total R.O.W.	18,244 sq. ft.	829 sq. ft./d.u.
Pavement width	20'	
R.O.W. width	24'	
Turnaround radius	45'	
Turnaround R.O.W.	94' x 94'	

Subcollector street (½ street and R.O.W.)

Pavement width	26'	5,975 sq. ft.	272 sq. ft./d.u.
R.O.W. width	40'	8,300 sq. ft.	377 sq. ft./d.u.

Setbacks

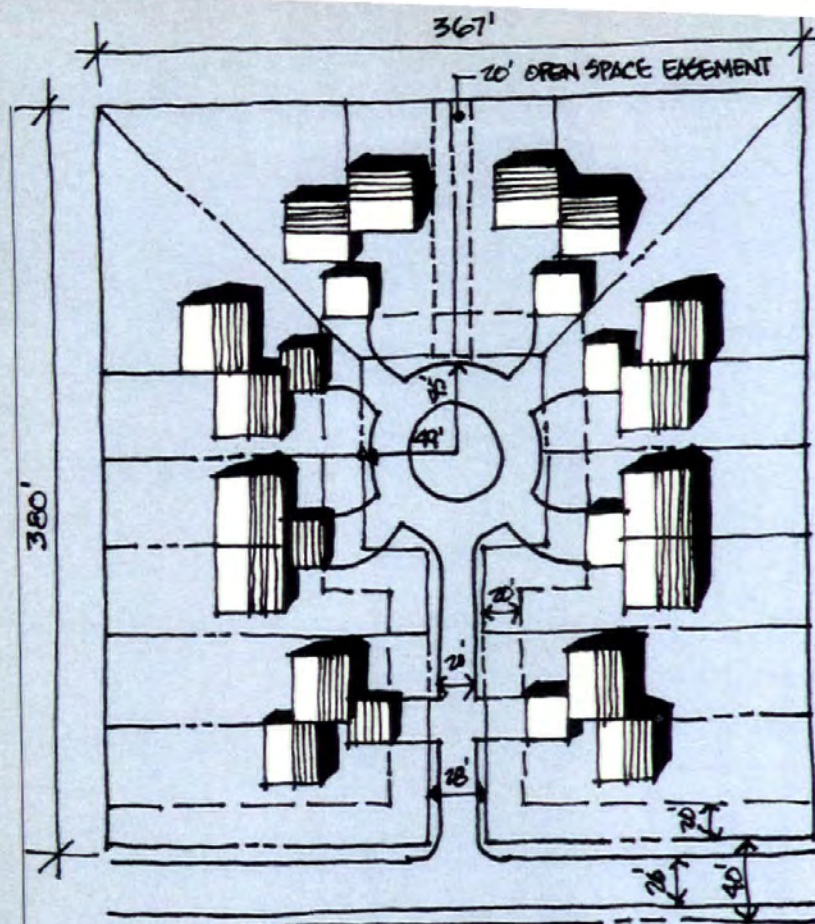
Front yard	18'
Side yard	8'

Building coverage

Average	1,200 sq. ft.
Garage	320 sq. ft.
Total coverage	41,520 sq. ft. x 22 = 33,440 sq. ft.

Driveway coverage

Average	400 sq. ft.
Total coverage	400 sq. ft. x 22 = 8,800 sq. ft.



Net density	16 units on 3.2 acres = 5 d.u./acre	
Gross density	16 units on 3.37 acres = 4.75 d.u./acre	
Average lot size	7,854 sq. ft. (min. 5,060 sq. ft.)	

Cul-de-sac			
Total street	7,400 sq. ft.	463 sq. ft./d.u.	
Total R.O.W.	13,804 sq. ft.	863 sq. ft./d.u.	
Pavement width	20'		
R.O.W. width	28'		
Turnaround radius	45'		
Turnaround R.O.W.	98' x 98'		

Subcollector street (1/2 street and R.O.W.)			
Pavement width	26'	4,768 sq. ft.	298 sq. ft./d.u.
R.O.W. width	40'	7,344 sq. ft.	459 sq. ft./d.u.

Setbacks	
Front yard	20'
Side yard	0' and 10'

Building coverage	
Average	1,225 sq. ft.
Garage	220 sq. ft.
Total coverage	1,445 sq. ft. x 16 = 23,120 sq. ft.

Driveway coverage	
Average	370 sq. ft.
Total coverage	370 sq. ft. x 16 = 5,920 sq. ft.

Duplexes at five per acre: \$4,275 per unit

Hilderbrandt describes this as a better alternative to four-per-acre detached houses than the zero-lot-line scheme.

"From the road," he says, "this looks like a group of very large single-family homes at 2 1/2 units per acre. There is no feeling of very narrow lots, even though they are actually only about 35' wide."

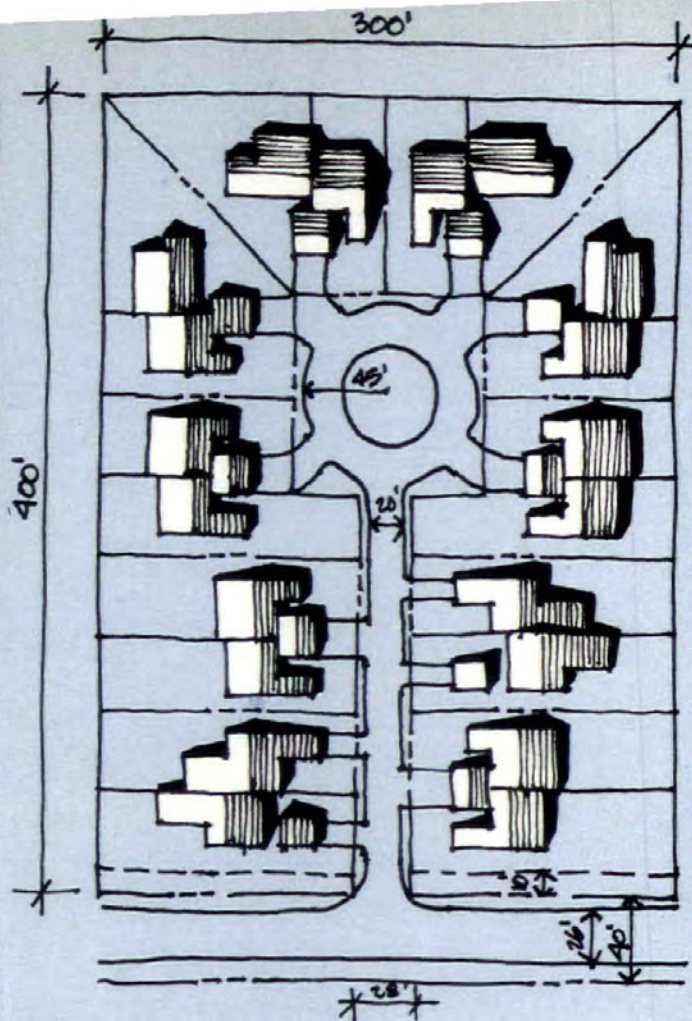
The absence of rear-yard walls is another advantage. There is a cost saving and, without walls, there is more space between houses backing up to each other on adjoining culs-de-sac.

"These are rather deep lots," says Hilderbrandt, "and a lot of builders would probably prefer wider lots and houses with more of a rambling look. But this is a very efficient layout, and the deep lots provide more attractive rear yards than shallow lots would."

"All things considered, the duplex looks like the most promising solution we have to the problem of getting higher densities with single-family houses."

DEVELOPMENT COSTS

Clearing and grubbing	\$ 332
Grading streets	198
Street pavement	356
Storm drainage	471
Sanitary sewer	711
Water distribution	375
Curbs and gutter	496
Driveways	370
Sidewalks	156
Street trees	216
Grading/seeding	594
Total	\$4,275



Net density	20 units on 2.75 acres = 7.27 d.u./acre
Gross density	20 units on 2.99 acres = 6.69 d.u./acre
Average lot size	4,888 sq. ft. (min. 4,000 sq. ft.)

Cul-de-sac

Total street	8,400 sq. ft.	420 sq. ft./d.u.
Total R.O.W.	15,204 sq. ft.	760 sq. ft./d.u.
Pavement width	20'	
R.O.W. width	28'	
Turnaround radius	45'	
Turnaround R.O.W.	98' x 98'	

Subcollector street

(1/2 street and R.O.W.)		
Pavement width	26'	3,900 sq. ft.
R.O.W. width	40'	6,000 sq. ft.

Setbacks

Front yard	20'
Side yard	10'

Building coverage

Average	1,100 sq. ft.
Garage	240 sq. ft.
Total coverage	1,340 sq. ft. x 20 = 26,800 sq. ft.

Driveway coverage

Average	320 sq. ft.
Total coverage	320 sq. ft. x 20 = 6,400 sq. ft.

Duplexes at 7 1/4 per acre: \$3,433 per unit

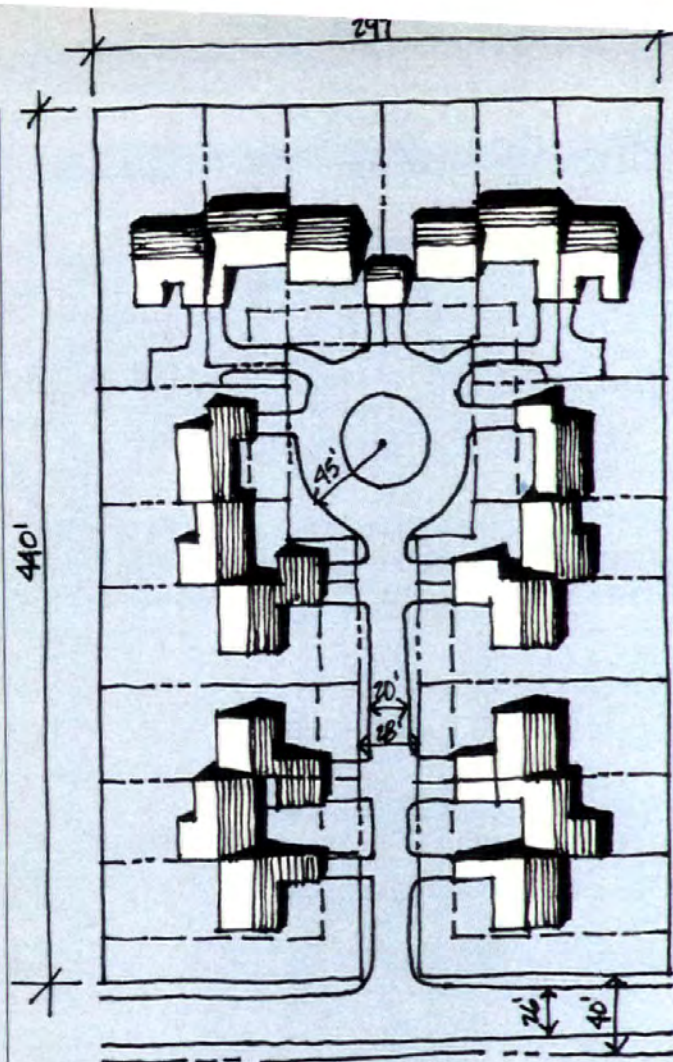
"We tried to push to what we thought was the high limit with duplexes," says Hilderbrandt, "and this is just about it. It works very well. The only real problem is the shallow rear yards in the units around the bulb."

This plan approaches townhouse density but with far more of a feeling of single-family houses. Lots average about 30' frontage, so the overall effect is of large homes on 60' lots.

"In most suburban communities," says Hilderbrandt, "you'd probably have trouble getting approval for density this high. But in a mixed-use subdivision, it might well be permitted in small clusters as an alternative to townhouses."

DEVELOPMENT COSTS

Clearing and grubbing	\$ 253
Grading streets	160
Street pavement	287
Storm drainage	426
Sanitary sewer	633
Water distribution	321
Curbs and gutter	402
Driveways	320
Sidewalks	120
Street trees	180
Grading/seeding	331
Total	\$3,433



Net density	18 units on 3.0 acres = 6.0 d.u./acre	
Gross density	18 units on 3.14 acres = 5.73 d.u./acre	
Average lot size	6,375 sq. ft. (min. 4,700 sq. ft.)	

Cul-de-sac		
Total street	8,999 sq. ft.	500 sq. ft./d.u.
Total R.O.W.	15,764 sq. ft.	876 sq. ft./d.u.
Pavement width	20'	
R.O.W. width	28'	
Turnaround radius	45'	
Turnaround R.O.W.	98' x 98'	

Subcollector street (½ street and R.O.W.)		
Pavement width	26'	3,861 sq. ft. 215 sq. ft./d.u.
R.O.W. width	40'	5,940 sq. ft. 330 sq. ft./d.u.

Setbacks		
Front yard	20'	
Side yard	10'	

Building coverage		
Average	900 sq. ft.	
Garage	240 sq. ft.	
Total coverage	1,140 sq. ft. x 18 =	20,520 sq. ft.

Driveway coverage		
Average	320 sq. ft.	
Total coverage	320 sq. ft. x 18 =	5,760 sq. ft.

Triplexes at six per acre: \$3,864 per unit

This is a compromise between duplexes and townhouses, but Hilderbrandt considers it an unsuccessful compromise. The per-unit development cost is higher than for duplexes built at one less unit per acre, chiefly because the lots have wide fronts. And by the same token, the lots are too shallow to provide enough rear yard for houses that are actually quite large.

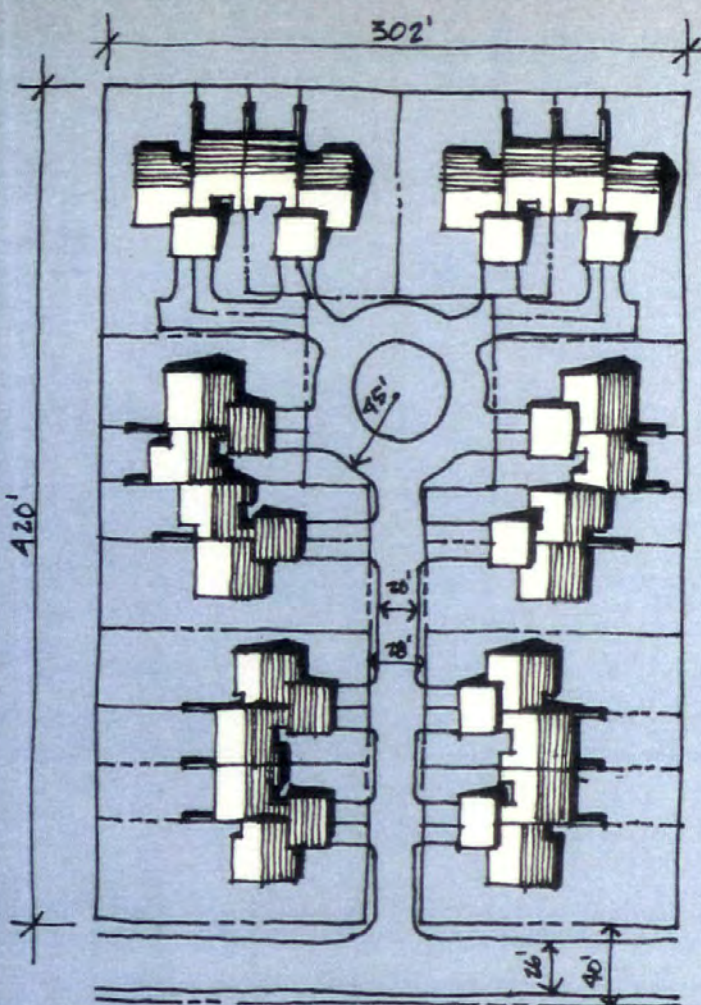
"I've seen this scheme tried," says Hilderbrandt, "and, with its big front yards, it can create a handsome streetscape. But people weren't sure whether these were single-family or townhouses, and they didn't sell well."

"I think the only way to make this layout marketable would be to sell it as a very luxurious townhouse program."

A last and less-than-desirable feature of this plan, in Hilderbrandt's view, is the view from the entrance of the cul-de-sac. "Instead of open space at the end of the cul-de-sac," he says, "you see a set of garage doors."

DEVELOPMENT COSTS

Clearing and grubbing	\$ 296
Grading streets	183
Street pavement	333
Storm drainage	421
Sanitary sewer	669
Water distribution	348
Curbs and gutter	460
Driveways	320
Sidewalks	144
Street trees	204
Grading/seeding	486
Total	\$3,864



Fourplexes at $8\frac{1}{4}$ per acre: \$3,138 per unit

Hilderbrandt considers this a much better compromise between detached houses and townhouses than the triplexes on the facing page.

"These are much closer to townhouses," he says, "and this is townhouse density. But the neighborhood will still feel quite open, and there is still adequate privacy and individuality."

One possible marketing advantage: two distinct pricing levels. Inside units, with narrow lots, can sell for appreciably less than end units with wider lots and three exposures.

The unpleasant view of the triplexes at the bottom of the cul-de-sac has been eliminated in this layout. The view from the entrance of the cul-de-sac is now a space between units.

DEVELOPMENT COSTS

Clearing and grubbing	\$ 215
Grading streets	137
Street pavement	250
Storm drainage	322
Sanitary sewer	607
Water distribution	300
Curbs and gutter	343
Driveways	398
Sidewalks	104
Street trees	150
Grading/seeding	312
Total	\$3,138

Net density	24 units on 2.91 acres = 8.25 d.u./acre
Gross density	24 units on 3.05 acres = 7.87 d.u./acre
Average lot size	4,628 sq. ft. (min. 2,940 sq. ft.)

Cul-de-sac

Total street	8,898 sq. ft.	371 sq. ft./d.u.
Total R.O.W.	15,764 sq. ft.	657 sq. ft./d.u.
Pavement width	20'	
R.O.W. width	28'	
Turnaround radius	45'	
Turnaround R.O.W.	98' x 98'	

Subcollector street (½ street and R.O.W.)

Pavement width	26'	3,926 sq. ft.	164 sq. ft./d.u.
R.O.W. width	40'	6,040 sq. ft.	252 sq. ft./d.u.

Setbacks

Front yard	20'
Side yard	10' on end units

Building coverage

Average	900 sq. ft.
Garage	240 sq. ft.
Total coverage	1,140 sq. ft. x 27,360 sq. ft.

Driveway coverage

Average	398 sq. ft.
Total coverage	398 sq. ft. x 24 = 9,552 sq. ft.

Can new houses be rated to

More precisely, can the industry devise a rating system that will certify new houses for energy efficiency in much the same way an EER now certifies a room air conditioner?

Yes and no, say 17 housing experts who met recently to discuss ways the industry could help solve the nation's energy problems. The discussion was co-sponsored by HOUSE & HOME and Owens-Corning Fiberglas.

The experts agreed that a certification program would help builders and buyers alike. But they pointed out that the variables inherent in homebuilding make a specific rating system impractical.

There are different house designs, siting conditions, standards of workmanship and styles of living. Each will affect the energy performance of a house—even identical houses built to the same standards on adjacent lots. Thus, the experts think it's impossible to apply one set of numbers equably to every new house.

Nevertheless, they say, the industry can (and should) come up with energy guidelines—possibly something as simple as a checklist of construction features—that will distinguish the energy-wasting houses from the energy-savers.

Here, in more detail, are: 1) the reasons why the experts would like to have a rating system; 2) some of the problems they think would hamper its development; and 3) what they believe an energy checklist would accomplish.

Were it possible, a rating system would be great It could help point builders in the right direction...

Younkman says builders need more specific data: "Very few of them understand all energy-related problems or the technology for solving them."

Johnson agrees: "When a guy selects energy-saving materials for his houses, he likes to be innovative; but he lacks the technical know-how."

And Olin says energy-wasteful houses are the result: "Many new houses are still like sieves as far as heat performance is concerned."

... and it could clear up a lot of misunderstandings

Younkman says some manufacturers don't communicate properly: "Builders get a lot of confusing information—improper labeling, for example. And test data vary from one manufacturer to another."

Schmitt warns that builders will be hurt by vague data: "A lot of misinformation is already beginning to filter into building codes."

And Johnson points out one consequence: "Some building inspectors won't let you put insulation in walls that are adjacent to masonry because 'it will rot out the walls.'"

But there's no practical way to set up a system For one thing, homebuilding is too imprecise...

Younkman cites one problem: "There's less exterior-wall area in a square house than in a rectangular house with the same square footage. So how can you assign a numerical rating to a house's side-wall insulation?"

Schmitt says glass poses another problem: "The number and quality of windows and patio doors in a house have a big effect on its energy efficiency."

Greiner pinpoints an obstacle caused by different designs: "You can't get accurate per-sq.-ft. energy budgets when you're comparing one-story, two-story and split-ranch plans."

Johnson discusses product variations: "The R-11s [insulation values]—they're not all the same. It depends on what material is used and who puts it in."

And Huntoon cautions about product quality: "A component can be controlled while it's being manufactured. But once it's out in the field, the control can be lost."



Jack Snell,
National Bureau
of Standards



Dan C. Quigley,
Federal Energy
Administration



Tom Loberg,
American
Gas Association



James McCullough,
FHA



R. B. Fitch,
builder,
Carboro, N.C.



Stephen Peterson,
National Bureau
of Standards



Maxine L. Savitz,
Energy Resources
Development
Administration



Guy O. Mabry,
vice president,
insulation operating
Owens-Corning Fib

energy efficiency?



Harold Olin,
S. League of
Savings Associations



Paul Greiner,
Edison Electric
Institute



Ralph Johnson,
Director, NAHB
Research Foundation



Bob Schmitt,
builder,
Strongsville, Ohio



Dave Younkman,
consultant,
Ryan Homes



Ron Gebhardt,
vice president,
Ryan Homes



Jerome Jakubovitz,
American Institute
of Real Estate
Appraisers



Maxwell Huntoon,
executive editor,
John Goldsmith,
editor, HOUSE & HOME

... and siting conditions vary

Loberg warns about location vis-a-vis energy usage: "When we moved a family back and forth between two identical houses built next door to each other, there were substantial differences in the amount of energy the family used."

And Younkman tells what one test showed about siting and infiltration: "A group of hillside houses facing in the same direction had different infiltration readings—even with no one living in them."

What's more, living styles are different

Schmitt has learned this from experience: "Energy efficiency is a people problem as much as a technical problem. Will homeowners close their fireplace damper, clean filters at least once a month, shut their garage doors?"

Loberg agrees: "While the design of a house has a lot to do with heat loss, the occupants make a substantial contribution . . ."

And Savitz cites a New Jersey study to prove the point. "Energy usage was monitored in two adjacent houses occupied by families of equal size and in the same economic bracket. Two-and-one-half times more energy was used in one house than the other."

But if not ratings, at least we can have guidelines

They can be in the form of a shopping list for buyers . . .

Greiner explains the need: "We haven't sold the economics of energy-saving houses. If we can, consumers will recognize the value."

Goldsmith suggests some parameters: "A checklist of products and design criteria can be the starting point for judging what a builder offers."

Olin foresees the results: "Consumers will learn to recognize that some houses are energy hogs and others are energy misers."

... and a merchandising tool for builders

Greiner predicts the effects: "Once construction techniques are upgraded, builders will have a much stronger sales pitch."

Fitch agrees: "When the marketplace knows what energy-saving features to look for, builders will have to supply it to be competitive."

And so does Johnson: "As soon as a few hundred builders lead the way, the others will follow to stay in business."

And now
the basic townhouse, or...

How to build at \$13.88 a sq. ft.

That's the construction cost for this 212-unit townhouse project in suburban Montgomery County, Md. And it compares with the \$15-to-\$17 a sq. ft. for which the developer, Kettler Brothers, builds other attached homes in the same area.

Kettler squeezed the townhouses into double-loaded buildings in which the three-level units sit back-to-back and side-to-side. Twelve buildings, each housing 16 to 20 units, occupy the 6.2-acre tract.

This building plan helped Kettler bring the 1,345-sq.-ft. townhouses to market for less than \$35,000. The sales prices translate to \$25.89 a sq. ft.

The homes have only one windowed wall, but this has not been a marketing disadvantage. The project has moved fast: the 108-unit first phase, priced from \$30,950 to \$34,950, sold out within 48 hours of opening last July.

"And there's a waiting list for the 104 units of the second phase," says Chairman Milton Kettler. "We'll open that this summer."

How the building plan saved money...

First, there are fewer exterior walls to build because all interior units share three common walls. The savings: an estimated 65¢-to-75¢ a sq. ft. in wall area.

Next, the roofline was kept low. If Kettler had been able to use trusses, the slope of the roof probably wouldn't have mattered much. But trusses could not be used; the townhouses have to be split all the way up to the ridge. This higher slope would require extending the double party walls up to the rooflines, and that would be expensive. Hence Kettler's two-in-twelve low-slope roof saved about \$83 a unit.

Finally, the buildings have almost no breaks in elevation or grade. That saved on materials and labor for everything from foundation slabs and footings to walls and rooflines.

...and the floor plan saved more...

The developer offered only one basic plan and ruled out all customer options. But to add variety to the two-bedroom layout and to permit a range of prices, Kettler built the third level three ways:

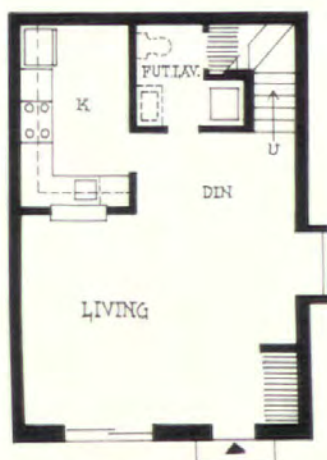
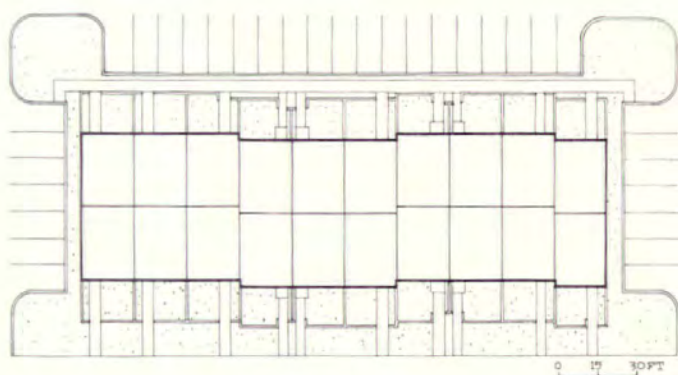
- In 60% of the units, this 375-sq.-ft. space is left unfinished.
- In 20%, a third bedroom is added.
- And in the other 20%, two extra bedrooms and a second bath are provided.

"This made it seem as if we were offering three plans," says Charles V. Phillips Jr., Kettler's residential chief. "It allowed buyers a choice in a model that was completely pre-planned."

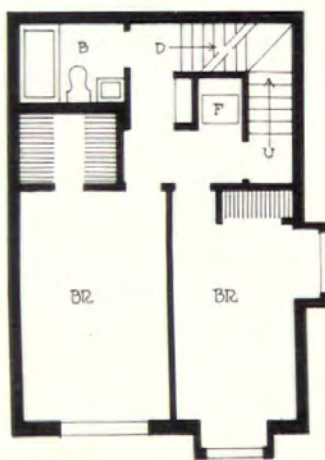
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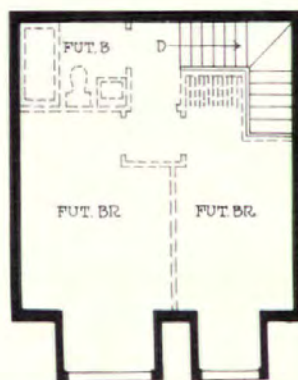
Back-to-back arrangement of units (shown in photo above and building plan at right) helped reduce construction costs to \$13.88 a sq. ft. Costs were also held down by offering one basic floor plan (at right, below) and ruling out customer options. But the 375-sq.-ft. third floor was completed in three ways: in 60% of the units, the space is unfinished; in 20% a third bathroom is added; and in 20%, two extra bedrooms and a bath are finished off. This mix was on target because most buyers wanted only two bedrooms. They average 28 years of age, are mostly move-ups from rentals and earn modest salaries (the average: \$16,000 a year). And while two-thirds are married, only half of these couples have children. Architect: Jim Milady.



FIRST LEVEL



SECOND LEVEL



THIRD LEVEL

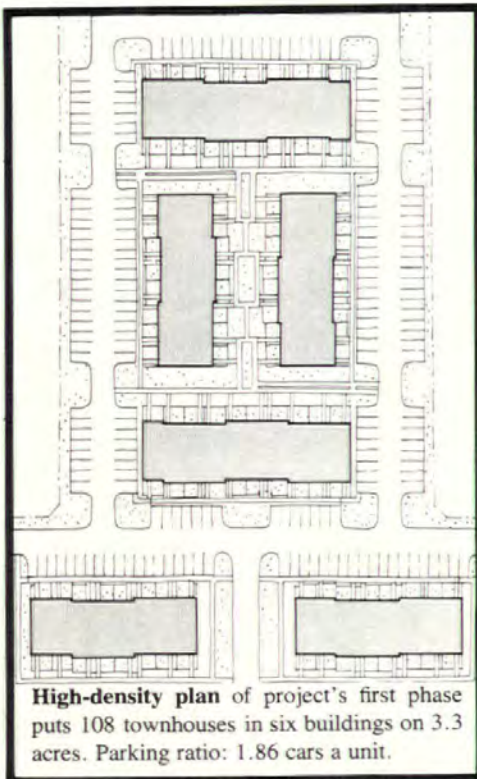
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Fenced-in front yards are used for private outdoor living because the homes have no back yards. Ownership is fee-simple; mandatory homeowner association membership entitles buyers to recreational facilities in the 2,200-acre PUD in which the project is situated.



\$13.88 a sq. ft.

CONTINUED



High-density plan of project's first phase puts 108 townhouses in six buildings on 3.3 acres. Parking ratio: 1.86 cars a unit.

... and the builder saved on equipment ...

The single-plan approach also enabled Kettler to standardize purchasing.

All townhouses use the same 1½-ton heat pump and an identical plumbing system. There is almost no variance in kitchen appliances, carpeting and wall paint, so these items could be bought in bulk at discounts.

"However, these were the same materials that we put into our \$100,000 homes," says Jim Henry, the builder's manager for residential purchasing and estimating. "We cut costs but not corners; buyers got a tightly engineered, quality unit with a minimum of waste."

And by standardizing, Kettler received an unexpected bonus: subcontractors' bids came in

lower than expected because there were no unknowns.

Kettler built full-scale prototypes to find still other ways to squeeze costs. One result: open-web trusses between floors, spanning 19 feet. That saved \$50 to \$75 a unit because they are cheaper than the steel beams they replace and offer space for utility lines without the need for ceiling drops. When sales opened, the prototypes became the models for the first phase.

... and development costs were low

They would have to be low, of course, with a density of 24 to the acre. Specifically:

- The high net density obviously reduces raw-land costs.
- It saves on utility runs; providing water, electricity and sewers to 20 units in one building costs less than servicing 20 units spread around the site in several buildings.
- And by clustering parking in a few centralized locations, the builder achieved additional savings for curbs and gutters and storm sewers over what would have to be spent if each unit was provided with its own parking space.

"These factors helped bring per-unit development costs down to \$2,900," Kettler explains. "Normally, we spend around \$4,100 to develop each conventional townhouse lot."

The project's density is three times higher than for other townhouses nearby. That's because Montgomery County agreed to trade-off higher densities for low-priced housing in areas where restrictive zoning had made it impossible to build such housing at existing densities.*

One area affected was Montgomery Village, the 2,200-acre PUD north of Washington, D.C. that Kettler has been developing since 1967. That's why this project—the McKendree Townhouses—is sited in the midst of this community of higher-priced housing. —JOEL G. CAHN

*Under the provisions of a Moderately-Priced Dwelling Unit Ordinance, passed by the County Council in 1974.

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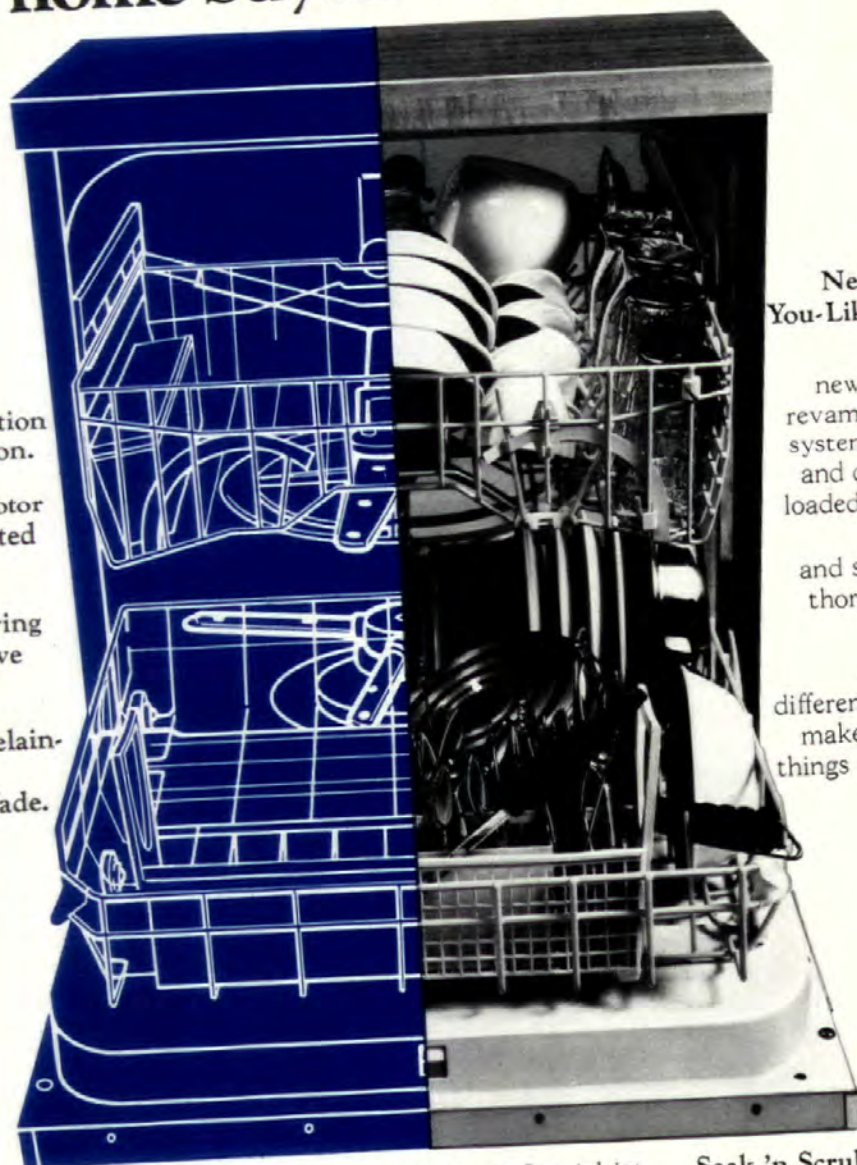
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Pots and pans can be put in either rack and come out thoroughly clean because of the up and down, all-around scrubbing action.

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recirculation of food soil. Special jet spray cleans the filter automatically.



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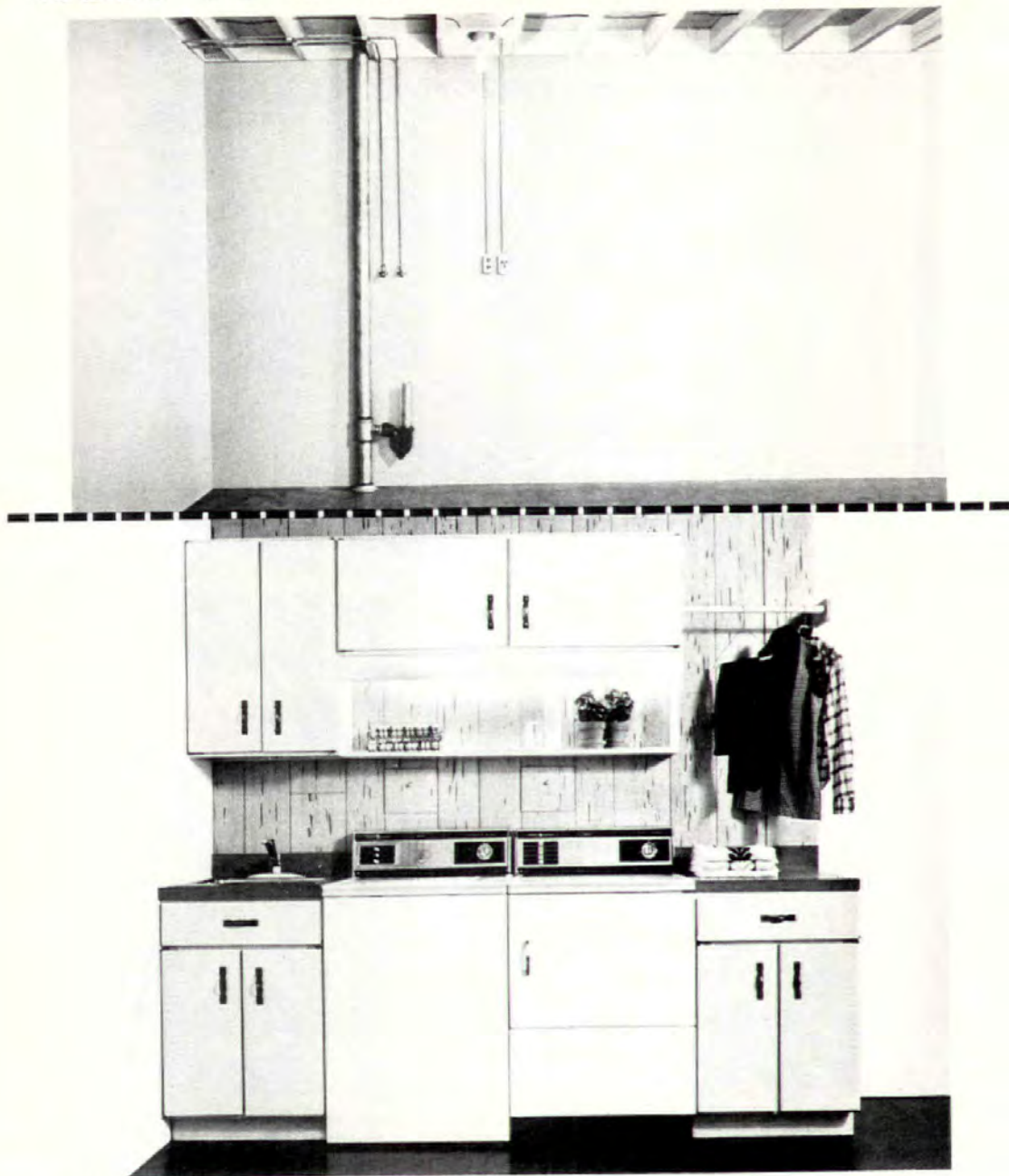
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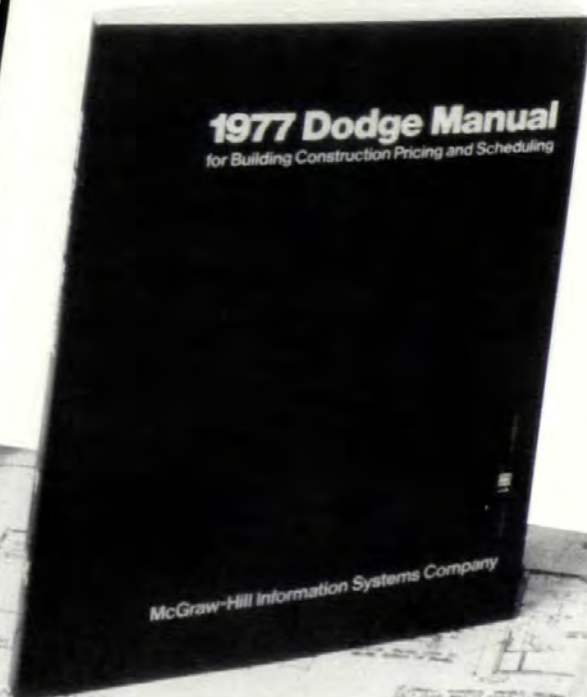
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PRODUCTS

Kitchens 110

Kitchens 113

Kitchens 114

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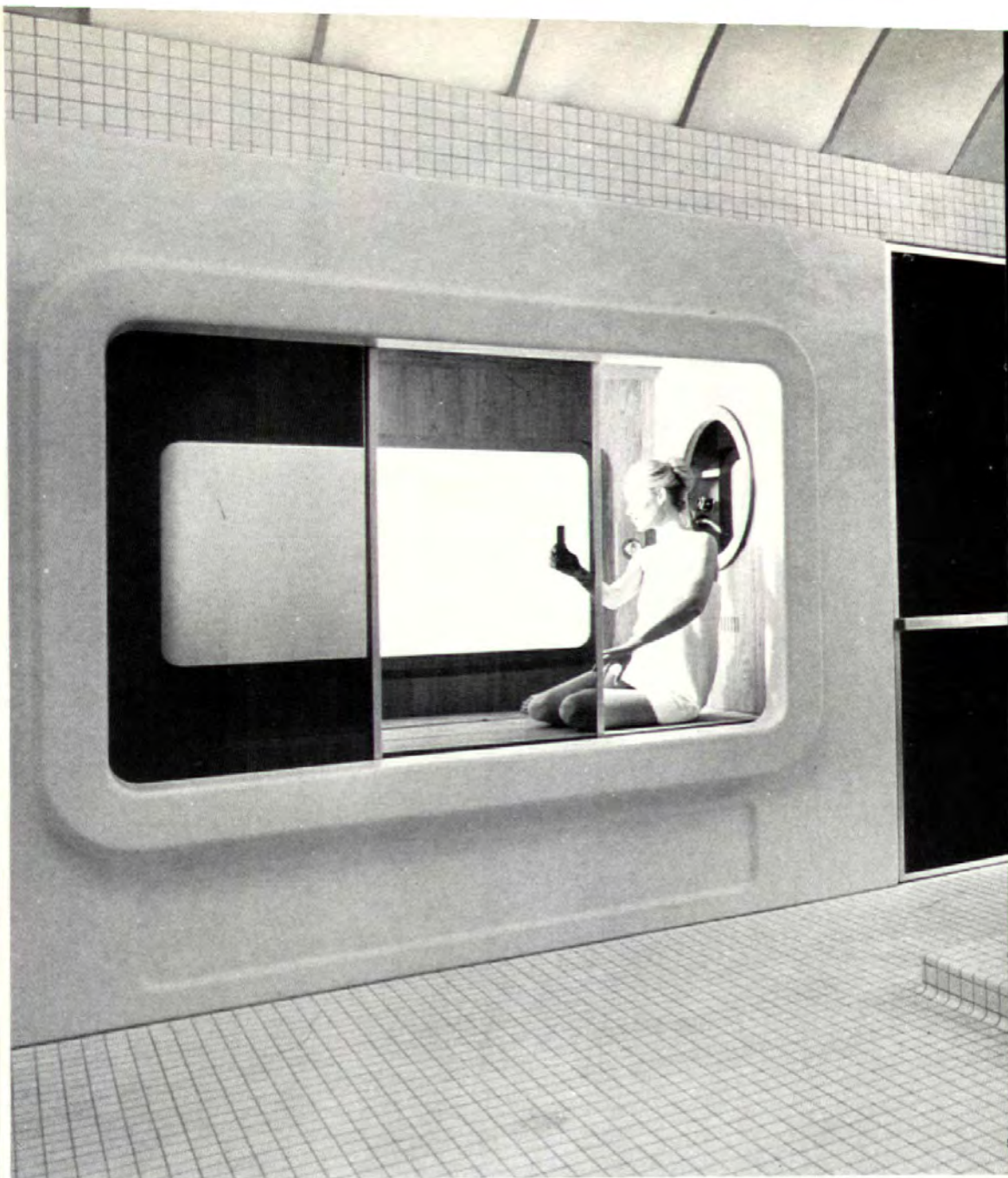
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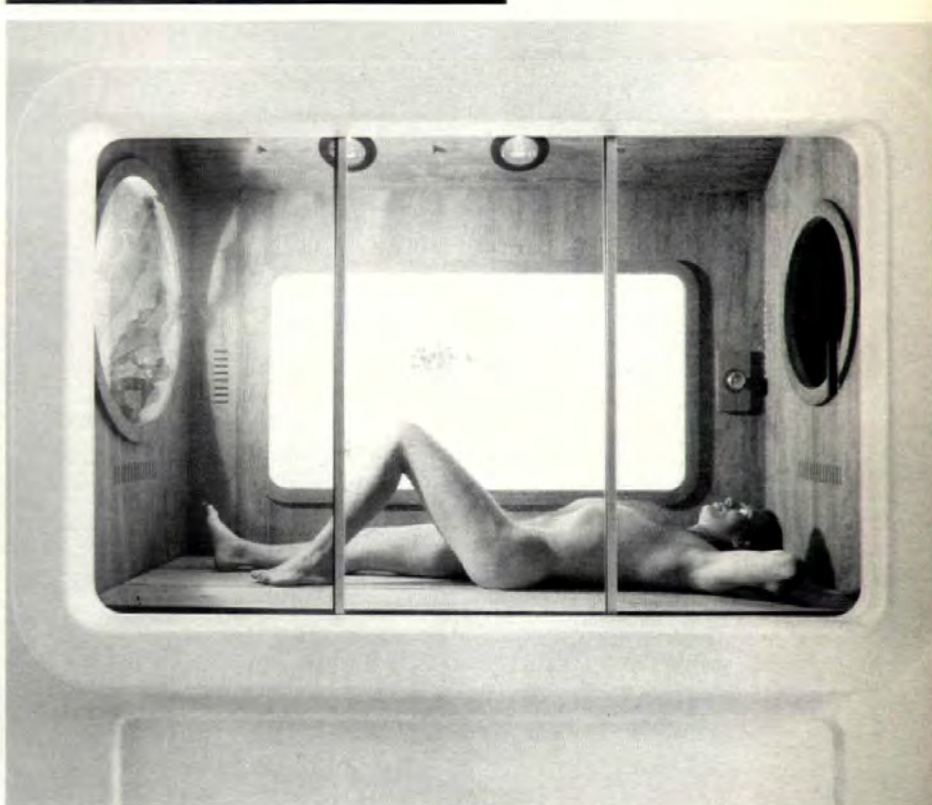
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Environment: A sun-and-fun cubicle for the luxury bathroom

It's a tropic vacation built into the house.

In a 6'10" by 3'2" enclosure one can be warmed by "Baja sun and jungle steam," soaked by "spring and tropic rains" and buffeted by "Chinook winds."

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weather phase. Start, stop and hold buttons are close at hand.

A hand-held shower is within reach in a porthole storage cabinet. And another porthole can look out on a terrarium, aquarium or the outside world.

A fiber glass fascia panel, a stereo set and a silk screen painting on a lighted back panel are available as extras.

Climate, to taste, is manufactured by four heat lamps, four sun lamps, six 24-carat gold-plated spray heads, a steam generator and two warm-air circulating systems. Kohler, Kohler, WI. *Circle 275 on reader service card*



Lightweight disposer, "Thru-the-Sink," has a simplified installation procedure. The 6 1/4 lb unit is lowered through the sink opening (A) and locked into place with a slip-on snap-ring (B & C). Then electrical and plumbing hook-ups are made (D). The compact disposer requires less under-the-sink space than conventional models. Whirlpool, Benton Harbor, MI. Circle 200 on reader service card



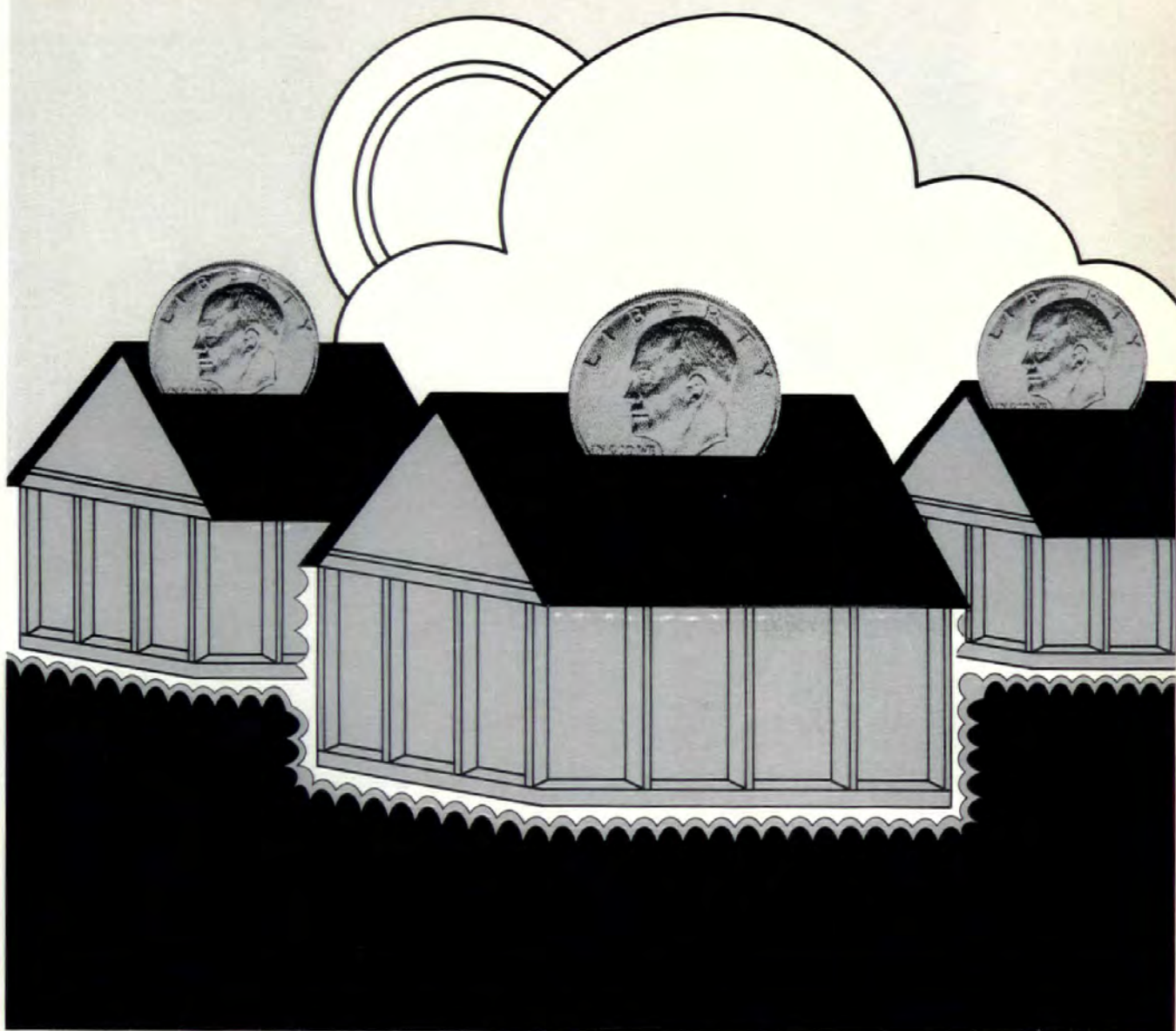
Two-handle faucet, "Crystal-Glo," features a "Brad-seal" cartridge guaranteed against leaks or drips. Unit has an optional swivel spray aerator. Bradley, Menomonee Falls, WI. Circle 203 on reader service card



Front-loading washer, "New Generation" (left), uses less hot water and detergent than top-loading machines. Wash tub tumbles clothes into hot sudsy water 52 to 62 times per minute. Two deep rinse cycles follow. White-Westinghouse, Pittsburgh, PA. Circle 201 on reader service card

An 18" wide dishwasher, "Space-Saver" (below), provides versatility in kitchen planning. The narrow unit which holds up to eight place settings has all the features of conventional units including a pot cycle and a choice of water levels. Sears, Chicago. Circle 202 on reader service card





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Electric "Combo-Grille" (above) has four burners and a built-in family-size grill. The grill comes with aluminum griddle and cutting board. Modern Maid, Chattanooga, TN. Circle 207 on reader service card

Ice maker/refrigerator, "Combo 19" (below), produces 22 lbs. of cubes. The unit, with a 2.1 cu. ft. refrigerator area, is 28" high, 20 3/4" wide and 21 1/2 inches deep. U-Line, Milwaukee, WI. Circle 208 on reader service card



Cabinets (above), part of the "Nottingham" line, feature an embossed diamond pattern reminiscent of old leaded windows. Units, with antiqued hinges and pulls, have solid hardwood frames and pecan veneer doors. United Cabinet, Indianapolis, IN. Circle 209 on reader service card

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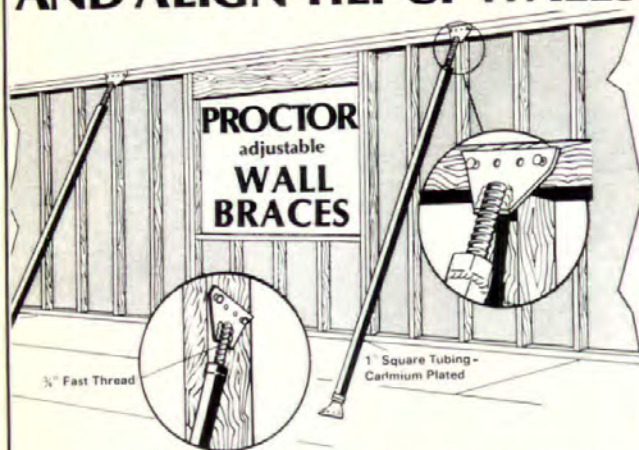


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KITCHENS



Radarange® cooking center (above) has an eye-level microwave oven and conventional electric lower oven. Glass-ceramic-top range is available in gold, avocado, coppertone or white. Amana, Amana, IA. Circle 204 on reader service card



“Whirlaway” disposer (left) has 360° stainless steel swivel impellers to eliminate jamming. Unit has reinforced polyester drain housing to prevent corrosion. Anaheim, Anaheim, CA. Circle 205 on reader service card



Self-cleaning electric range (above) features glass backguards and “Sparkling Glass” oven doors. Unit has “Meal Minder Timer,” glass-surface electric cooktop, removable oven door and “no-spillover” cooktop edge. Magic Chef, Cleveland, TN. Circle 206 on reader service card

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Three-compartment sink, "Cuisine Centre" (above), is a stainless steel unit with a satin finish. Sink features a dual-handle mixing faucet and retractable spray. Elkay, Broadview, IL. Circle 210 on reader service card

Countertop microwave oven, "Multi-Matic" (below), has temperature controls for four regular and automatic cooking cycles. Unit features a keep-warm setting. Panasonic, Secaucus, NJ. Circle 211 on reader service card



Modular wood cabinet system, "Langley" (above), is shown in pecan oak. Units feature maintenance-free finish, oven-cured for durability. Cabinets have adjustable shelves and all-wood drawers with side-mounted roller bearing suspension. Excel, Lakewood, NJ. Circle 213 on reader service card



Cabinetry (above), part of the "Bellaire" collection, is shown with natural wood fronts and Formica casework. Cabinets, also available with Formica fronts, come in a choice of 6 finishes and 18 colors. St. Charles, St. Charles, IL. Circle 212 on reader service card



Gas range (above) features automatic pilotless ignition which reduces gas consumption by approximately 30%. The feature eliminates heat build-up in the kitchen caused by pilot lights. Sixteen models have the pilotless ignition. Caloric, Topton, PA. Circle 214 on reader service card

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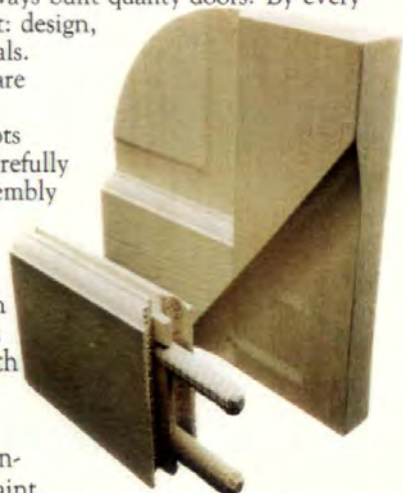
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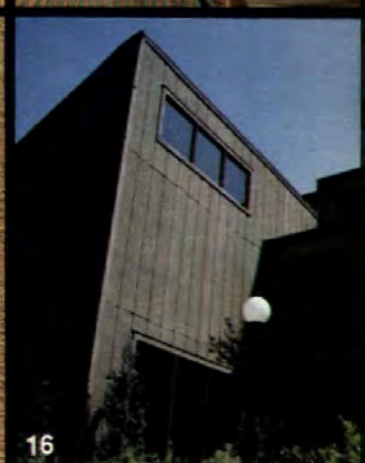
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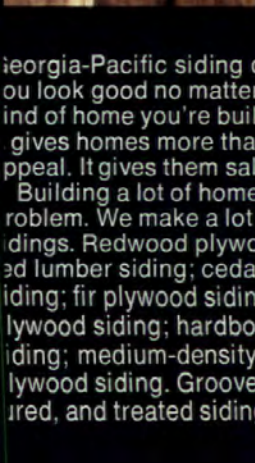
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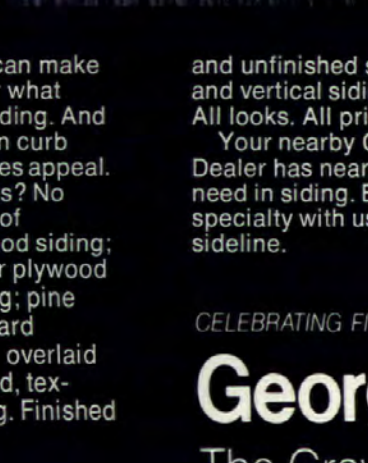
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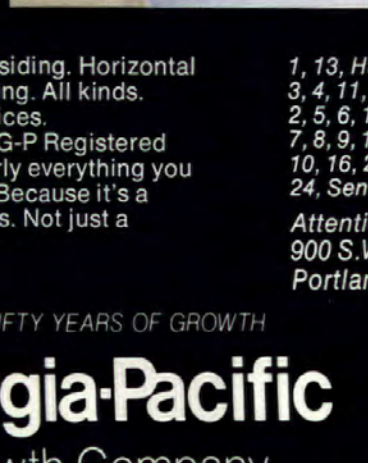
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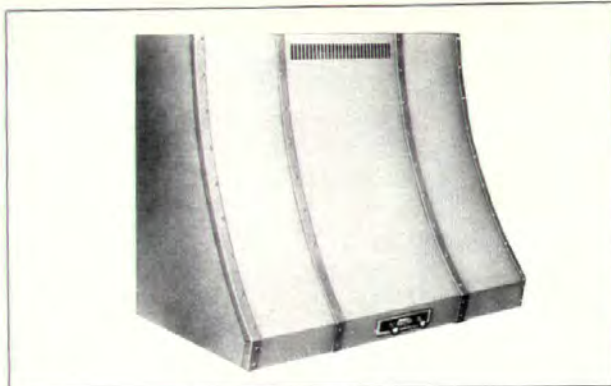
Combination range (above) has an upper microwave oven and a gas cooktop and continuous-cleaning oven/broiler below. Microwave oven has two timer dials and a "Selector Control." Tappan, Mansfield, OH. Circle 220 on reader service card



Laminated plastic, "Light Elm Burl" (left), simulates the look of woodgrain. This composition of dark brown swirls is suitable for bar tops and counter tops. Wilson Art, Temple, TX. Circle 221 on reader service card



Triple sink (below), part of the "Florentine Group," features a fluorescent light as standard. Unit, with pop-up drains, comes with a cutting board and dish drainer. Just, Franklin Park, IL. Circle 222 on reader service card



Canopy range hood, "Alpine" (above), has a hammered finish accented by smooth riveted straps. Available ducted or ductless, UL-listed unit comes in 3 widths. Broan, Hartford, WI. Circle 223 on reader service card



Electric combo grill (left) can be built into a kitchen counter. An interchangeable griddle is available. Hinged cover serves as a warming tray. Edison, Chattanooga, TN. Circle 224 on reader service card



Range hood/fan (above) has a black glass front panel with chrome accent strips. Convenient rotary switches for light and fan are concealed beneath the front panel. Unit, available in 30" and 36" widths, comes in five colors. NuTone, Scovill, Cincinnati, OH. Circle 225 on reader service card

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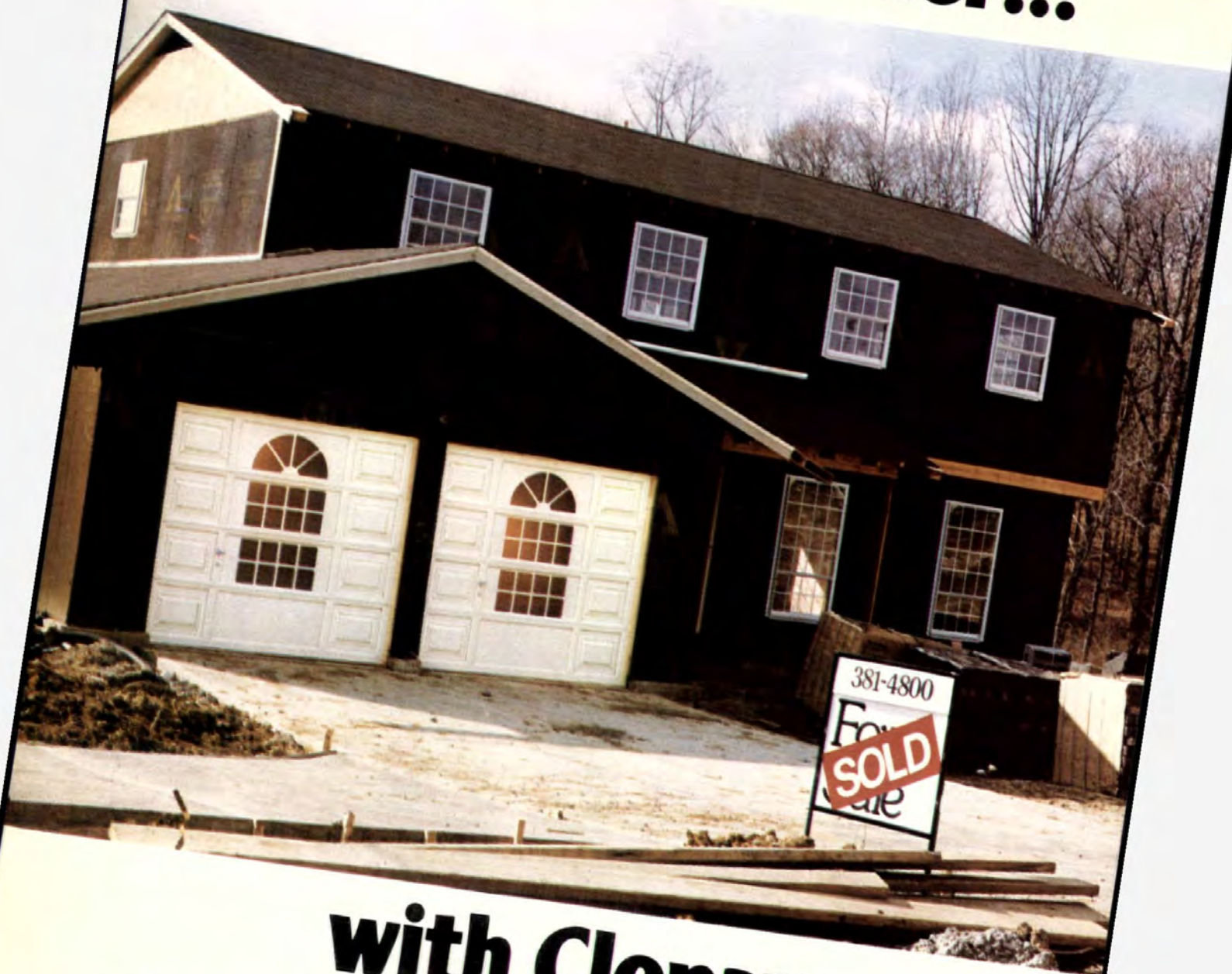


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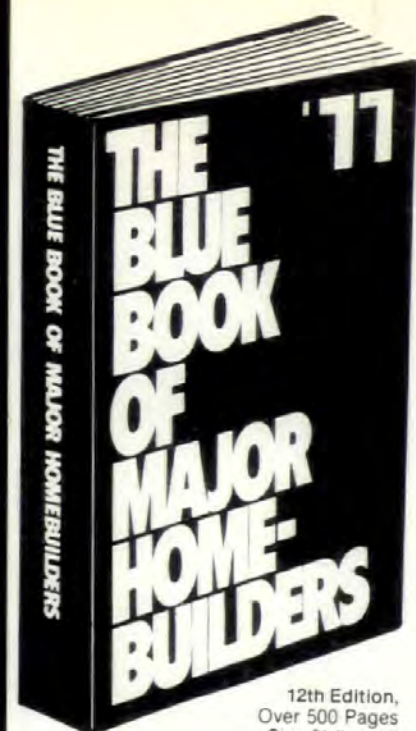
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HH-4/77



Pecan wood cabinetry, "Heirloom" (above), has a raised panel design. Units, finished with a 20-step process, have adjustable shelves and self-closing hinges. IXL, Elizabeth City, N.C. Circle 215 on reader service card



Microwave oven, Memory-matic™ (above), features an automatic temperature sensor. The unit is programmed to shut off when the desired temperature is reached. Litton, Minneapolis, MN. Circle 216 on reader service card

Cooking center (below) features an upper microwave oven and a lower electric self-cleaning oven. The microwave unit offers three power levels. G.E., Louisville, KY. Circle 217 on reader service card

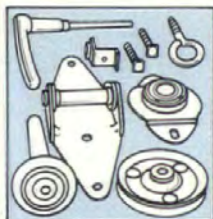


Economical cabinetry, "Clearbrook" (above), features all-wood construction. Cabinets, with cutlery dividers in drawers, come in a range of sizes. Boise Cascade, Berryville, VA. Circle 218 on reader service card

Over/under range (below) has an upper microwave oven and a pilotless gas cooktop and conventional oven below. The gas oven is continuous cleaning. O'Keefe & Merritt, Mansfield, OH. Circle 219 on reader service card



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"Char-Grill" indoor barbecue (above) is a drop-in unit with 15"x22" cooking surface. Unit, which comes in gas, electric and charcoal-fired models, features grill that tilts from level position to 15°. Home Metal Products, Plano, TX. Circle 246 on reader service card



Compact kitchen (above) is only 30" wide. Three-in-one model has 6 cu. ft. refrigerator with freezer compartment, two-burner electric cooktop and right- or left-hand porcelain sink. Metal base comes in white or coppertone. Cervitor, South El Monte, CA. Circle 247 on reader service card

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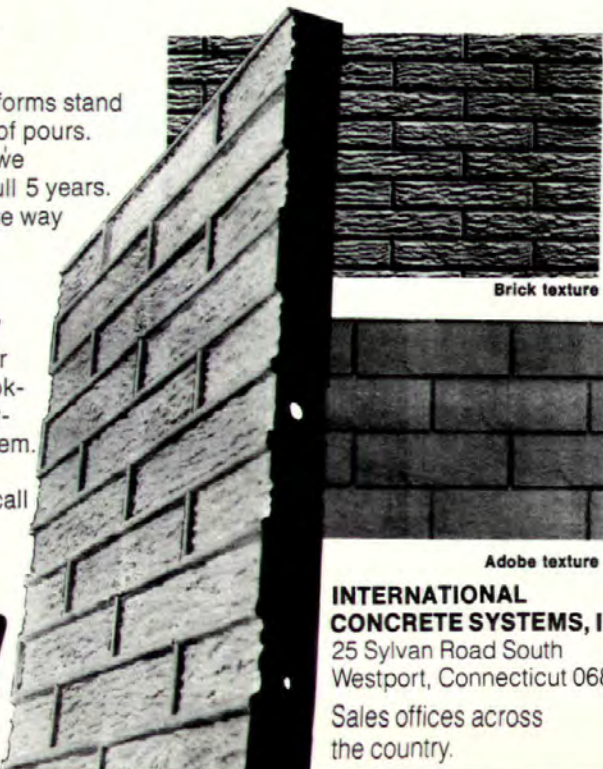
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Wayne Ratkovich is president of the firm of Wayne Ratkovich Associates, which develops new and existing commercial and industrial buildings. His company is currently in partnership with Wells Fargo Mortgage Investors, manages developments for New England Mutual Life Insurance Co., and is developing the Scripps Ranch Business Park in San Diego in partnership with Societa Generale Immobiliare. Mr. Ratkovich was formerly a vice-president with Coldwell Banker & Co. where he handled negotiations for more than \$35 million in industrial sales and leases. He is currently on the steering committee of the National Association of Office and Industrial Parks, Southern California chapter.

Robert Holmes is president of Oltmans Construction Co., one of the largest commercial/industrial building firms in the country. Acting as both a contractor and an equity partner, Oltmans builds offices, industrial buildings, warehouses and international headquarters facilities. Mr. Holmes is president of the California Builders Council and a member of the American Arbitration Association.

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H&H/housing 4/77 **133**



Fireplace (above) with a low profile design can be easily stacked for multi-story construction. Lightweight zero-clearance unit has spark arrestor. Firemagic, Santa Fe Springs, CA. Circle 226 on reader service card

Fireplace enclosure (right) has heat-tempered glass doors which eliminate the hazards of sparks. Glass wool insulation assures a tight seal around irregular openings. Heritage, Akron, OH. Circle 227 on reader service card



Zero-clearance fireplace (above) provides radiant heat and circulates heated air. Quiet-operating power circulator fan is controlled by off/on switch. Western, Luverne, MN. Circle 229 on reader service card



"Convect-O-Heater" (left) reduces home heating costs and conserves energy. The unit diverts a substantial amount of fireplace heat into the room. General Products, West Haven, CT. Circle 230 on reader service card



Fireplace, "Energy Miser" (above), is a wood-burning, heat-producing unit designed to conserve fuel. Cool room air is drawn into a heating chamber completely sealed off from the firebox, warmed and recirculated. Preway, Wisconsin Rapids, WI. Circle 228 on reader service card



Franklin fireplace/heater (above) has a firebox of one-piece all heavy-gauge steel. Doors, upper front and side trim are of handcrafted cast iron. Unit, available in two models, will not crack, warp or burn out. U.S. Stove, South Pittsburg, TN. Circle 231 on reader service card

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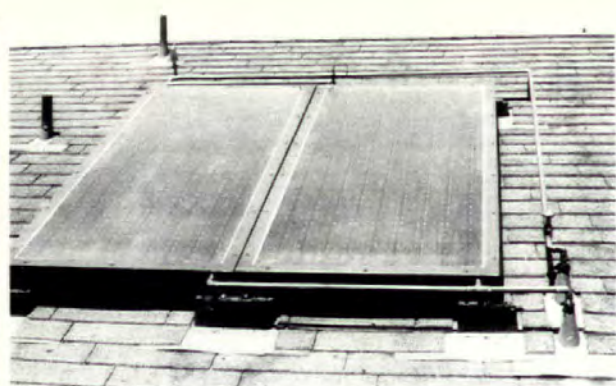
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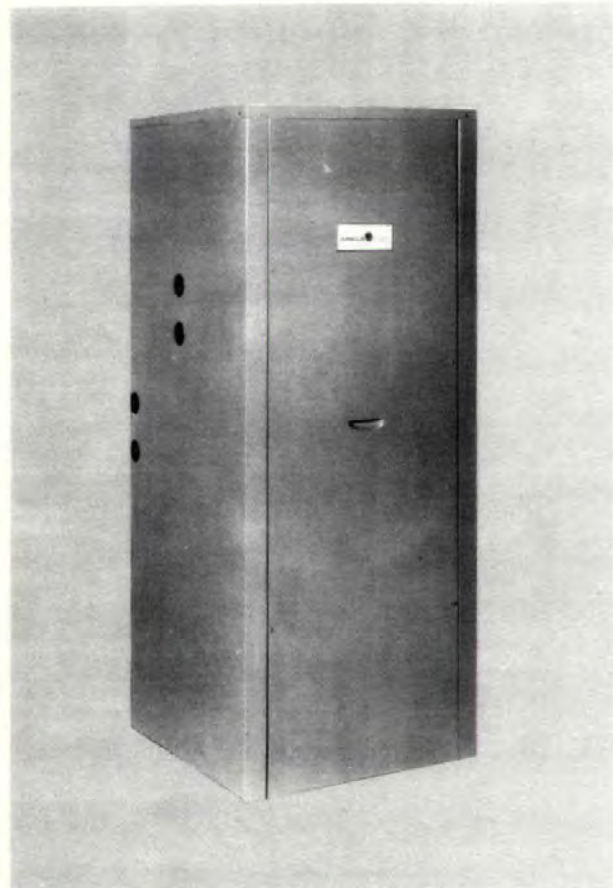
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Solar collector panels (above) feature heavy insulation on the perimeter and bottom and thermally insulated absorber plates. Units have copper waterways. Raypak, Westlake Village, CA. Circle 238 on reader service card

Heat pump, "Climator II" (right), features fuel-saving CliMizer™ control. Device balances the operation of the unit and furnace to provide constant comfort. Mueller Climatrol, Edison, NJ. Circle 239 on reader service card



Solar air conditioner, Solaire® 36 (above), is designed as an additional component in an existing solar system. The unit, low in noise and vibration levels, produces 3 tons of cooling from 195°F solar-heated water. Arkla, Evansville, IN. Circle 240 on reader service card



Temperature controller (above) is suitable for use in applications where solar energy is used as a heat source. Unit, housed in a galvanized steel box, is surface-mounted. Dan-Mar, Huron, OH. Circle 241 on reader service card



Fan-forced wall heater (above) features built-in thermostat. Closely spaced grill bars direct aid downward to effectively distribute heat. Emerson-Chromalox, St. Louis, MO. Circle 242 on reader service card



Downflow unit heater (left) can be used in installations with ceiling heights ranging from 10 to 30 feet or more. Energy-saving unit comes in two body dimensions. TPI, Johnson City, TN. Circle 243 on reader service card



Electronic air cleaner, "HEACI" (left), is designed to fit Lennox residential up-flo gas and electric direct-drive furnaces. UL-listed unit is easy to install. Lennox, Marshalltown, IA. Circle 244 on reader service card



Split-system heat pump (above), part of the HS series, is fully weatherproof. The cabinet, of galvanized steel, is bonderized and primed. The easy-to-install unit is available in two- and three-ton sizes. Westinghouse, Pittsburgh, PA. Circle 245 on reader service card

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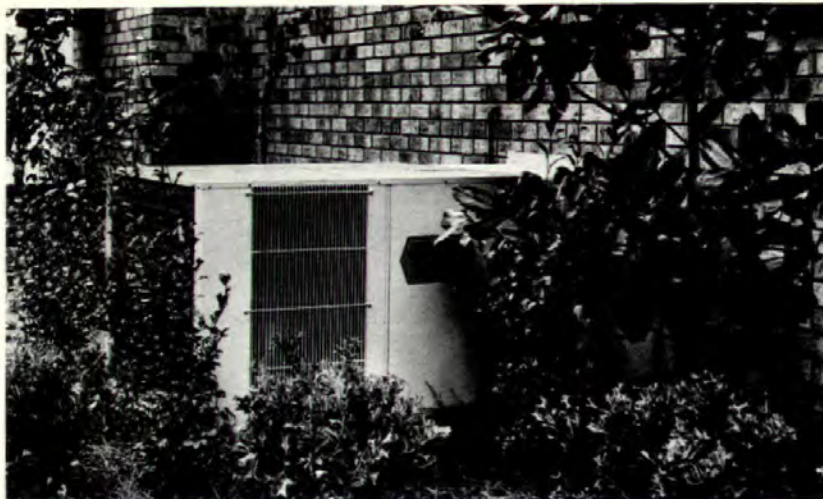


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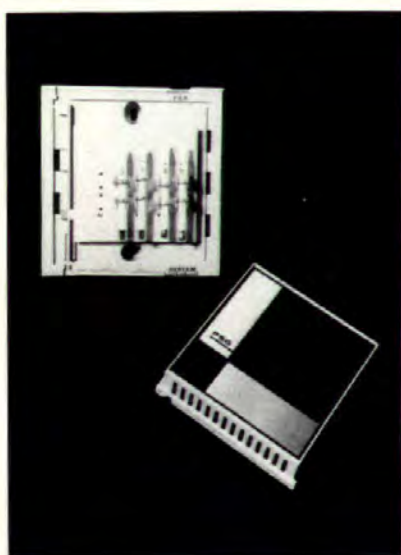
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Single-package heat pump (above) can be used for rooftop, slab and through-the-wall applications. Easy-to-install unit, available in 13 models, features internal overload protection. York, York, PA. Circle 235 on reader service card



"Accustat" thermostat (left) uses pre-set mercury sensors to control temperature. Unit, with integral locking cover, is unaffected by contamination or vibration. P.S.G., Perkasie, PA. Circle 236 on reader service card

"Weathermaster III" heat pump (below) features compressor and controls in a separate cabinet for installation in a closet, basement or garage. "Optimizer" control makes it possible to add pump to gas, oil or electric furnace. Carrier, Syracuse, NY. Circle 234 on reader service card





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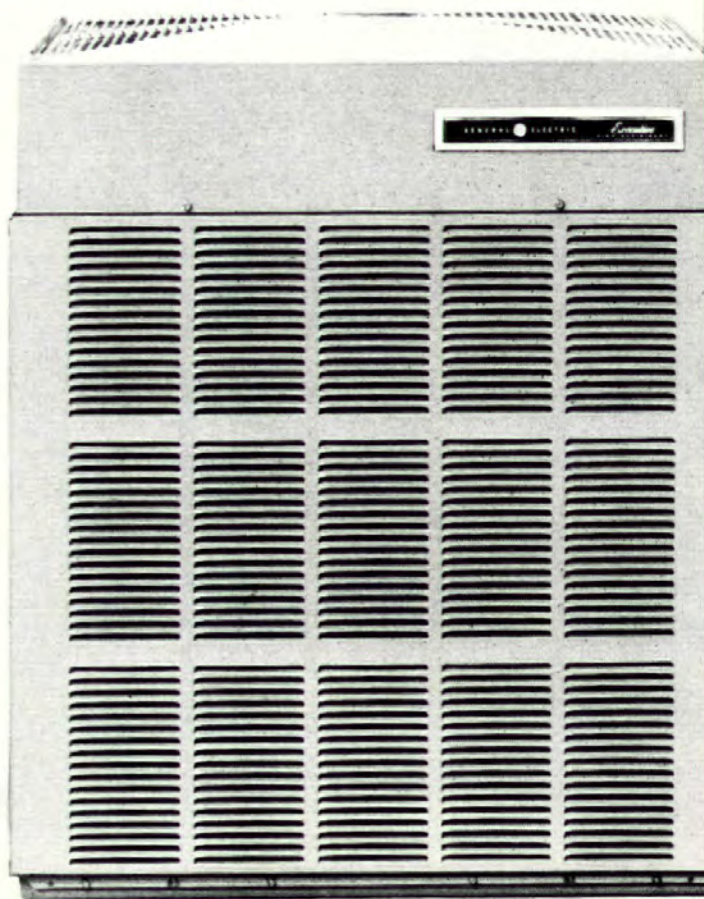
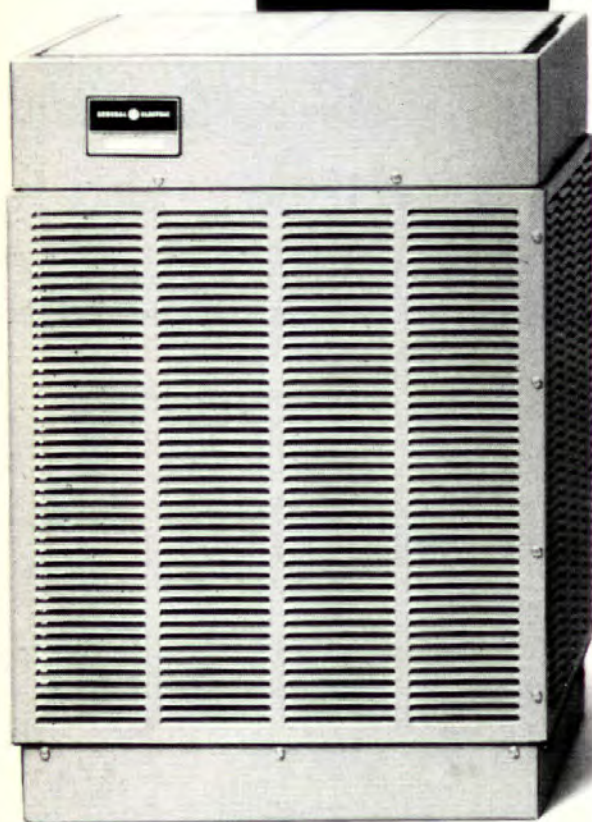
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INTERIOR ENVIRONMENT



Gas-fired furnace (above) features energy-saving Vent Miser™. The device automatically opens and closes the flue when the thermostat calls for heat. Unit has electronic spark ignition pilot and energy-efficient blower assembly. Bryant, Indianapolis, IN. Circle 237 on reader service card



Room air conditioner, "Yukon" (above), is part of a line of 26 models ranging in capacity from 5,000 Btu to 34,000 Btu. Unit has insulation on bulkhead to minimize noise. McGraw-Hill, Edison, Albion, MI. Circle 232 on reader service card



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4/77

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SURE-SELL KITCHENS

Here are the products used in the kitchens shown on pages 74 to 85.

Cover (Windemere). Cooktop, ovens: Thermador. Dishwasher, trash compactor: Tappan. Disposer: Waste King. Cabinets: Certified. Flooring: Del Piso. Range hood is custom-made. Countertop is red maple.

Pages 74-75 (HarborWalk). Range, range hood, dishwasher: Caloric. Refrigerator: Hotpoint. Cabinets: Sawyer. Countertop: Wilson Art.

Page 76 (Sand Lake Hills). Range, dishwasher, disposer, range hood: Frigidaire. Flooring: GAF. Cabinets and countertop are custom-made.

Page 76 (Northridge Country Estates). Cooktop: O'Keefe & Merritt. Ovens, dishwasher, disposer, refrigerator: General Electric. Range hood: Modernaire. Flooring: Mannington Mills. Countertop: Dal Tile. Cabinets are custom-made.

Page 77 (Trinidad Island). Cooktop, oven, microwave oven, range hood: Thermador. Dishwasher, disposer: Waste King. Cabinets: Sawyer. Countertop: Select Tile. Flooring: Armstrong.

Page 78 (Sea View). Cooktop, ovens, dishwasher: General Electric. Cabinets: Sawyer. Countertop: Dal Tile. Flooring: Catalina.

Page 78 (Windemere). Range, dishwasher, trash compactor: Tappan. Disposer: Waste King. Cabinets: Certified. Countertop: Franciscan Interpace. Flooring: Amtico.

Page 79 (The Summit). Cooktop: Jenn-Air. Ovens, dishwasher, trash compactor, disposer: General Electric. Cabinets: R&J Custom Cabinets. Countertop: Diastone. Flooring: Amtico.

Page 80 (Woodbridge Estates). Range, dishwasher, disposer, range hood: Gaffers & Sattlers. Cabinets: X-A Cabinets. Countertop: Dallas Tile. Flooring: Armstrong.

Page 81 (Sun City). Cooktop, ovens, dishwasher, trash compactor, refrigerator: Frigidaire. Disposer: Waste King. Range Hood: Nutone. Cabinets: Silvey Products. Countertop: Formica. Flooring: Armstrong.

Page 82 (Mission Hills). Cooktop, ovens, dishwasher, trash compactor, disposer, refrigerator, range hood: Whirlpool. Cabinets: Yorktowne. Countertop: Formica. Flooring: Kentile.

Page 83 (Montpelier Oaks). Range, range hood, dishwasher: Magic Chef. Disposer: Apollo. Refrigerator: General Electric. Cabinets: Elco. Countertop: Rynone Industries. Wood floor: Custom Surfaces.

Page 83 (Hudson-on-Memorial). Grill: Jenn-Air. Cooktop: General Electric. Ovens: Jenn-Air. Dishwasher, disposer: KitchenAid. Warming drawer: Thermador. Range hood: Rangaire. Countertop: Formica. Flooring: Terra Firma Tile. Cabinets are custom-made.

Page 84 (Rotonda). Cooktop, ovens, dishwasher, disposer, refrigerator: General Electric. Range hood: Swanson. Cabinets: Formica Melamine by American Cabinet. Countertop: Formica. Flooring: Armstrong. Washer and dryer: Frigidaire (stacked units).

Page 84 (custom home). Cooktop, ovens: Thermador. Dishwasher: Hotpoint. Refrigerator: Amana (wood was added to door to match cabinets). Cabinets are custom-made.

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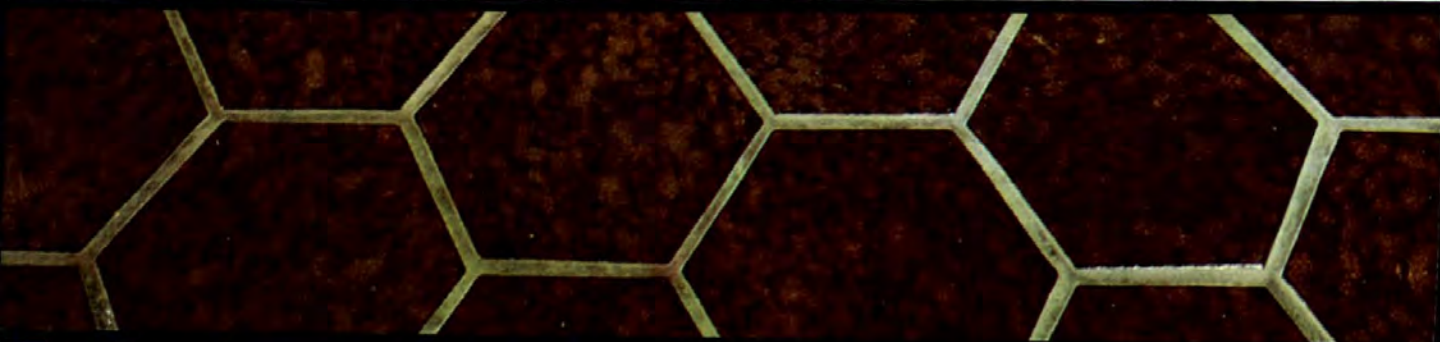
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How good are your kitchen plans?

To find out, use a 25-item checklist published by the Small Homes Council-Building Research Council. Ratings are based on standards developed by the SHC-BRC and the checklist is included in the council's illustrated kitchen planning guide.

The guide is intended for the builder/designer of small or average-size houses, and it explains how to allot avail-

able space most efficiently. The planning standards outline and the checklist which follows it are divided into two parts: 1) how much storage and counter space kitchens need and 2) how to locate cabinets and appliances for maximum efficiency.

How much counter/cabinet space *does* a kitchen need? According to SHC-BRC, that depends on the square footage of the house. In a less-than-1,000-sq.-ft. house, for example, six feet of counter frontage is a minimum; in a bigger house, eight or ten is a must.

The checklist works on the same principle: In the kitchen of a less-than-1,000-sq.-ft. house, 18" of counter adjoining the sink rates ten points; in a 1,400-sq.-ft. house, the same length of counter only scores 3 points.

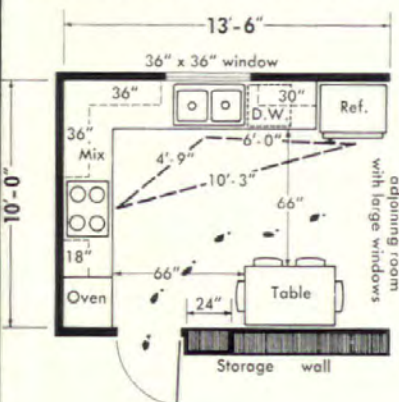
And what about layout? SHC-BRC says the sink, refrigerator and surface cooking unit should be at points of a work triangle whose sides total less than 23 ft. In fact, no matter how large the kitchen, a work triangle totalling 26 ft. or more scores zero; the kitchen is too spread out for convenience.

Note: The guide and checklist cover planning and evaluating conventional kitchens; custom kitchens aren't discussed and shouldn't be scored with the checklist.

Copies of the guide are available for 25¢ from the Small Homes Council-Building Research Council, One East St. Mary's Rd., Champaign, Ill. 61820.

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