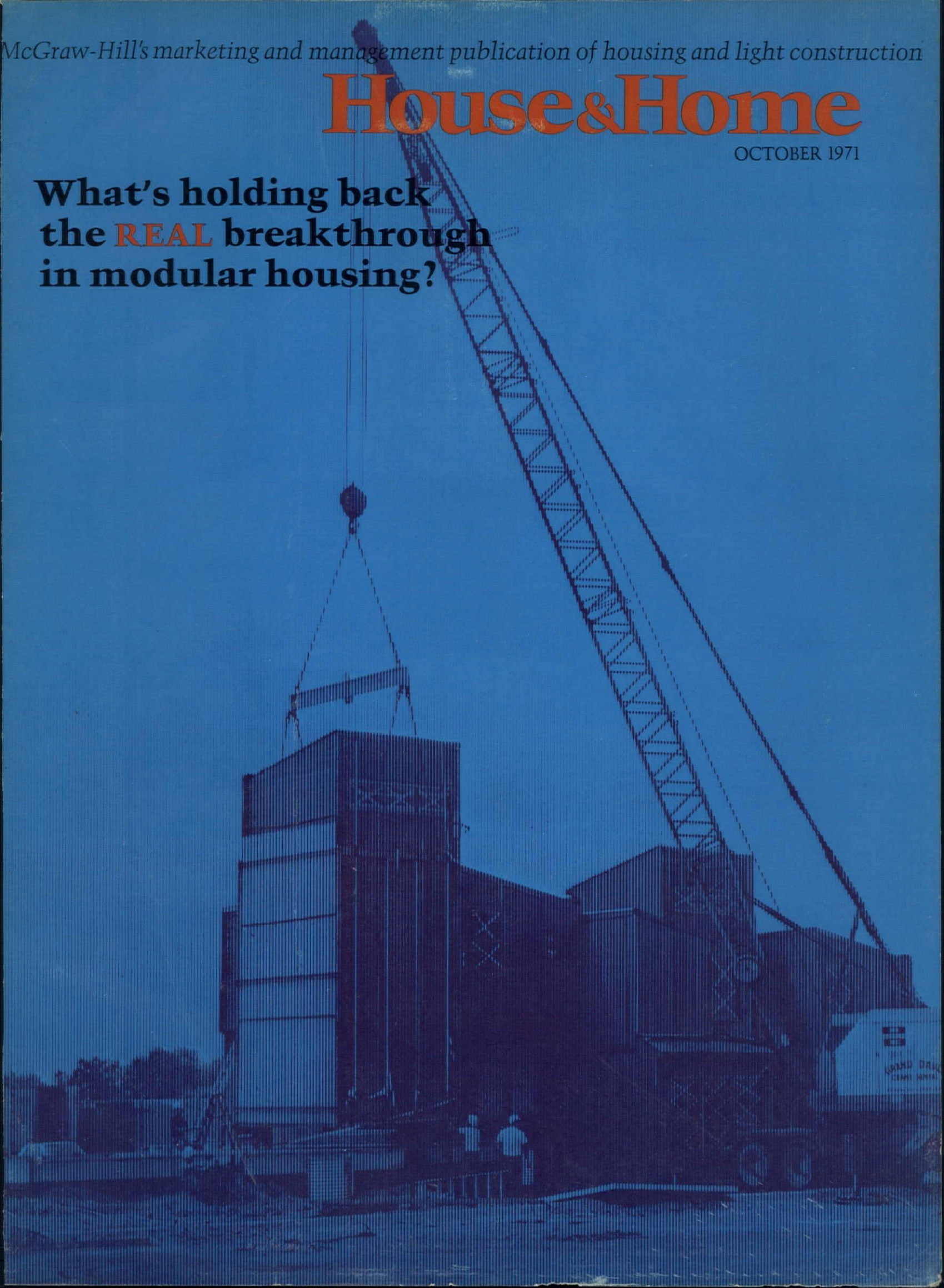


McGraw-Hill's marketing and management publication of housing and light construction

House & Home

OCTOBER 1971

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House & Home

McGraw-Hill's marketing and management publication of housing and light construction

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President Nixon's new game plan to stabilize the national economy . . .

What happens next month? That's the most frequent question about the nation's economy.

The guessing over the administration's moves, once the 90-day wage-price freeze is over, has dominated economic thinking ever since Mr. Nixon appeared on television August 15 to announce to the world that he was getting tough in order to strengthen the economy.

The President's measures have clearly stabilized the housing finance market by propping mortgage prices, but the 90-day freeze has clearly left uncertainties over how strong the President will be with his follow-up actions.

The Nixon program. His initial moves left no doubt that Mr. Nixon was serious about stabilizing the economy at home and the dollar abroad. He moved on several fronts to bring that about:

- He imposed a 90-day freeze on all prices and wages, to be followed by a period of transition to avoid merely postponing inflation.

- He said that the United States would no longer buy gold at \$35 per ounce, and instead said he would allow the dollar to float—that is, to seek its own value in relation to other currencies.

- He asked for a temporary surcharge of about 10% on imports.

- He said he would seek from Congress legislation to provide an accelerated investment tax

credit of 10% for 12 months, and a 5% permanent tax break after that.

- He said he would ask Congress to repeal the 7% excise tax on autos, which would save car buyers about \$200 on each American made car.

- He said he would ask Congress to advance, to next January 1, the \$50 increase in personal tax exemptions.

- He said he would seek a cut in federal spending of \$4.7 billion in the current fiscal year, in order to pay for the reductions in tax revenues.

- He imposed a freeze on all rents for at least the 90-day period.

Interest rates. President Nixon did not impose a freeze on interest rates, but Treasury Secretary John Connally made it plain the next day that "we expect financial institutions to follow the spirit and the letter of the law" in applying or re-

vising interest-rate policies.

Indeed, insofar as the mortgage market was concerned, the administration had locked in rates in the FHA/VA sector at 7% when it said it would subsidize that rate to the tune of \$2 billion in special assistance money from the Government National Mortgage Assn.

With the President's actions taken, speculation began almost immediately that the 90-day freeze was just the beginning, and that in all likelihood it would be extended beyond the mid-November deadline.

Romney's proposal. Housing Secretary George Romney, speaking on his own and not as a spokesman for the administration, said that "the President has the authority . . . to take whatever action in the wage-price areas he deems necessary at least through next April 30, and if wisely used I believe the authority would be extended

beyond that date."

Romney then suggested a wage-price review board should become operative after the freeze expires. He further recommended that "whatever follows the wage-price freeze must apply equally to wages and prices, and cannot exclude profits."

Another administration official, Paul McCracken, chairman of the President's Council of Economic Advisers, hinted at the possibility of reviving wage-price guidelines, such as those used during the Kennedy-Johnson administrations.

Then a Democrat, former CEA Chairman Arthur M. Okun, suggested that once the freeze was over, raises should be limited to no more than 5% in the next year.

A shelter for housing. Whatever the administration finally comes up with—and it seems certain at this point that the new economic program will not end with the initial 90-day wage-price freeze—housing has already been given a major prop by the new GNMA program.

Secretary Romney, in urging a wage-price review board, said "the future of housing and indeed the whole economic future of this country depend upon choosing the right way to deal with inflation.

"If our Phase II anti-inflation program is truly effective," the HUD chief continued, "I can see housing starts next year rising still further to 2.1 or 2.2 million units." —A.M.



Mortgage aid plan is explained by Chairman Preston Martin of Home Loan Bank Board. From left are Bruce Ricks, board research director; Thomas Bomar, executive vice president, Federal Home Loan Mortgage Corp.; T. H. Clarke, board member.

. . . and his program to promote housing and keep mortgage money flowing

The wholesale rewrite of the nation's economic game plan did not exclude the housing and home finance industries—it treated them with kid gloves.

When President Nixon moved to stabilize wages and prices, much of his program comprised sweeping new rules under which homebuilders and mortgage men must now work. But the rules could hardly have been easier to live with.

Protection. With the National Association of Home Builders leading the fight against an increase in the FHA mortgage interest ceiling, and convincing the administration to use some

other tack, Mr. Nixon's housing advisers moved swiftly in August and September to keep housing starts high and interest rates level.

The release of \$2 billion to permit the Government National Mortgage Assn. to subsidize middle-income mortgages came prior to the blockbuster of a wage-price freeze (News, Sept.). The GNMA scheme was regarded critically by the mortgage industry at first, but it became evident, after the freeze was imposed, why Mr. Nixon had shied away from raising the mortgage rate.

Announcement of the \$2-bil-

lion windfall created near frenzy in the housing and mortgage markets as old rules gave way to a brand new ball game. Overnight Ginny May became the chief umpire.

Fanny May—the Federal National Mortgage Assn.—had been the dominant factor in mortgaging. But the \$2 billion was released so Ginny May—not Fanny May—could buy FHA and VA loans at inflated prices. Ginny May—with its roster of 32 employees—suddenly found itself with the job of maintaining the administration's newly set floor under mortgage prices.

Ginny May's president, Woodward Kingman, first announced his plans to purchase new-home loans at a price of 96 cents on the dollar, and existing loans at 95. The free market for mortgages, without any subsidy, had been running at 91 to 92. Ginny May was to subsidize the difference in points.

Kingman then proposed periodic auctions to sell off the loans GNMA would purchase—and to sell these loans at market prices.

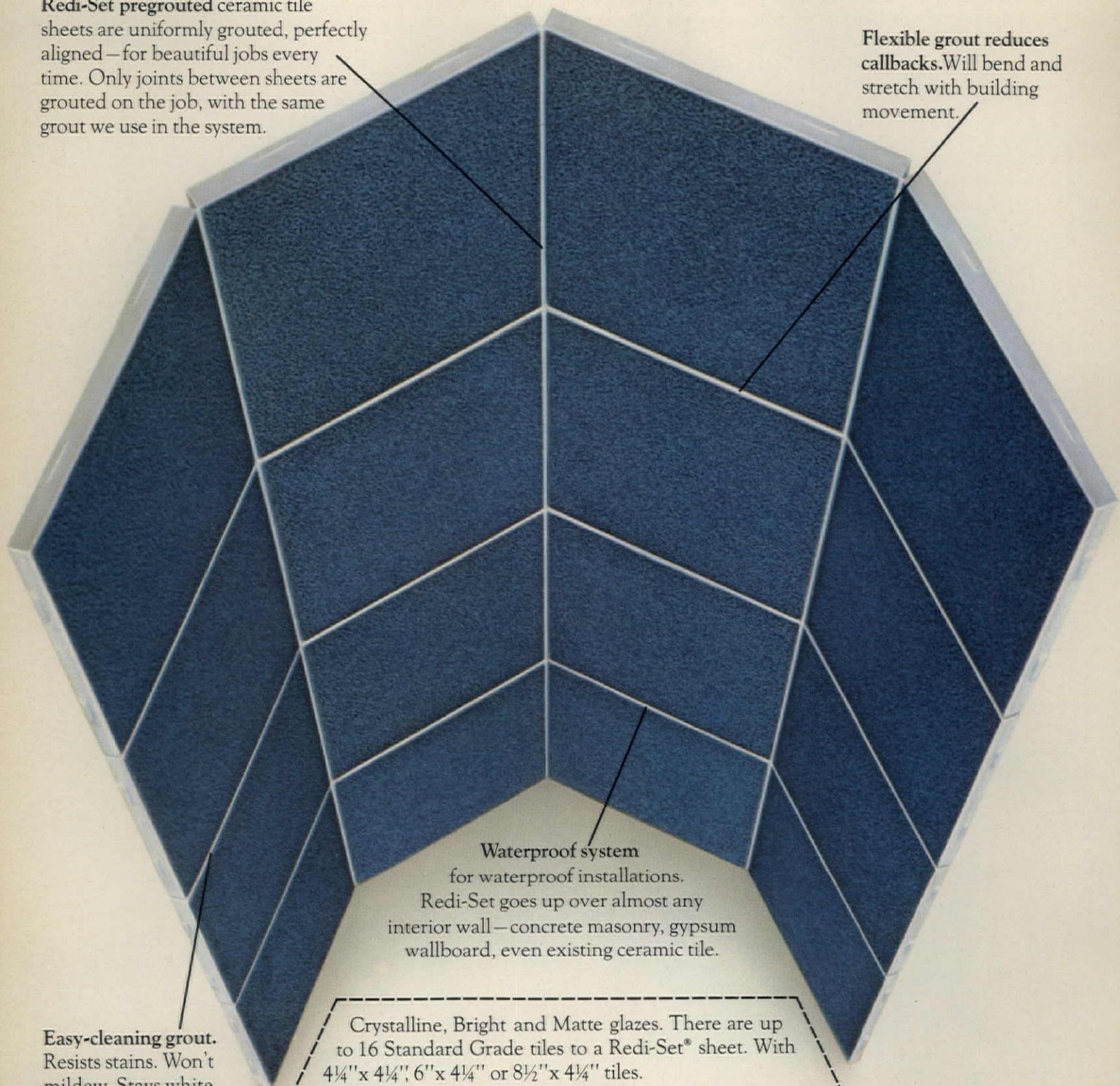
A new 95% loan. Even with this, the administration had

TO PAGE 8

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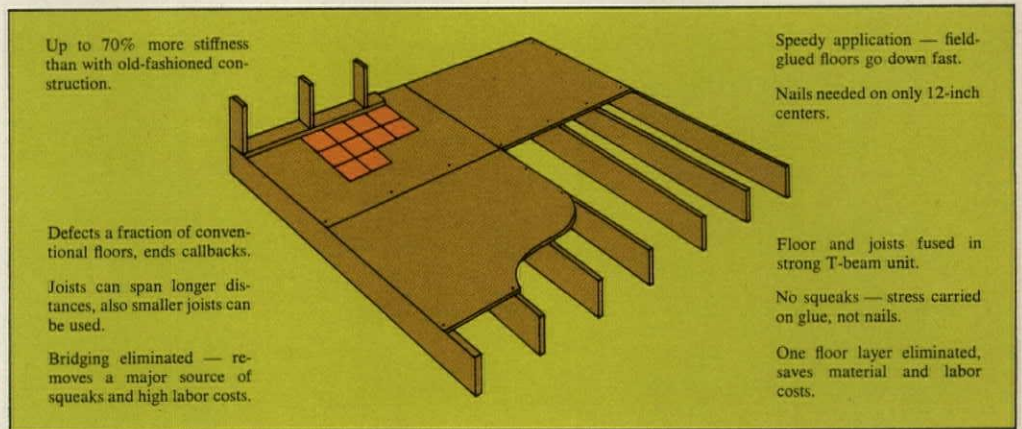


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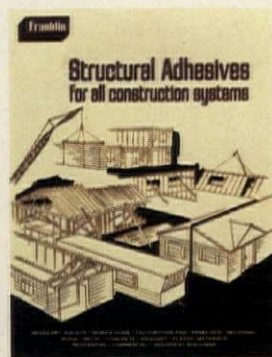
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President's program to promote housing and mortgage financing . . . *continued*

still other cards to play in its commitment to keep housing starts high and mortgage money flowing.

The Federal Home Loan Bank Board moved to implement several new programs for savings and loan associations.

- Rules were effected to permit federal associations to make mortgage loans up to 95% of a house's value.

- Liquidity requirements were lowered for S&LS from 7½% to 7%, freeing an estimated \$800 million for mortgage lending.

- The Federal Home Loan Mortgage Corp. raised the price it would pay for FHA/VA loans to 94—or three points. And no restrictions were imposed on these purchases, such as the \$22,000 loan limit under the GNMA program.

- The FHLMC said, too, that it would accept a lower yield from the S&LS on conventional participation loans it purchases. The new yield requirement is 7½% rather than the 7⅞% previously required.

More to come? The Bank Board's chairman, Preston Martin, stressed that his actions were "taken in lieu of a freeze on mortgage interest rates," and he told lenders to look at the HLBB moves "as a signal to keep lending."

Martin said there might be additional moves to lower liquidity even further, or to lift mortgage prices still higher if the markets warranted such moves.

He said there might also be a further subsidy in the form of lower rates to S&LS when they borrow from their regional home loan banks.

GINNY MAY'S PLAN. Ginny May's Kingman said he expects loans eligible for sale to his agency at the 96 or 95 price will total about 750,000—or about \$15 billion in mortgages during the first year.

The agency will "lay off" its purchase commitments with Fanny May and then auction off either the commitments or the delivered mortgages to other investors.

The auction will work this way:

GINNY MAY will accept A or B bids.

Type A bids are from orig-



Telephone seminar explains Ginny May tandem plan to 2,176 mortgage men in 11 cities. President Woodward Kingman of Ginny May speaks from session in Washington's Mayflower. From left: Ken Duncan, Fanny May's Philadelphia director; Russell Clifton, Fanny May vice president, with an aide; Kingman; and Ben Wesson, Ginny May counsel. Criticism of plan has come principally from California.

inator-sellers, who are bidding to repurchase their own commitment contracts from GNMA. Type B bids are general bids from any FHA-approved mortgagee, who will be bidding for delivered mortgages only.

Safeguards. The bidding is split because originators might otherwise lose their servicing if bids were taken only for delivered mortgages. So each originator-seller is permitted to bid at one auction only for his own commitment contract.

If an originator-seller's bid is rejected in the type A auc-

tion, he can still repurchase his commitment at GNMA's interim selling price at any time before the mortgage is closed.

The interim selling price is set by GNMA after each auction—and is pegged somewhat higher than the average accepted price in the regular auction.

If a loan is not repurchased prior to closing, it is sold by FNMA at auction under the type B rules. Originators are paid a ½% cancellation fee if the permanent investor cancels the servicing on the loan.

Fed delays bank plan for realty syndicate

BankAmerica Corp.'s plan to set up a new company to offer real estate syndication services has run into a snag with the Federal Reserve Bank of San Francisco.

Irwin L. Jennings, a senior vice president of the Reserve bank, said the selling of partnership interests was not on the list of activities permitted to bank holding companies, and that BankAmerica Corp. would therefore have to request permission from the Federal Reserve Board in Washington.

The bank had proposed to set

up a new company called BankAmerica Realty Services to sell partnership interests privately to a limited number of large investors so that the offerings would not have to be registered with the SEC. The company would then acquire and operate property in return for a fee, and the investors would receive income and tax benefits.

The Federal Reserve Board must resolve the question of whether these activities would violate the separation of banking and securities decreed by the Banking Act of 1933.

Fee schedule. Ginny May has also set up a fee schedule for its commitments to purchase loans. A fee of ½% is charged on home loans, and a 1% fee has been set for multifamily mortgages.

If the commitment is immediately repurchased by the originator-seller at the GNMA interim selling price, the full commitment fee is returned. If the commitment is repurchased at some other time prior to the delivery of the mortgage, ⅜% is returned on an existing home loan and ¼% is returned on proposed construction.

In the case of multifamily mortgage commitment repurchased before closing, the 1% fee is returned less a ⅛% fee for each three months that the commitment is outstanding.

Fanny May is handling the administrative details related to the GNMA program, and its charge to the originator seller is .01% for each home mortgage, and no fee on multifamily commitments.

Eligible loans. At mid-September, the only programs that qualified for the GNMA purchases at higher than market prices were the major home loan and multifamily mortgage programs of FHA and VA.

However, it was expected that other programs, including condominium housing, nursing homes, and hospital loans, among others, would soon be added by GNMA. Kingman said that an announcement about these other programs would be made after HUD's legal department ironed out problems with respect to the question of what constitutes a dwelling unit.

The limit of \$22,000, or \$24,500 if the unit has four or more bedrooms, came under fire from industry spokesmen, but Kingman explained that this is a statutory ceiling. He noted, however, that "this is a question that Congress might want to look into."

Congress has already given Hawaii and Alaska a higher ceiling than other states, but mortgage men in such states as New York, Texas, and California have indicated that \$22,000 is not sufficient in their areas. —ANDREW R. MANDALA

Washington

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CIRCLE 9 ON READER SERVICE CARD

Some builders are beginning to think it's time to get out of apartments

Apartment construction is setting new records this year,* but the boom rests on a shaky foundation.

Spiraling costs and lagging rents, overbuilding and high vacancy rates, have combined with a resurgence in the single-family market (see chart) to create havoc with earnings.

An Atlanta builder puts it this way:

"There's no profit in the apartment industry. The cost of money and construction has zilched it."

Risks high. Builders who normally expect a 10% return are getting 1% to 2% today, explains James Stack, a finance officer for Baird and Warner, the big Chicago mortgage banker and apartment manager.

"This is grossly disproportionate to the risk," Stack explains. "Should something unusual happen, such as a crippling strike, they would have to reach into their pockets, and then they are going to quit."

A Cleveland builder agrees: "Today you must have 90% rentals on any project built in the last two years, but five years ago you could scrape by with 75%." He believes that most of the experienced builders have gotten out of the business.

"The ones who are in, syndicate and get out before costs rise to the point where you need even more than 90% to keep your head above water," the Cleveland man says.

Costs and investors. Most builders blame the squeeze on costs—taxes, construction, land, materials, labor, and interest—plus the fact that rents have not risen comparably.

"Since 1966, rental rates have gone up about 3% a year, while

*J. Theodore Dailey, vice president of Advance Mortgage Corp. in Detroit, estimates in a nationwide survey that starts will top 700,000, compared to 571,000 in 1969, the best previous year.

Single-family vs. Multifamily Housing starts
(Percentages are rounded)

	'60	'61	'62	'63	'64	'65	'66	'67	'68	'69	'70	'71*
Single-family	79	74	68	63	63	65	67	65	60	55	58	60
Multifamily	21	26	32	37	37	35	33	35	40	45	42	40

Source: Federal Home Loan Bank Board *estimated

costs have increased about 8%," one builder notes.

The imbalance between rising costs and rents has also led to inadequate mortgages. Colburn Jones, president of Heritage-State Ltd., a developer in Syracuse, N.Y., says he has to put in his own money or find an investor. Only a few years ago, apartment mortgages covered more than most builders' costs. Jones is about to enter the condominium market to get investment cash.

Overbuilding. To add to the builders' woes, apartment vacancy rates are soaring, not only in depressed Seattle and southern California, but in the booming southern and mountain states.

"There's overbuilding in just about every metropolitan area, except in the eastern cities where apartment living has become a way of life," says Edwin A. Coleman, executive vice president of the National Apartment Assn.

National picture. Over most of the country it's the same refrain: empty apartments.

• In August, the regional Federal Home Loan Bank raised a red flag over Orange County, Calif., advising savings and loans not to lend for apartment construction because of a vacancy rate of 9.2%.

• A San Francisco apartment industry association recently reported a 10% rate, blaming high rents that forced families out of the city. And William Leonard, executive director of the Associated Home Builders of the Greater East Bay, says there's a 30% vacancy rate in luxury apartments in Santa

Clara County (San Jose).

• Apartment vacancy rates in Houston and Dallas are 12-13%.

• Twice as many units are being built in Denver this year as last, and local lenders have become chary of apartment mortgages.

• In Atlanta, "it's taking a little longer for new complexes to fill up," according to mortgage banker Robert Tharpe. Vacancy rates stood at 7-8% at midyear, and 60% of this year's record 19,000 units are due to come on market in the last half.

• Chicago's suburban complexes are taking up to one-half longer to rent up, an officer of Baird and Warner says.

• Cleveland's vacancy rate in high-rises has inched up to 4%, says Joseph Melchior, executive vice president of the Home Builders Association, even though most construction in the city has been halted since April, 1970, because of a sewer tap-in ban.

Again—free rent. Vacancies usually show up in luxury and upper-medium range apartments. Baird and Warner combats the problem by running special buses from some suburban apartments to train stations. Others offer a month's free rent or lower rents.

"You're not yet seeing many of the oddball things, as in 1963 to 1965, when you'd get a case of champagne for moving in and, if you stayed eight months, you'd get to keep the furniture or refrigerator," says a California management executive. "Today's managers are more sophisticated."

Trouble ahead. Others see the high vacancy rate as part of a cycle. Jenard Gross, former president of the national association, thinks the rates will persist for 12 to 18 months.

In the meantime, Gross warns, "a lot of people are going to get thoroughly educated" as thinly financed or poorly managed projects run into trouble.

It's happening already. A Chicago developer points to three downtown high-rises that were sold or went into receivership before completion. And a southern California Realtor reports: "In the last year, at least three companies that locate and operate apartment complexes for doctors, lawyers, and other wealthy investors have gone into bankruptcy."

Developers' caution. Many developers are looking twice at the projects on drawing boards.

"We are being very careful about what and where we build, because today you need a very good track record to attract investment capital," comments Stanley Rothenfeld in Cleveland. And Jared Schlaes, a Chicago developer and real estate consultant, says he is advising his clients to invest in existing income-producing properties, not in new buildings.

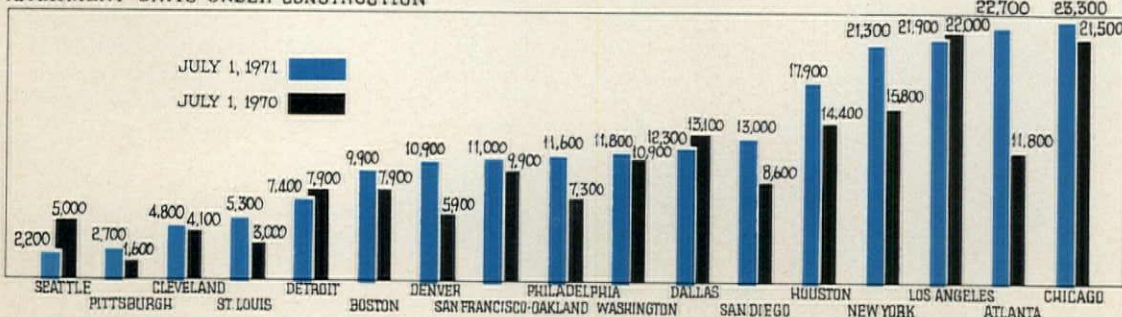
Some solutions. Builder Don Scholz in Toledo believes that his high proportion of FHA work helps him to avoid problems. There is no shortage of demand here, although Baird and Warner's Stack thinks that the advantages of such programs are overstated.

There are other answers, too. Besides condominiums, Heritage-State is diversifying into hotels, shopping centers, office and conference centers. Shareholders Capital, a large developer of multifamily housing, will enter the recreation field.

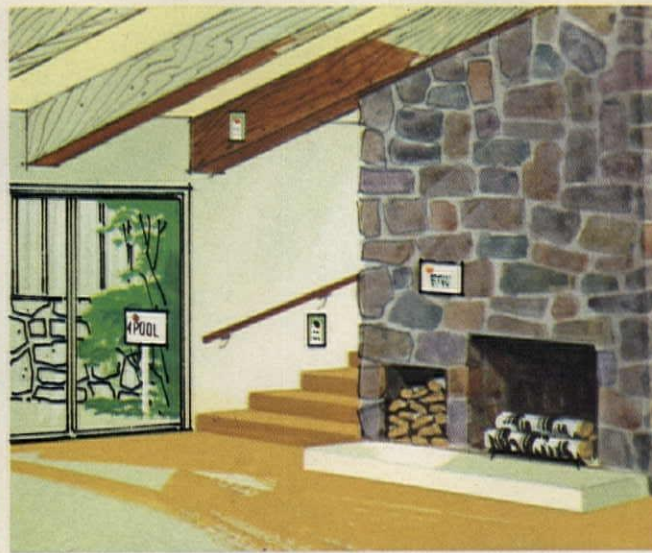
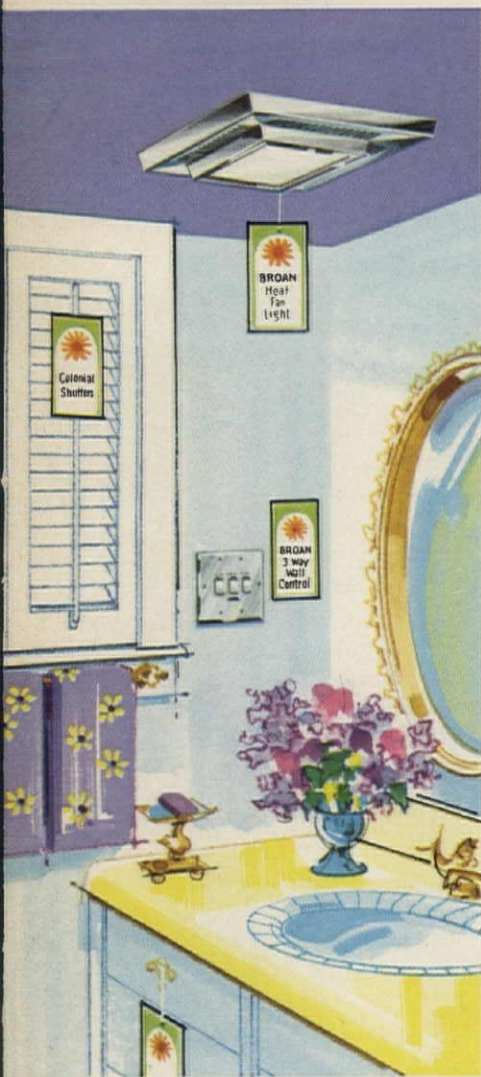
With such reassessment, most builders believe, the situation will probably right itself. Yet one developer, off the record, sounds this note of gloom: "It won't take much to put the industry into a recession, to push the profit squeeze over the edge. In some ways, this story is premature. The recession isn't here, but it will be."

—JANE SHAW
McGraw-Hill News, Chicago

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Housing's boom—West and South lead nation toward 2 million-plus record

Housing starts totaled 971,000 for the first half of 1971, up 51% from 1970—and the year's total should top 2 million for a new record.

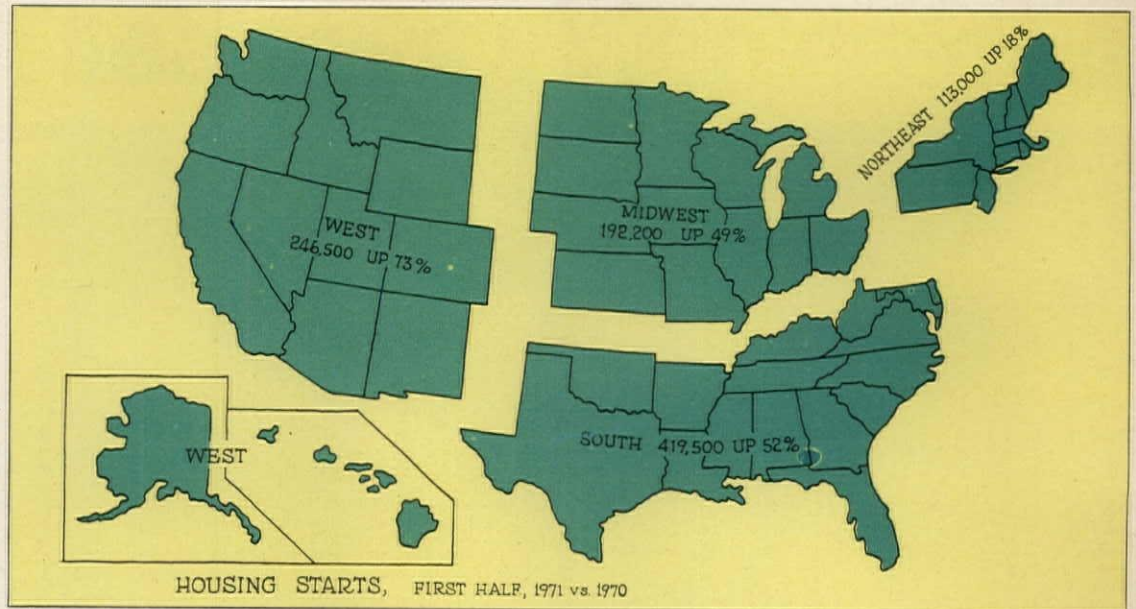
The latest national survey by Advance Mortgage Corp. of Detroit describes the traditional homebuilding industry as being in the midst of a lopsided boom.

The mobile home business is enjoying a parallel boom, not so lopsided. Some 219,640 units were shipped in the first six months of 1971, and industry sources project 450,000 shipments for the year. That would top the industry's 413,000 in 1969, its best year.

Together, this means that a total of nearly 2.5 million housing units will be built in 1971, a healthy jump over the 2,050,000 figure for 1970, the best previous year, and 36% more than 1970's 1,835,000 units. (Mobiles were not counted into the totals in 1950 but were in 1970.)

Free enterprise. The vigorous first-half showing preceded a passel of government decisions taken to channel more money into the industry: a \$2 billion tandem plan to reduce discounts charged on FHA and VA loans, a cut in S&L liquidity requirements, and 95% conventional mortgages.

In addition, only a small portion of the first half's 971,000 starts—100,000 home and 60,000 apartment—were government-subsidized. However, some 340,000 subsidized starts



are projected for the second half.

These projections, plus the stimulus provided by the recent government actions, lend strength to the survey's optimistic prediction of well over 2 million traditional homes for the year.

Lopsided boom. The market is reasonably strong throughout the country, but the South and West clearly account for most of the boom. Of the nation's top ten markets, nine were southern and western cities, and 70%

of the first half's housing starts were in these regions. The South enjoyed an increase of 52% over 1970's starts, and the West, an increase of 73%.

For the nation as a whole, 1-to-4 family homes and apartments shared in the boom at the same rate—both were up 51% over 1970. Individual sections of the country varied considerably, however. One-to-4 starts rose 65% over 1970 in the West, 49% in the South, 51% in the Midwest, and only 34% in the Northeast.

Apartment starts showed even greater variation: up 86% in the West, 57% in the South, 47% in the Midwest, and down 2% in the Northeast.

Overbuilding. There are signs that some areas are overbuilding, especially in apartments. A recent California report, for example, complained of "an apparent lack of awareness of basic housing demands," and estimated that 80,000 of this year's 245,000 new units would stand empty. In parts of the state, vacancy rates are as high as 20%, and this could double.

Similarly, in the South, Atlanta's apartment vacancy rate is now about 8% and twice as many apartments are scheduled for completion as the market has ever absorbed. In Dallas and Houston, apartment vacancy rates are running at 12% to 13%.

The real market for new housing this calendar year is less than the possible two million starts we may have. If we do build that many, we could wind up with about 200,000 empties in new housing at year's end.

—Richard W. O'Neill

The O'Neill Letter, August 31, 1971

California ousts environmental aide who moonlighted for land developers

Gov. Ronald Reagan has fired an environmental appointee from one California commission and asked him to resign from another for writing a report on coastline control for a group of Los Angeles land developers. The aide had reportedly accepted a \$22,500 fee.

J. Jamison Moore, 43, a Beverly Hills management consultant, has denied any conflict of interest. He has refused to resign from the state's Navigation and Ocean Development Commission and is seeking a meeting with the governor to persuade him that he could still be an effective member of that agency.

In the meantime, the state is looking for a legal loophole that would permit the governor to fire Moore before his term expires in January, 1974. Reagan could remove Moore from the first commission because he served at the governor's pleasure, but the other is a four-year appointment.

Dismissal by wire. Moore had received a telegram from the governor dismissing him from the Advisory Commission on Marine and Coastal Resources, and saying:

"I have concluded... that the public impression created by your business activities as they

relate to your official capacity has, rightly or wrongly, damaged your effectiveness...."

The report. The conflict arose when Moore wrote a report for Advocates of Better Coastal Development, a lobbying group of land developers whose members include Tucker Land Co., Mountain Park Properties, Adamson Companies, Alcoa, Westlake Village, Headland Properties, Barclay, Hollander and Curci, and Braewood Development Co.

The report was concerned with portions of the coastal zone around the Santa Monica mountains and supported the

developers' contention that the additional land use controls sought by conservationists were unnecessary. The *Los Angeles Times* reported that the group paid \$22,500 for four months' work. Moore said he had received less, but would not reveal the amount.

When the controversy erupted, Moore stated that his report was an "objective" statement of the facts and that he would have reached the same conclusion if he had been hired by the Sierra Club. "We all have a multiplicity of interests... It doesn't mean that we sell our souls for profit," he said.



“Those who’ll play with cats must expect to be scratched.”

Miguel de Cervantes

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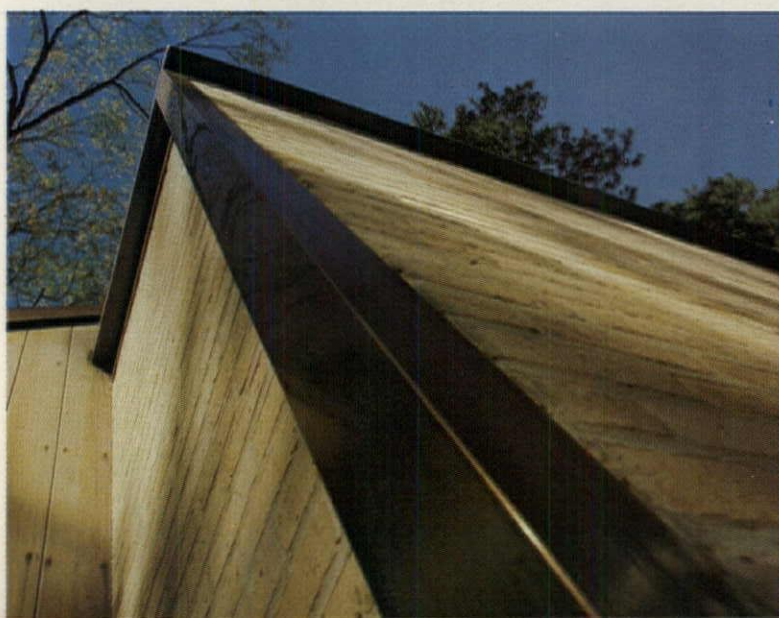
Here are some economical uses for copper that may surprise you. Using standard sheet copper. Available now. Every bank, restaurant, hotel, office building, house of worship and residence can be made more attractive and elegant with the quality features of copper. Feast your eyes.

New copper/roofing system (right). Large copper sheets bonded to plywood. Quick, easy to apply. Needs no special tools. **Clear film-finished copper roof** (below). Copper sheet laid over plywood deck in a vaulted design. Secured with hidden clips. Factory coated to preserve natural color.

Bronze sliding glass doors, windows (below right). Brings the outdoors indoors. Beautifully framed in roll-formed bronze, a rich looking copper alloy. Quiet elegance that lasts.



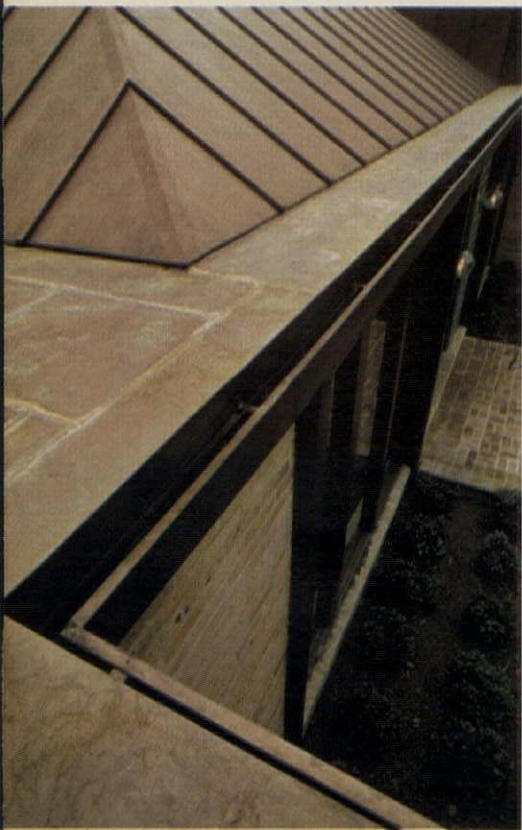
Copper leaders that are an integral part of the design (right). Copper's resistance to corrosion especially valuable here. Painting eliminated. Weathers naturally to a russet brown. **Copper vent hoods** (far right). Long-lasting, good-looking. New high-strength and economical copper strip is perfect.



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Bronze floor tiles (left). Pebble textured bronze on copper sheet applied directly to concrete or plywood. Needs only minimum care. Foot traffic adds varied highlights of muted gold tones.



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Copper-accented entrance (above). Stamped copper rosettes with a patina finish. Easily applied. **Copper-clad ceiling** (left). Chemically etched ultra-thin sheets of copper and brass in a kaleidoscope of tone and color. Every pattern unique. For walls, counters too. For details on these—or any other architectural uses for copper, brass and bronze—just write us.

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CIRCLE 15 ON READER SERVICE CARD

Land barons misrule California, charges Nader, blaming almost everybody

For five years Ralph Nader roamed the corridors of Washington and haunted the board rooms of Detroit in search of abuses of corporate power and public trust. Last year, he packed his raiders out West, and the result was a 1,200-page, single-spaced indictment of California's treatment of its natural treasures, land and water.

Nader called it his largest task force effort yet, involving 25 lawyers, city planners, economists and students. He unabashedly boasted that the report would have "the most powerful impact of any single report in the history of California."

Reports like this are often referred to as comprehensive. This would qualify for that tag, or the more derogatory "shot-gun" label applied by some of its critics. In roughly equal measure it hits the land-fraud artists, the acquisitive farmland barons, the shortsighted city planners, the state water manipulators, the highway lobby, the polluters, the system itself—nearly everybody and everything that contributes to California blight. It is too much for most California newsmen, much less the public, to absorb properly even in the three installments in which it was released in late August.

Chilly reception. What is clear is that it will take a heap of continued campaigning on individual issues to achieve the impact to which Nader referred. The report, which spared neither Republican nor Democratic politicians and which roasted conservationists for lack of effectiveness, understandably drew no visible support from the California power structure. No legislators rushed forward with promises of reform, for nearly 60% of them had been accused of conflicts of interest regarding land. Even the Sierra Club, that sometime Nader ally, complained that "sniping at colleagues" hurts in meeting "the kind of challenge pointed out in the report." Edwin Z'berg, a Democratic assemblyman with a strong conservation record, denied a charge he had permitted an approach in his law office by someone asking for help in the land

speculation. Then he added, "I am sorry to see Nader being so careless. It damages some of the good work he is doing."

Court threat. That was a view shared by several others basically sympathetic to Nader's cause.

But Nader and his raiders are obviously counting on court action and citizen rage to spring from the report and force change.

"We think it was pretty well timed," says Robert Fellmeth, 25-year-old director and editor of the study, *Power and Land in California*. Fellmeth was alluding to the recent disclosure that in 1970, for the first time in the Golden State's history, more people left than entered. Many, he says, felt betrayed by the California dream, and he thinks the study explains the betrayal and will spur action.

Ownership. The California study is replete with the usual Nader tones of outrage, this time over increasing concentration of land ownership. For instance, the report finds that 45 corporate farms control 61% of California's 6 million acres of farmland, and that in any given county the top 20 owners usually own 33% to 50% of the private land.

Much of that has been known for years, however, and has been accepted as the price of prosperity since the early 1900s, when the Southern Pacific Railroad—still the largest single landowner with 2.4-million acres—ran the state and its legislators with cavalier disregard for the wider public interest. So the question really is whether a new public mood is receptive to the Nader attack.

Failure of reform. The greater value of the Nader-Fellmeth study may well lie in its least emotional case histories of localities that tried to do the right thing but couldn't because of systems of crazy-quilt government, tax incentives favoring urban sprawl, and a tendency to try to finance most urban services from taxes on land and buildings, inevitably creating pressures to develop open spaces.

The report is heavy on statistics. It quotes a hitherto unpublished U.S. Soil Conservation Service report that between

1967 and 1980, another 2 million acres, much of it the best irrigable farm land in the state, will have "gone under" cement and development. Unreleased computer data from the California Homeowners' Assn. reveals that in San Diego County, elected tax assessors, who are supposed to assess land uniformly between 23% and 25% of market value, assessed more than 18,000 parcels anywhere from 1/10% up to 30%. Of the 100 most underassessed parcels, 27 belonged to insurance companies, savings and loan associations, and large developers.

'Favoritism.' "There is evidence of systematic favoritism for certain types of properties owned by certain kinds of corporations," says the report, adding lists of corporations that provide most of the campaign contributions of the assessors.

Even without undue political shenanigans, poor Santa Clara County managed to burgeon from a bucolic orchard and farm region in the early 1940s into Los Angeles North by the 1960s. The report explores much of the reason and recommends changes that might well apply across the country.

Tax abuses. Santa Clara, the home county of sprawling San Jose, contains 15 municipalities, 37 school districts and 19 special districts, all with elected boards, and 25 more special districts for water and the like, with appointed boards. Even so, it is not the state's most fragmented county. But citizen awareness, much less participation, is discouraged. "Government is invisible, its functions unclear," says the report.

The villain, says the report, is often the tax structure. San Jose's city taxes to finance water and sewer and other utility services for new developments come to \$1.40 per \$100 assessed value. As costs go up, the tax rate is held steady for political reasons. Thus the tax base must be increased. Developed land is valued higher than undeveloped, so the pressure is on to permit new building on vacant land whether it is zoned that way or not. The city sacrifices planning for revenues, and it is the eventual homeowner, not the developer, who pays.

Proposed reforms. Recommendations range from the practical and possible to the politically unrealistic. Among them:

- Imposing a "substantial" state fee for re-zoning land from open space to development to discourage speculation in favor of use. Alternatively, taxing capital gains on land at higher rates than ordinary income.

- Turning zoning regulation over to the states and disallowing most variances.

- Forming more regional governments that would take over the functions of small patchwork municipalities.

- Investigating landholdings, and disclosing the identities of individuals and corporations and the tax payments.

- Based on antitrust law, establishing a limit on the acreage any private holder could buy or keep, ranging from 5,000 to 15,000 acres. The report also urges a law suit to force the Southern Pacific to give up its vast properties to the state or federal government on the ground that the line violated land-grant terms.

Least likely of fulfillment were suggested changes in the positions or behavior of top state officials. But despite some exaggeration and error in reporting, *Power and Land* makes a pretty good case that neither a liberal nor a conservative ideological label stands in the way of serving short-term greed.

Early results. Already, an alliance of environment groups talks of copying off part of the report to whip up support in Sacramento for a coastline preservation bill. And an attorney in San Francisco who has worked on environment and land use problems in Washington and Sacramento and who now serves corporate clients, gives perhaps the best assessment of the report:

"I have become a lot more sympathetic to environmental extremists since I've seen how much corporate resource goes into preserving the status quo. The report is good as a means to arouse public outrage, but if Nader and others don't do big things with it right away, it will sink like a stone and never be heard of again." —PETER GALL

McGraw-Hill News,
Washington

For "Operation Breakthrough," Levitt Building Systems chose Sears kitchen appliances.



Here's why:

When construction of HUD's Operation Breakthrough site began at Kalamazoo, Michigan, Levitt's new modular homes were the first on the scene.

"We had to have a quality package," says Charles Biederman of Levitt Building Systems. "Sears offers quality without any compromise." And so, in each Levitt Contemporary Townhouse at Kalamazoo is an all-Sears kitchen—refrigerator, range, dishwasher, and kitchen counter tops. Also, Sears washer and dryer, Sears 24-ounce shag carpeting and a Sears smoke-and-heat detection and fire alarm system.

"Sears is a natural for us," says Mr. Biederman. "The people who buy our houses know they can depend on Sears Products. And we know we can count on Sears for quality, service, and dependability."



Levitt Building Systems housing units are available to private developers. Contact Carl D. Covitz, Marketing Vice President, Levitt Building Systems, Battle Creek, Mich. 49016.

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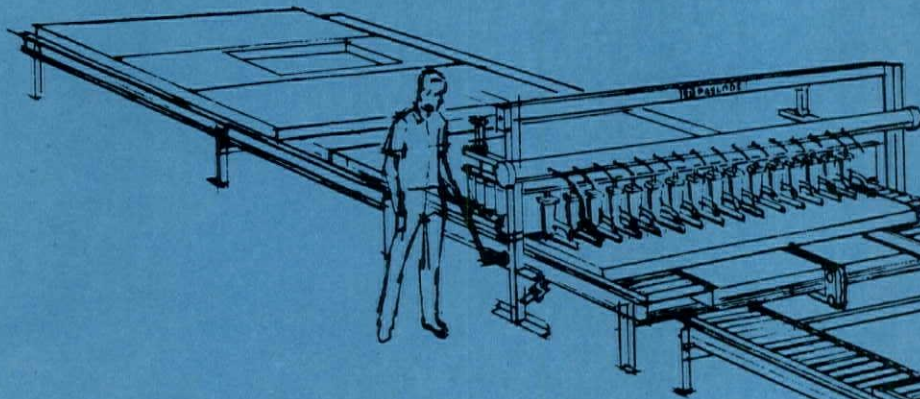
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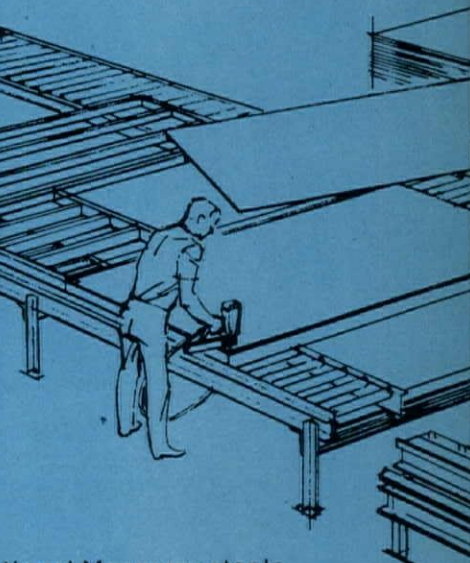


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Pre-cut studs and top and bottom plates are laid out on the bed of the Paslode framing machine (right end of large sketch). Retractable pins on 16" centers expedite accurate stud placement. The framing bridge moves the four 1000 load Stallion® Nailers along the table at 20 feet per minute. While in motion, they drive 16d common, box or sinker nails. Each tool fires independently, so machine will nail single or multiple studs and joists at this speed.

In the sheathing machine (left end), panel moves under stationary stapling bridge at 12 feet per minute. Paslode Magnum® Staplers drive eighteen staples at once into each stud—will not fire over window and

door openings. Eight additional Magnums staple sheathing to top and bottom plates as the panel moves along. Each stapler fires independently, so every staple is driven tight, flush and on center, regardless of variations in panel thickness.



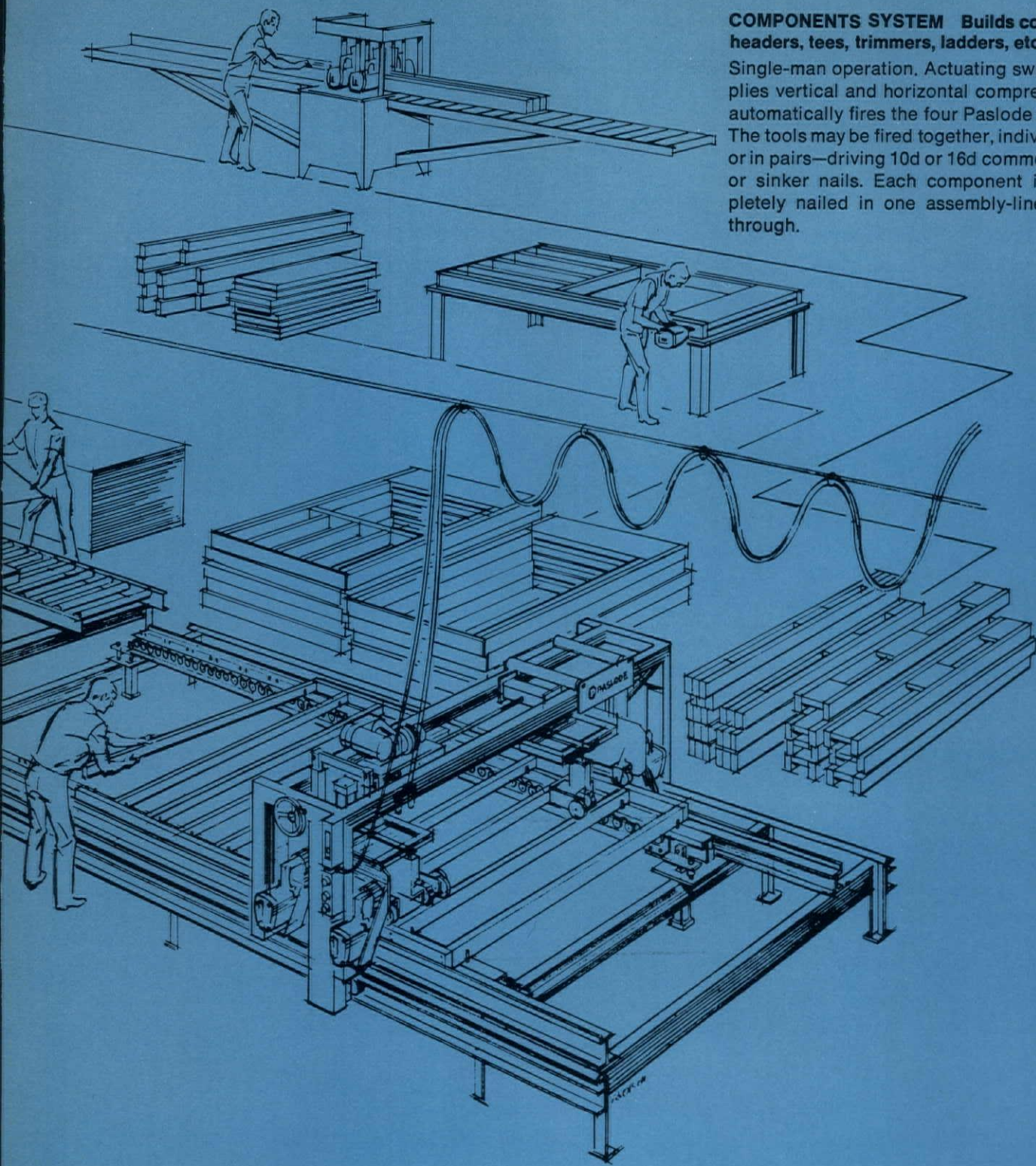
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These automated fastening systems represent a major investment by Paslode—but relatively low cost to their owners. This is because these systems are built around standard Paslode tools, standardized industrial controls, and relatively simple jigs and fixtures.

The key element in each installation is the know-how of the Paslode men who designed and built them. Paslode's years of experience pay off for you, if you want the outstanding economy of automated fastening systems.

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Breakthrough breaks out its first completed houses—at \$22,410 per house

Housing Secretary George Romney's highly-prized Operation Breakthrough program is finally breaking out into the open.

The first completed housing units went on display at the Kalamazoo Breakthrough site in Michigan in late August. At about the same time, Assistant Secretary Harold B. Finger displayed some of the company-by-company cost figures after getting the last of the 22 housing producers signed to a contract.

At Kalamazoo, the most advanced of the nine Breakthrough sites, a dozen housing units were opened to the public—seven from Levitt Building Systems and five from Hercules Industries' Hercoform. It was two years and three months from the day in May 1969 that Romney launched the program to demonstrate the cost-cutting, labor-saving advantages of factory housing and the benefits of market aggregation.

Costs—a surprise. The Department of Housing and Urban Renewal told how the 22 producers shared in \$62.7 million of contracts to produce a total of 2,796 housing units averaging out at \$22,410 per unit. The contract, HUD noted, represented "the total production and erection cost of the housing units" paid for by both private mortgage money and out of HUD funds.

Finger and other Breakthrough officials had a tough time keeping the contract total from ballooning beyond what HUD's research and technology budget could stand. Unit costs that many producers brought to the contract negotiations "exceeded the fair market value in such an amount that it came as a surprise," says one housing industry source. "They were significantly above the preliminary cost estimates."

Some \$50,000 units. The largest Breakthrough contract, for \$7,784,101, went to Descon-Concordia for 269 units on the St. Louis and Jersey City sites, at an average of \$28,937 per unit. The smallest went to Republic Steel for \$200,000 for four units at Kalamazoo (average \$50,000).

The first contract was signed in March with Levitt (\$2,864,000 for 111 units on two sites at an average of \$25,802) but

BREAKTHROUGH'S COST BREAKDOWN

	Units	Contract Total	Average
F.C.E.-Dillon	200	\$3,430,000	\$17,150
General Electric	104	2,436,900	23,432
Home Building Corp.	120	1,990,558	16,588
Material Systems Corp.	150	3,070,932	20,473
National Homes	29	612,941	21,135
Pentom Inc.	20	521,487	26,074
Scholz Homes	64	1,162,296	18,161
Pantek	85	2,250,000	26,471
Camco	153	3,353,000	21,915
Descon/Concordia Systems Ltd.	269	7,784,101	28,937
Shelley Systems Inc.	152	3,976,011	26,158
Townland Marketing & Development	100	3,456,204	34,562
Hercules	101	2,078,000	20,574
Levitt Building Systems	111	2,864,000	25,802
Alcoa	200	3,765,000	8,825
Christiana-Western	153	2,390,836	15,627
Boise-Cascade	244	4,603,000	18,865
Building Systems Inc.	80	2,608,000	32,600
Stirling Homex	206	3,605,000	17,500
Republic Steel	4	200,000	50,000
TRW Systems Corp.	20	800,000	40,000
Rouse Wates	241	5,700,000	23,651

details were withheld until the last two holdouts—Building Systems International of Atlanta and Pentom of Bloomington, Minn.—signed almost six months later. Building Systems signed for \$2,608,000 for 80 units at Macon, Ga. (average, \$32,600) and Pentom for \$521,487 for 20 units at Indianapolis (average \$26,074).

Republic's \$50,000 average is highest per unit, but TRW Systems will have an average of \$40,000 on 20 houses at Sacramento. Lowest average cost is \$15,627 for Christiana-Western on a contract of \$2,390,836 for 153 units on sites at King County (Seattle), Wash., Macon, Ga., and Sacramento.

The way Breakthrough offi-

cial's figure, about two-thirds, or \$40 million, of the \$62.7 million cost of production and erection comes from private sources, and one-third or \$23 million, from HUD. On that basis, the average cost of \$22,410 per housing unit breaks down to about \$14,200 from private funds and \$8,200 from HUD.

Some other expenses. Those figures, however, do not include an additional \$15 million of on-site costs to HUD (for management, displays, etc.) nor off-site costs of \$22 million.

All told, this brings federal outlays to \$60 million for the entire program, (\$23 million for production and erection of the units \$15 million other on-site costs, \$22 million off-site costs) plus the \$65 million of mortgage money.

Breakthrough officials have also estimated, in data submitted to the House Appropriations Committee, that the 22 housing producers are investing \$40 to \$60 million of their own funds, including \$5.5 million for preparing plans, \$12.5 million for "new plants for early volume production," \$2.5 million to modify existing plants, and \$6 million of un-reimbursed costs of producing the prototypes.

Savings to come. Calculating per unit costs from available figures is rough, particularly since the average is figured on Breakthrough's 1,262 single-family units and 1,534 multifamily units. Charles Biederman of Levitt, commenting on the Levitt average of \$25,802, said Levitt's costs "would be half that or less than half that when we get in full-scale production."

Traditional houses. As a comparison, the Census Bureau's July 1971 median sales price for a new single-family home was \$26,700, up from the calendar 1970 average of \$23,400. The average value of the lot attributed to the sales price in 1970 was \$4,100—which would make the part of the price attributed to the house about \$22,600.

Construction costs of housing, according to another Census series, averaged \$18,325 in 1970 for single-family units, and \$15,450 for all units, including multifamily. —DON LOOMIS

McGraw-Hill News,
Washington

State delays trainload of modules

Lack of communication between Washington state officials and Levitt Building Systems Inc., an Operation Breakthrough builder, nearly returned 48 Breakthrough modules, en route to the state, to Levitt's factory in Battle Creek, Mich.

An eleventh-hour meeting between the state, Levitt and Housing and Urban Development Department officials not only ironed out the problems but resulted in the state becoming HUD's "partner" in the experimental housing program.

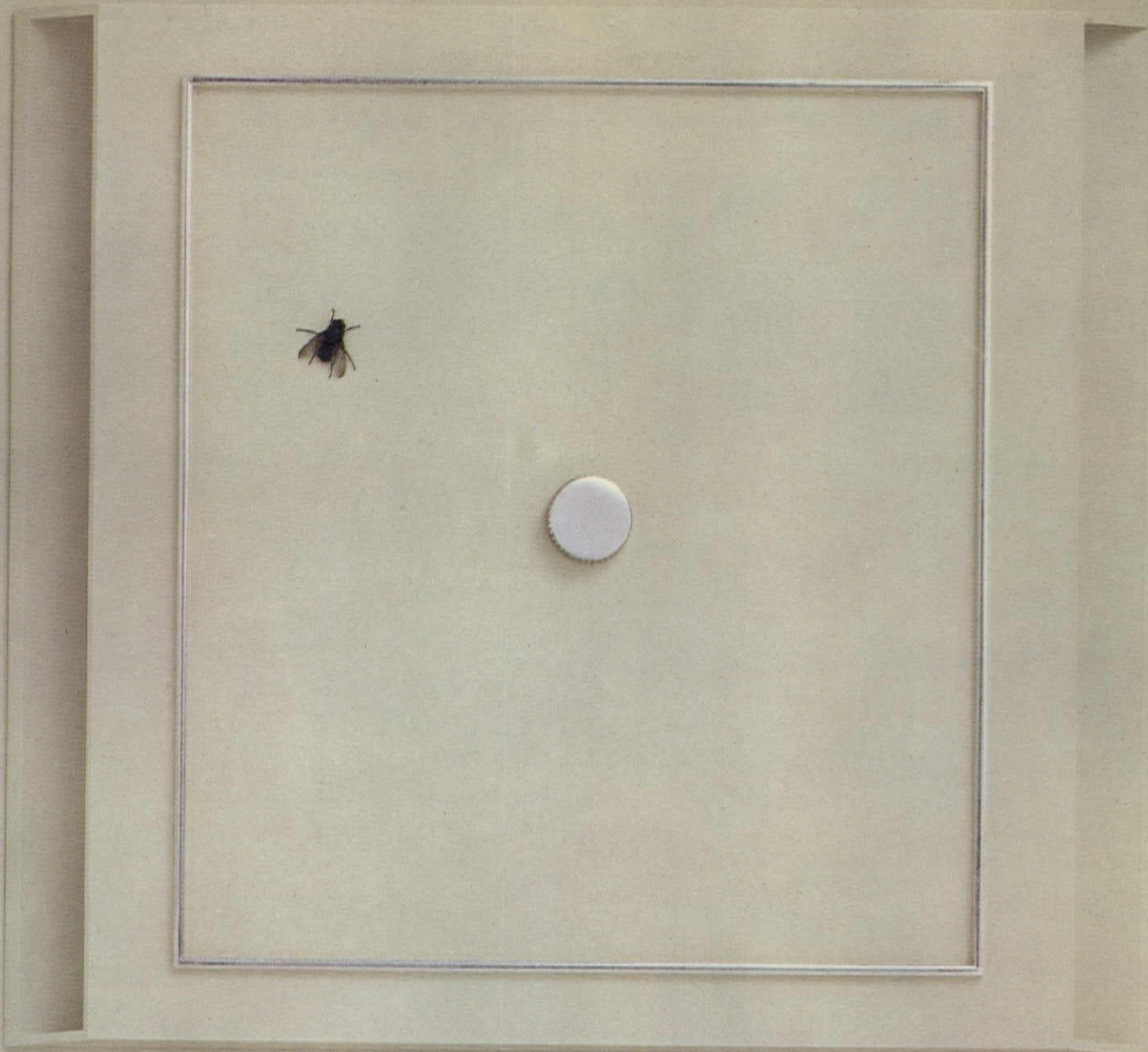
Most other states, counties and cities playing host to Breakthrough projects have waived local regulations for the modules. Washington state, however, with one of the first and strongest state factory housing laws, was reluctant to give the project blanket approval. The state insisted that Levitt and other builders at the state's two sites send detailed drawings, as well as results of tests performed on the units by the

National Bureau of Standards. When the state did not receive Levitt's results, the trainful of modules, by then nearly ready to cross the state boundary, was slowed to 40 miles per hour as officials of both the state and HUD pondered.

Negotiations. It took prodding from the Boeing Co., manager for the two state projects, to get the three factions—HUD, state and Levitt—together.

The Levitt units, which will form eight garden apartments and 20 townhouses, are wood frame stacking modules. They are to be located in King County, just outside Seattle's city limits.

Test period. The state finally agreed to accept the innovative features of the Levitt modules on an experimental basis. After a one- to two-year test period, the state will accept the innovations, writing them into the state's factory building code laws, or it will insist that the buildings be brought up to existing code standards.



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NEWS/FINANCE

Housing stocks soar

HOUSE & HOME's share-value index of 25 leading housing stocks rose 21% in the month ended Sept. 3, largely on the impetus of the reaction to President Nixon's new economic program.

The composite index leaped from 400.69 to 483.85, with share prices of January 1965 representing 100. Stocks on the index are indicated by dots (•) in the tables below and are overprinted in color.

Here's the composite trace:



SHARE PRICES OF JANUARY 1965=100

How top 5 did in each group:

	Sept. '70	Aug. '71	Sept. '71
Builders	371	477	563
Land develop.	368	492	562
Mortgage cos.	498	776	895
Mobile homes	590	991	1246
S&Ls	150	156	199

Company	Sep. 3 Bid/Close	Chng. Prev. Month
BUILDING		
Alodex	9 1/4	- 1/4
AVCO Community Devel. ^b	5 1/2	+ 5/8
American Urban Corp.	4 1/4	+ 1/4
Behring Corp. ^b	10 3/4	+ 1 1/8
Bramalea Cons. (Can.)	3 1/8	0
Capital Divers. (Can.) ^f	.63	-.07
Centex Corp.	29 3/4	+ 3 3/8
Christiana Cos. ^b	9 1/2	+ 3/8
Cons. Bldg. (Can.)	1.40	-.25
Dev. Corp. Amer. ^w	28 1/4	+ 8 1/8
Dev. Int. Corp.	15 1/2	+ 1 1/4
Edwards Indus.	8 3/4	- 1/4
First Nat. Rity. ^b	1 3/4	- 1/8
FPA Corp.	9	+ 1/2
Frouge Corp.	3 7/8	+ 1/4
•General Builders^b	5 1/4	+ 3/8
Gil Development	7 1/8	- 3/8
Hallcraft Homes	37 1/2	+ 4 3/4
Hoffman Rosner Corp.	12 3/4	+ 7/8
Hunt Building Marts	7 1/4	+ 3/8
•Kaufman & Broad^d	37 3/4	+ 8 3/4
Key Co. ^b	12 1/2	+ 2 1/4
Leisure Technology ^y	21 1/8	- 1 1/8
McCarthy Co. ^b	6 1/4	+ 1
McGrath Corp.	6	0
McKeon Const.	28 3/4	+ 7
H. Miller & Sons	14	+ 3/8
National Environment (Sproul Homes)	2 1/2	- 7/8
•Presidential Realty A^m	12 3/4	- 1/8
Presley Development	43 3/4	+ 11 3/4
Pulte Home Corp.	15 3/4	+ 2 1/8
Robino-Ladd Co.	19 1/4	+ 3 1/4
Ryan Homes ^b	75 1/4	+ 7 3/8
Shapell Industries ^b	31 3/4	+ 4
Shelter Corp. of America	20 1/2	+ 2 1/2
Standard Pacific ^b	5 1/4	+ 1/8
3-H Building Corp.	14 1/2	+ 4 1/4
U.S. Financial ^b	45	+ 9
U.S. Home Corp. ^b	35 1/2	+ 6 3/4
•Jim Walter^b	40	+ 4 3/4
Washington Homes	24 1/2	+ 7 1/2
•Dal E. Webb^b	8 1/2	+ 3/4
Western Orbis ^b	5	+ 1 1/2
Wyandotte Indus. ^b (First Hartford)	5 3/4	+ 5/8

	Sep. 3 Bid/Close	Chng. Prev. Month
SAVINGS & LOAN ASSNS.		
American Fin.	26 1/4	+ 1/2
Calif. Fin. ^c	8 1/2	+ 1 1/4
Empire Fin. ^b	16 1/8	+ 2 1/8
•Far West Fin.^c	13 3/4	+ 2 1/8
•Fin. Fed.^c	18 1/4	+ 4 3/8
•First Char. Fin.^c	28	+ 6 3/8
First Lincoln Fin.	7	- 1/4
First S&L Shares ^b	19	+ 1 1/8
First Surety	4 1/2	+ 1 1/8
First West Fin.	2	0
Gibraltar Fin. ^c	24 1/4	+ 5 1/2

	Sep. 3 Bid/Close	Chng. Prev. Month
•Great West Fin.^c	28 1/2	+ 6
Hawthorne Fin.	16	+ 2 3/4
•Imperial Corp.^c	15 3/4	+ 2 1/2
Trans-Coast Inv.	4 1/4	+ 3/8
Trans World Fin. ^c	13 1/4	+ 2 1/2
Union Fin. ^b	13 3/4	+ 2 1/2
Union Fin. Cal. ^c	10 3/4	+ 2 1/2
Wesco Fin. ^c	20	+ 4

	Sep. 3 Bid/Close	Chng. Prev. Month
MORTGAGE INV. TRUSTS		
Alison Mtg. ^b	24 1/2	+ 2 3/8
American Century ^l	27 1/4	+ 3 3/8
Alico Mtg. ^b	21 1/2	+ 2 3/4
BankAmerica Rity.	27 1/4	+ 2 1/2
Barnett Mtg. Tr.	27 3/4	+ 2 1/8
Beneficial Standard Mtg. ^b	23 1/4	+ 3 3/8
Cameron Brown	33 1/4	+ 4 3/8
Capital Mortgage SBI	29	+ 3
Chase Manhattan ^l	50 1/4	+ 1 1/8
CI Mortgage Group ^c	23 1/4	+ 1 1/8
Citizens Mtg. ^b	15 1/2	+ 1
Citizens & So. Rity.	34 1/4	+ 5 3/8
Cleatrust Rity. Investors	24 1/4	+ 5 1/8
Colwell Mtg. Trust ^b	28 1/4	+ 1 1/8
Conn. General ^c	33	+ 2 3/4
•Cont. Mtg. Investors^c	22 1/4	+ 3
Cousins Mtg. & Eq. Inv. ^b	24 1/4	+ 2 1/2
Diversified Mtg. Inv. ^c	29 1/4	+ 2 3/4
Equitable Life ^b	30 1/4	+ 3 1/4
Fidelco Growth Inv. ^b	30	+ 2 1/2
Fidelity Mtg. ^b	21	+ 1 1/4
First Memphis Realty	24	+ 2 1/2
First Mtg. Ins. Co.	13 1/4	- 3/8
First of Denver	22 3/4	+ 1/8
First Pennsylvania	28 3/4	+ 5 1/8
Franklin Realty ^b	9 1/2	- 3/8
Fraser Mtg.	27 3/4	+ 1 1/8
Galbreath Mtg.	27	+ 1
Great Amer. Mtge.	29 1/4	+ 3 3/4
Guardian Mtg. ^b	41 1/2	+ 7
Gulf Mtg. & Rity. ^b	19 1/4	+ 1 1/4
Heitman Mtg. Investors ^b	14 1/4	+ 1 1/8
Hubbard R. E. Investments ^l	22 1/4	+ 1 1/8
Larwin Mtg. ^b	28 1/4	+ 1 3/4
Lincoln Mtg.	8 1/2	+ 3 1/4
Mass Mutual Mtg. & Realty ^c	27 1/4	+ 3 3/8
Median Mtg. Investors	13 1/4	+ 1 3/4
Medical Mtge.	27 1/2	+ 1 1/8
Mony Mtg. Inv. ^c	14	+ 1 1/2
Mortgage Trust of Amer. ^c	26 1/4	+ 1 1/8
North Amer. Mtg. Inv. ^c	30 1/4	+ 3 3/4
Northwestern Mutual Life Mtg. & Rity. ^b	27 1/4	+ 6 1/2
PNB Mtg. & Rity. Investors ^l	24 1/4	+ 1 1/2
Palomar Mtg. Inv. ^b	17 1/4	+ 2 1/4
Penn. R. E. Inv. Tr. ^b	11	- 1 1/2
Realty Income Tr. ^b	15 1/4	0
Republic Mtg. ^b	20 3/4	+ 2 1/8
B. F. Saul, R.E.I.T.	20 3/4	+ 1 1/8
Security Mtg. Investors ^b	17 1/4	+ 1 1/8
Stadium Realty Tr.	9 1/2	- 1/8
State Mutual SBI ^b	24	+ 2 1/4
Sutro Mtg. ^b	21 1/4	+ 2 1/2
Unionamerica Mtg. & Eq. ^b	30 1/4	+ 2 1/8
U.S. Realty Invest. ^b	18 1/4	+ 1 1/4
Wachovia Realty Inv. ^c	34 1/4	+ 3 3/8
Wells Fargo Mtg.	22 1/4	+ 2 1/2

	Sep. 3 Bid/Close	Chng. Prev. Month
MORTGAGE BANKERS		
Charter Co.	33 1/8	- 2 1/8
CMJ Investment Corp. ^b	37 1/4	+ 5 1/8
•Colwell^l	34 3/4	+ 6 1/4
Cont. Illinois Rity. ^c	38 1/4	+ 5 1/8
Excel Investment	9 1/4	0
Fed. Nat. Mtg. Assn. ^b	73 1/4	- 15 3/4
First Mtg. Ins. Co.	13 1/4	- 3 1/4
•First Mtg. Investors^b	28 3/4	+ 1 1/4
•Lomas & Net. Fin.^b	18 1/4	+ 3 1/4
•MGIC Invest. Corp.^c	75 1/4	+ 11
Midwestern Fin. ^b	22	+ 1 1/2
Mortg. Associates	30 1/4	+ 6 1/4
Palomar Fin. ^b	13	+ 1 1/4
UPI Corp. ^b (United Imp. & Inv.)	2 1/4	0

	Sep. 3 Bid/Close	Chng. Prev. Month
LAND DEVELOPERS		
All-State Properties	1 1/4	0
American Land	1 1/8	0
•AMREP Corp.^b	22 3/4	+ 4 1/4
Arvida Corp.	11 1/4	+ 3 1/4
Atlantic Imp.	5	0
Canaveral Int. ^b	4 1/4	- 3/8
Crawford Corp.	4 1/4	+ 1 1/8
•Deltana Corp.^b	34 1/4	+ 7 3/8
Disc Inc.	3 1/4	+ 1/4
Don the Beachcomber Ent. (Garden Land)	4	- 1/4
•Gen. Development^b	27	+ 3 1/4
Gulf State Land and Ind. ^b	4	- 1/4
•Holly Corp.^b	1 1/2	+ 1 1/8
Horizon Corp.	38 1/2	+ 8 1/2
Land Resources	4 1/2	+ 1 1/8
Major Realty	10 1/4	+ 1 1/4
•McCulloch Oil^b	29 1/4	+ 4 3/8
Sol. Rity. & Util. ^b	5 1/4	+ 3/8

	Sep. 3 Bid/Close	Chng. Prev. Month
MOBILE HOMES & MODULES		
Conchemco ^b	21 1/2	+ 8
•Champion Home Bldrs.^b	38 1/4	+ 11 3/4
Commodore Corp. ^b	13 1/2	+ 3 3/8
DeRose Industries ^b	11 1/4	+ 1 1/4
•Fleetwood^b	55 1/2	+ 10 1/2
Golden West Mobile Homes ^b	18 1/2	+ 4 3/8
•Guerdon^b	31 1/4	+ 4 1/2
Mobile Americana	9	+ 3/8
Mobile Home Ind. ^b	26 1/4	+ 8
Monarch Ind.	6 1/4	+ 1 1/8
•Redman Indus.^c	24 1/2	+ 6 1/2

	Sep. 3 Bid/ Close	Chng. Prev. Month
Rex-Noreco ^b	25	+ 5 1/2
•Skyline ^b	47 1/2	+ 7 3/4
Town & Country Mobile ^b	97 1/2	+ 1 3/4
Triangle Mobile	6 1/2	+ 1 3/4
Zimmer Homes ^b	22	+ 4
Albee Homes	3 1/2	+ 3/8
AABCO Industries	5 1/2	- 3/8
Brigadier Indust.	5 1/2	+ 1
Building Systems Inc.	27 3/4	+ 5 3/4
Environmental Systems	13 1/2	+ 1/2
Hodgson Houses	4 1/4	+ 1/4
Liberty Homes	20 3/4	- 4 7/8
Modular Dynamics	2 3/4	- 1/4
Modular Housing Systems Inc.	11 1/2	+ 3/4
National Homes ^b	34	+ 5 3/4
Nationwide Homes	13	+ 3 1/4
Shelter Resources ^b	11 3/4	+ 1 3/8
Stirling Homex	13 3/4	+ 1 1/2
Swift Industries	3	- 1/4

DIVERSIFIED COMPANIES

Amer. Standard ^a (Wm. Lyon)	21 3/4	- 1/8
AVCO Corp. ^a	17 3/4	+ 3 3/4
Bethlehem Steel ^b	26 3/4	+ 4 3/4
Boise Cascade ^a	28	+ 5 1/4
CNA Financial (Larwin) ^a	24 1/2	+ 3 1/8
Castle & Cooke ^c (Oceanic Prop.)	17 3/4	+ 1
CBS ^a (Klingbell)	44 1/2	+ 1 1/2
Christiana Securities	137	+ 13
Citizens Financial ^b	14 3/4	+ 2 1/8
City Investing ^a (Sterling Forest)	20 3/4	+ 1 3/8
Corning Glass ^a	240	+ 14 3/4
Cousins Properties	27 3/4	+ 2 1/4
Dreyfus Corp. ^a (Bert Smokier)	28	- 3/8
Evans Products ^a	47 3/4	+ 5 1/4
Ferro Corp. ^a	25 3/4	+ 3 1/2
First Gen. Resources	6 1/4	- 7/8
Fischback & More ^a	37 1/2	+ 4
Forest City Ent. ^b	26 3/8	+ 1 3/4
Fruehauf Corp. ^a	38 1/2	+ 5 3/4
Fuqua Indus. ^a	23 1/2	+ 2 3/8
Georgia Pacific ^a	54 7/8	+ 3 1/4
Glasrock Products ^b	7 1/2	+ 1/8
Great Southwest Corp.	2 1/8	0
Gulf Oil (Gulf Reston) ^a	28 3/4	- 1 1/4
INA Corp. (M. J. Brock) ^a	54 3/4	+ 3 3/8
Inland Steel ^a (Scholz)	32 1/2	+ 5 1/2
International Basic Econ.	7 1/4	+ 1/4
International Paper ^a	35 3/4	+ 2 3/8
Internat. Tel. & Tel. ^a (Levitt)	60 1/2	+ 4
Investors Funding ^b	10 1/2	0
Leroy Corp.	2 3/4	+ 1/4
Monogram Industries ^a	10 1/2	+ 1 3/8
Occidental Petroleum ^a (Occ. Pet. Land & Dev.)	16 3/4	- 1/2
Pacific Coast Prop. ^b	3 3/4	- 1/8
Perini Corp. ^b	6 1/4	+ 1/4
Philip Morris ^a	68 1/2	+ 6 3/8
Prosher Corp.	5 3/4	- 3/4
Rouse Co.	51 1/4	+ 9 3/4
Santa Anita Consol. (Robt. H. Grand Corp.)	52 1/2	+ 1 1/4
Sayre & Fisher ^a	3 1/2	0
Tishman Realty ^a	21 3/4	- 1 1/8
Titan Group Inc.	3 1/4	- 1/4
Uris Bldg. ^a	17 3/4	- 3/4
U.S. Ply.-Champion ^a (Lewis & Cooke)	32	+ 2
Weil McLain ^b	23 3/4	+ 4 1/4
Westinghouse ^a (Coral Ridge Prop.)	94	+ 11 3/4
Weyerhaeuser ^a (Weyer. Real Est. Co.)	55 1/2	+ 3
Whittaker (Vector Corp.) ^a	11 3/8	+ 2 1/8
Wickes Corp. ^a	44	+ 4 1/8

BUILDING PRODUCTS

Alcan Aluminium ^a (Alcan Design Homes)	19 1/4	- 3/4
Ameron ^a	15 3/4	+ 3/8
Automated Bldg. Com- ponents ^b	11 1/8	+ 2
Bird & Son	55	+ 5
Brooks Scanlon	19 1/4	+ 1/2
Ceco Corp. ^a	28 3/4	+ 3 3/8
Certain-teed ^a (Realtec Inc.)	34 3/4	+ 5 3/8
Clow	20 1/4	0
Colonial Sand ^b	9 3/4	- 5/8
Consolidated Rock	26 3/4	+ 3/4
Flintkote Co. ^a	30 3/8	+ 4 3/8
Florida Steel ^a	25 1/4	+ 4 3/8
Glen Gery Corp. ^b	9	0
Interpace ^a	26 1/2	+ 1 1/2
Johns Manville ^a	40 1/2	+ 5/8
Keene Corp.	10 1/4	+ 1/2
Kirsch Co. ^a	52 1/4	+ 5 1/2
Knape & Vogt	44 1/2	+ 4
Lowe's Companies	68 3/4	+ 6 3/4
Masonite Corp. ^a	62 3/4	+ 6 3/4
Mouldings Inc. ^a	9	- 5/8
National Gypsum ^a	23 1/4	+ 2 3/8
NL Industries ^a	18 3/4	+ 7/8
Owens Corning Fiber- glass ^a	48 1/2	+ 3 3/8
PPG Industries ^a	42 3/4	+ 7 3/8
Permaner Corp. ^b	13 3/4	+ 1/8
Philips Industries ^a	22 1/4	+ 3 3/8
Pioneer Plastics ^a	9 3/4	+ 1/4
Ply Gem Industries ^b	8 3/4	+ 5/8
Pottlatch Forests ^a	28 1/4	+ 1

	Sep. 3 Bid/ Close	Chng. Prev. Month
Pratt & Lambert ^b	17	+ 5/8
Reliance Universal ^b	18 3/4	+ 2 3/8
Republic Gypsum	9 3/4	+ 3/4
Robertson (H. H.) ^a	24 1/2	+ 3
Scotty's Home Builders ^b	32 3/4	+ 4 1/4
Sherwin Williams ^a	48 3/4	+ 2 3/8
Southwest Forest Indus. ^b	18 3/4	+ 2
Standard Brands Paint ^a	68 3/4	+ 5 3/4
Supercrete Ltd. ^b	3 3/4	0
U.S. Ceramic Tile ^b	7 1/4	+ 1
U.S. Gypsum ^a	70	+ 5
Valspar Corp. ^b	4 3/4	- 1/8
Vulcan Material ^a	22 3/4	- 1/4
Warner Co. ^a	41	- 1

APPLIANCES

Bernz-O-Matic	97 1/2	+ 3 3/8
Hobart Manufacturing ^a	56	+ 5 1/2
Hoover Co.	57	+ 2 1/4
Magic Chef ^a	37 1/4	+ 3 3/4
Maytag Co. ^a	36 1/2	+ 1 1/4
Tappan Co. ^a	27 3/4	+ 5 3/8
Welbilt Corp. ^a	3 1/2	+ 3 3/8
Whirlpool Corp. ^a	93	+ 5 1/4

CEMENT PRODUCERS

Alpha Portland ^a	16	+ 2 1/4
American Cement ^a	8 1/4	+ 1 1/8
California Portland ^b	36	0
General Portland ^a	30 3/4	+ 1/4
Giant Portland ^a	14 3/4	+ 1
Ideal Basic Indus. ^a	18 3/4	+ 1 3/4
Kaiser Cement & Gyp. ^a	18 3/4	- 1/2
Lehigh Portland ^a	16	+ 1 3/4
Lone Star ^a	27 3/4	+ 1 1/8
Louisville Cement ^b	28 3/4	+ 2 3/8
Marquette Cement ^a	14 3/4	+ 1 3/4
Martin Marietta ^a	19 3/4	+ 1 1/2
Medusa Portland ^a	39	- 1 1/4
Missouri Portland ^a	32	+ 2 3/4
Penn Dixie Cement ^a	11 3/4	+ 1 3/4
Puerto Rican Cement ^a	12 3/4	+ 1 1/8

CONSTRUCTION MACHINERY

American Hoist & Derrick ^a	13 3/4	+ 2 1/4
Caterpillar Tractor ^a	55 1/2	+ 8 1/8
Clark Equipment ^a	48	+ 5 3/4
Harnischfeger Corp. ^b	30	+ 7 1/4
Kaiser Industries ^b	12 3/4	+ 1 3/8
Deere & Co. ^a	49 1/2	+ 7 3/8
Pettibone ^a	15 1/2	+ 1 3/8

HEATING-AIR CONDITIONING

Borg Warner ^a	28 1/2	+ 3
Buffalo Forge ^a	43 3/4	+ 3
Carrier Corp. ^a	37 3/4	+ 4 3/4
Coleman Co. ^b	34 3/4	+ 2 3/8
Copeland Refrig. ^a	64 1/4	+ 6 1/4
Crane ^a	49 1/4	+ 6 1/8
Culligan ^a	17	+ 1 1/2
Fedders ^a	43 1/4	- 3/4
Intertherm Inc.	9 1/4	+ 1 1/8
Masco Corp. ^a	61 7/8	+ 2 1/2
Tecumseh	154	- 10
Trane Co. ^a	68	+ 3 1/4

HOME FURNISHINGS

American Furniture Co.	10	+ 2
American Seating ^a	18 1/2	+ 1
Armstrong Cork Co. ^a	38 1/2	+ 4 1/4
Bassett Furniture	47 3/4	+ 8 3/8
Bath Industries ^a	35 3/4	+ 4 1/4
Baumritter Corp.	30	+ 7 1/8
General Fireproofing ^a	10 1/4	+ 1 1/2
General Housewares	10 1/2	+ 1 1/2
Giffen Industries	4 1/4	0
Hamilton Cosco ^b	6 3/4	+ 1 1/2
Henredon Furniture	38 1/4	+ 2 1/4
Hickory Furniture	10 3/4	+ 2 1/2
Kroehler Mfg. ^a	21	+ 1
Levitz Furniture ^b	80 3/4	+ 15 1/4
Lightolier ^a	8 3/4	+ 3 3/4
Ludlow Corp. ^a	25 1/4	+ 4 1/4
Mohasco Industries ^a	34 1/4	+ 5/8
Ozite Corp.	15	+ 2
Simmons Co. ^a	34 1/2	+ 1 3/8

TOOLS & HARDWARE

Black & Decker ^a	75	+ 2 3/8
Bliss & Laughlin ^a	21 3/4	+ 1
Emhart Corp. ^a	36 1/2	+ 6 3/4
Klikkok Corp. ^{b,d}	11	- 1/8
Scovill Mfg. ^a	47 3/4	+ 4 3/8
Skil Corp. ^a	28 1/2	+ 3 1/2
Snap-On-Tools	68 1/2	+ 6 1/2
Stanley Works ^a	29 1/2	+ 2 1/2
Tool Research ^a	25 3/4	+ 3 3/8

MISCELLANEOUS

Butler Mfg.	27 1/4	0
Dorr-Oliver ^a	15 3/4	+ 3 3/8
Foster Wheeler ^a	25 3/4	+ 3 3/8
Morrison Knudsen	18	+ 5/8
Neptune Meter ^a	17 3/4	+ 1 3/4
Otis Elevator ^a	43 1/4	+ 3 1/4
Raymond Int'l. ^a	10 3/4	+ 1/8

a—stock newly added to table. b—closing price ASE. c—closing price NYSE. d—not traded on date quoted. g—closing price MSE. h—closing price PCSE. *—Computed in HOUSE & HOME's 25-stock value index. y—adjusted for 2-for-1.

Sources: Standard & Poor's, New York City; N.Y. Hanseatic Corp., Gairdner & Co., National Assn. of Securities Dealers, Philip Beer of Russell & Saxe, American Stock Exchange, New York Stock Exchange, Midwest Stock Exchange, Pacific Coast Stock Exchange.



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Seattle paradox: blitzed housing industry survives on higher-priced homes

DOUG WILSON

The city that soared with the SST has suddenly found itself with the nation's hardest hit local economy and a housing market that would seem to qualify as a disaster.

First-half permits were down 37% to 3,585, from 5,723 in the first half of 1970. Fewer than 6,500 units will be started this year, the lowest figure in 20 years. The payroll of the biggest employer, the Boeing Co., is off by two-thirds from its 1969 peak of 100,000 workmen, and the city's unemployment rate exceeds 15% of the labor force.

The lessons. Much of Seattle's housing industry is surviving in surprisingly healthy fashion, however, and one reason appears to be a successful shift into higher priced homes.

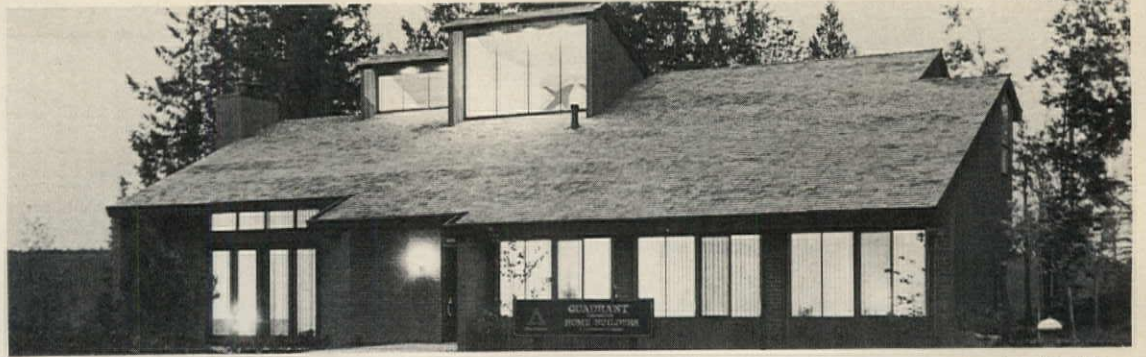
Because builders are finding buyers where few were expected, and because even the hardship areas have spawned some comparatively new marketing approaches—wholesale mortgage forbearance, for instance—the Seattle story has lessons for the homebuilding industry in a dozen other cities and communities threatened by economic decline.

Buying upward. Buyers present a paradox.

One-third of the metropolitan area's residents are more concerned about saving their present homes than buying new shelter, but the other two-thirds are showing a strong appetite for houses in the upper price brackets and for recreational developments.

Quadrant's climb. The Quadrant Corp. of Bellevue, owned by the Weyerhaeuser Co., the timber giant of nearby Tacoma, is a key figure on both sides of the paradox. It has jumped into the Puget Sound housing market as a builder, for the first time, in the upper-income brackets; it is developing several recreational properties in the area and it is fighting to maintain reasonably high standards in a low-cost housing community threatened by blight.

Quadrant has built in other areas but had limited itself to land developing in the Seattle area until this year. "We found ourselves with an acute inventory shortage of homes in the \$40,000 range in several of our developments," explains Dick



A \$70,000 show house awakens buyer interest as Seattle builders turn to luxury market to survive area's economic crisis. Above: Quadrant's Four Seasons model in subdivision east of the city. Another builder is putting up a \$50,000 house next door.

Willard, president. "Our usual builders were reluctant, so we went in ourselves."

The first result is a \$70,000 residence known as Four Seasons in the Tam O'Shanter subdivision east of Seattle. The first custom-designed show home in Greater Seattle since the economy turned downward two years ago, the unit has proved a good traffic-builder since its opening June 20. Another builder is already following the Quadrant example, constructing a \$50,000 residence on adjacent property.

Stimulation. Quadrant has two more semi-custom units under construction in Tam O'Shanter and another in Brae Burn, nearby. In its other golf course communities, Fairwood and Twin Lakes, it has opened one new model and is planning or building at least 12 more, all in the \$30-40,000 range. The company talks about building 30 to 50 units this year.

"Our primary objectives," says Willard, "are to help stimulate the market with new ideas and greater product selection and to complement the activities of other custom builders in our subdivisions. The response to our first units signifies an increasing demand for new homes in the upper price ranges."

And caution. Not all builders are following Quadrant's lead, of course. Only two that have built in the Quadrant developments over the years have new offerings today. They are locally-owned Hebb & Narodick and International Telephone & Telegraph's United Homes Corp., both of whom are concentrating their activities elsewhere. Hebb & Narodick has projects in Honolulu and United Homes has several in Washing-

ton state outside Seattle.

Among other Quadrant builders, at least one has gone out of business and two—Boise Cascade and American Housing Guild—have withdrawn from the area. The McGrath Corp. of Bellevue and Evergreen State Builders are concentrating on building modulars in Alaska.

The upper bracket. Statistics clearly indicate that successful builders are directing their efforts to the upper price ranges, however. In the King County area around Seattle, 1,235 permits for new homes with a total valuation of \$30.9 million were issued during the first seven months of this year, or more than \$25,000 a unit. This compares with 1,485 permits for \$31.4 million, or something over \$21,000 a unit, for the same period last year.

The demand for recreational property equals that for more expensive homes; Quadrant has a stake in this market too.

Problem cases. The outlook is far more grim in Timberlane, which Quadrant began to promote in 1968. The first development under the FHA's CHOICE program to promote home ownership among middle-income families, Timberlane won praise for its open-space planning. Its homes cost \$13,950 to \$19,690.

Although comparatively remote from Seattle, Timberlane was within easy driving distance of three Boeing plants. More than 500 homes were built in less than two years, by Boise Cascade and United Homes, with many sold to Boeing employees. When Boeing cut back its labor force, people left Timberlane about as fast as they had moved in. Early this year, more than 150 homes had been vacated and had al-

ready started to deteriorate.

Rallying support. This deterioration has gone unchecked at several other low-cost developments, notably at nearby Lea Hills, but the Timberlane Homeowners' Association, active since the project's inception, stepped in to restore order. Quadrant and its builders helped by providing food and funds for a community-wide barbecue to boost morale and build spirit. The FHA was persuaded to clean up vacant yards and homes and even pay the homeowners' association dues of \$5 a month for properties FHA had acquired.

So the community clubhouse, swimming pool and playground continue in operation, and the association has initiated a PRIDE program which gives a "home of the month" award to the Timberlane families credited with the best home improvement program.

Mortgage relief. The number of vacancies has been reduced slightly, partly because of FHA's success in selling some of its properties, but largely because of forbearance agreements worked out by mortgage companies with slow-pay homeowners. Under these agreements, encouraged by the FHA, the typical mortgage payment is temporarily reduced as much as half, leaving just enough to maintain the reserves for taxes and insurance, plus a bit for the interest and principal.

Firstbank Mortgage Corp., a subsidiary of Seattle-First National Bank, has pioneered in these forbearance agreements. Early this year, it set up a program headed by David Sather, a housing consultant with banking experience. The Federal National Mortgage Assn., which owns a third of Firstbank's

TO PAGE 26

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BAR THE ORDINARY



Seattle's blitzed builders survive on higher-priced models ... continued

portfolio, has given blanket approval.

Debtor's profile. After four months in the program, Sather can generalize about his clients. "They're about 30 years old, in their first or second house," he says. "About a third of them worked at Boeing and another third in some phase of the construction industry. Their mortgages range from \$15,000 to \$30,000, on homes valued up to \$45,000 and typically three or four years old. Most were blue-collar workers, with incomes ranging from \$4,500 to \$20,000 a year. Some had no equity at all in their homes, but the average is \$1,000 to \$1,500 and some have as much as \$25,000."

Some betray their attitude toward home ownership by referring to their mortgage payments as "rent" and some required "every dime of overtime" to cover their obligations.

Six-month deadline. The moment of truth for holders of

METRO SEATTLE			
First Half			
	1971	1970	% Change
Total permits	3,585	5,723	-37
1-4 Fam.	2,545	3,103	-18
Apts.	1,040	2,620	-60
Apts. Under Cons.			
July 1	2,200	5,000	-46
Total Vacancies	31,900	30,200	
April 1	6.2%	6.0%	
Multiples	19,700	18,500	
	13.7%	13.4%	
Total Employment			
June 1	481,000	526,300	
Unemployment			
June 1	15.2%	10.7%	

Source: Advance Mortgage Corp., Detroit.

these agreements will come at the end of six months, when Firstbank hopes they will be able to resume normal payments, catching up on their delinquency at the rate of \$10 to \$25 a month for as long as six years. Extensions will be considered but discouraged, in the belief that more than six months of delinquency will be too much to catch up.

The first agreements come up

for review in November, and that may be too early for residents of Timberlane and other Seattle housing projects. Boeing continues to reduce its work force, with no end in sight, and Seattle's economy is unlikely to turn around until Boeing at least stabilizes its payroll.

Foreclosures. The alternatives for many will be foreclosure, gaining nine months or more

of "free rent," or granting the mortgage company a deed in lieu of foreclosure and thus protecting tenant credit ratings. At the end of July, the Seattle FHA office held title to 2,974 pieces of property, as compared to 799 a year ago. The office expects this number to peak between 5,000 and 6,000 by the end of next year. Another 6,707 mortgages were in default, by one to three months, although this total was slightly lower than in February.

Performances. That's Seattle, from top to bottom rung.

There are builders' lessons, all along the way, from this city left reeling by the sudden cancellation of the government's giant supersonic transport project. But perhaps the greatest lesson of all is that the homebuilding industry itself has learned to survive—with confidence and some measure of success.

—RAY BLOOMBERG
McGraw-Hill News, Seattle

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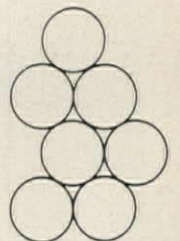
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Storm expert warns: stop building in hurricane lanes or 20,000 may perish

As many as 20,000 to 50,000 people could die in a hurricane disaster if homebuilding in shore areas continues at its present rate, the nation's top hurricane forecaster warns. Some 40 million homes already lie in the danger zone.

Robert H. Simpson, director of the Weather Service's national hurricane center in Miami, has a straightforward solution: keep business and residential construction at least two blocks from the coast and mobile homes ten miles away.

Too little time. "With more people building more homes closer to shore, population density is about to outrun the forecaster's ability to give adequate warnings," Simpson cautions. He explains that evacuation routes in many areas are already barely adequate.

The danger is compounded by the speed with which hurricanes strike. Forecasters can-



Storm warning for builders comes from Robert Simpson of Miami hurricane center.

not now provide more than 12 hours for daylight evacuation.

Better forecasts. The Weather Service is working toward more precise forecasting so that hurricane warnings can be issued for an area of 100-150 miles along the coast instead of the present 200-250 miles. It is also circulating new maps showing the areas subject to flooding, the safest high ground, and the best evacuation routes. Finally,

it plans to accompany its hurricane advisories with "storm surge" forecasts—predictions of arrival times, depths, and distances inland of rising waters.

Simpson believes these forecasts should help convince potential victims to quit threatened areas sooner, and thus reduce the number of casualties—nine times as many people drown during a hurricane as die from all other causes.

Storm surge forecasts are already available along the Gulf Coast and will soon be extended to the Atlantic Coast.

Insurance. The Department of Housing's Federal Insurance Administration has been underwriting water-damage insurance for residents of vulnerable areas. Last year, storm damage to buildings and other property totaled \$1.5 billion.

To date, 75,864 FIA policies for a total of \$1.2 billion have been written. The agency is concerned because only \$98 million of the insurance in force represents small business policies. Emergency disaster loans are no longer available from the Small Business Administration, the FHA, the VA or the Department of Agriculture for residents of affected areas who fail to take out such policies.

—WARREN BURKETT
McGraw-Hill News,
Washington

Computer reaches into builder's office to guide him in critical-path maze

A computer outlet in the builder's own headquarters now provides instant data for the decisions constantly necessary in the critical-path method of construction.

The highly sophisticated critical-path technique has been in use for at least 10 years, but most builders have depended on hand-drawn charts to guide them through the operation. At best, they have used punched cards that had to be carted to a computer center.

A new system sets up a telephone-teletype link with an International Business Machines 360 computer. The machine can deliver split-second data on the shifts in manpower and scheduling that are required in critical-path operations.

Costs. The IBM data program is called MINIPERT, the last four letters standing for the company's program and evaluation review technique. The MINIPERT service is offered for \$200 to \$300 a month in 15 cities by the Scientific Time Sharing Corp. (STS) of Washington, D.C.

The builder establishes starting and completion dates and a network of steps, their sequence, and the estimated num-

ber of working days needed to move from one step to another.

The computer then identifies the critical path—the sequence of vital steps that must be finished exactly as scheduled if the proposed completion date is to be met. The machine also identifies the steps which have slack time.

One-hour updating. The service provides 15 standardized

reports, 15 charts, and a manpower forecast for each building trade. Reports can be manipulated to show the sequence of construction steps, the steps without any slack in their schedule, the required completion dates, or the names of people who must be notified as their work is needed to keep the project on schedule.

Once all data for a project

have been fed into the computer, new data affecting schedules can be entered and the entire critical report can be updated and printed out in about an hour. Such rapid updating permits builders to speed collection of progress payments or to adjust schedules to avoid extra financing charges. The cost: approximately \$25 for computer time.

At present, the program can accommodate only about 200 separate construction steps. However, STS expects to expand this to 500 or 1,000.

Telephone link. Builders subscribing must lease a teletype keyboard terminal for \$100-\$125 a month and pay for the installation of an acoustic coupler or a Dataphone set that will link the keyboard to the central computer. The telephone linkage is a local call in Boston, Buffalo, Chicago, Dallas, Hartford, Los Angeles, New York, Palo Alto, Philadelphia, Pittsburgh, San Francisco, Stamford, Conn., Washington, and White Plains, N.Y., and a long-distance call anywhere else.

To feed data to the computer, builders must learn a programming language known as APL which STS estimates should take less than a week.

Maryland orders builders and utilities to put all new wiring underground

Maryland has just become the first state to require that power and telephone lines for all new construction be laid underground. The state is now studying the possibility of removing existing overhead power lines.

Back in 1968, the Maryland Public Service Commission had already ordered such undergrounding in residential subdivisions of five lots or more. In 1969, commercial and industrial construction came under the regulation. A new rule went into effect Sept. 1 and extends the requirement to all new residential construction, including mobile homes.

The added cost to the home-

owner or developer will be minimal—\$125 for burying power lines and \$18 for telephone lines on an average lot set back 50 feet from the main power line.

The utilities will bear the main costs. Nevertheless, the state's two largest power companies, Baltimore Gas & Electric and Potomac Electric & Power, did not officially oppose the order.

Opponents. The Chesapeake & Potomac Telephone Company did oppose the new rules, however, as did several smaller utilities, including Potomac Edison, which serves mountainous western Maryland, where trenching will cost more.



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A National Institute for Building Sciences is gaining support with Congress

Congress may be close to setting up a quasi-governmental corporation to set both performance and specification standards for building technologies.

Aimed at eliminating the local code restrictions that have discouraged cost breakthroughs in housing, legislation has now been introduced in both the Senate and House to establish a National Institute of Building Sciences. The institute might issue approvals of acceptable building techniques and systems.

Senator Jacob Javits (R., N.Y.) and Representative William Moorehead (D., Pa.) are leading the drive to standardize building codes across the country—and Congressional aides believe that the legislation has a reasonably good chance of enactment as a part of a bigger housing bill.

Prospects. One Senate aide noted that similar legislation failed last year. "This year," he said, "it will probably get considerably more favorable treatment."

The proposal will not be considered alone. Housing legislation hearings are beginning in both Senate and House, and the Javits-Moorehead proposal will become part of that package.

Cost of codes. Housing experts for years have decried the building code problem. The National Commission on Urban Problems, popularly known as the Douglas commission for its chairman Paul Douglas, spelled out the problem. The Commission's 15-point indictment said that unneeded provisions and restrictions in locally adopted codes add significantly to the cost of housing, delay construction, inhibit creative design, and prevent the use of the most up-to-date, modern materials.

In introducing the legislation, Senator Javits said that "the absence of an authoritative national source to advise the housing industry and local authorities as to the latest technological developments in building materials and construction techniques and to propose nationally acceptable standards for local building codes has proven to be a great obstacle to efforts to meet the national housing goal."

Critics point out that the in-



HOUSE'S MOOREHEAD
They lead the drive...



SENATE'S JAVITS
... for building code reform

stitute could become just another regulatory agency and that it is highly unlikely that acceptable performance standards can be set within an open and democratic process.

Institute's role. The new institute would develop and publish standards affecting building materials and local building codes, promote and coordinate tests and studies of new building products and construction techniques, provide research and technical services with respect to such materials and techniques, and assemble and com-

ordinate all present activities in this area.

Exit for U.S. This would probably mean a takeover of federal efforts such as Operation Breakthrough—and conceivably could take the government out of experimental housing.

The federal government would sponsor the project for the first five years. Moorehead says the institute would need \$5 million for the first two years, \$3 million for the next two years, and \$2 million for the fifth year. "After that," he says, "the institute's funding would

come from grants and contracts from public and private industry segments."

Origins. What Javits and Moorehead are attempting to promote is similar to the concept that Housing Secretary George Romney has developed in the administration's Breakthrough program.

"That is," Moorehead says, "that steps be taken immediately to develop cost-saving building innovations. One of the biggest stumbling blocks to this effort," the Pennsylvania Democrat says, "has been the thousands of different, often conflicting building codes across the country."

"Combine this with the lack of an authoritative technical institution to review and improve innovative techniques, and the natural result is higher costs and obstacles in the introduction of new materials."

Resistance. Moorehead says he recognizes the problems of imposing a national standard in specific localities. "There is a reluctance," he says, "to impose a national code because there is the matter of local pride, and furthermore, administration of a national code from remote Washington would involve a very cumbersome machinery which would probably be not as good as local administration."

This is the reason for the idea of a National Institute of Building Sciences—manned by experts chosen from various building trades. Under the proposal, the Institute's board of directors would be composed of from 15 to 21 members appointed by the President with the advice and consent of the Senate. The National Academy of Science and Engineering's Research Council would be called in to recommend nominees "using all help practicable from industry segments."

The board would also hold members from professional societies, labor unions, academic and technical institutions, consumer and public interest groups.

Moorehead says it is his hope that this blend of interest groups would prevent any one segment—"particularly government"—from dominating the institute.

—A.M.

Free publicity goes on sale—or tries

Publishers beware.

The Federal National Mortgage Assn., that stylized version of the former government mortgage bank, has begun to offer its news releases for sale, but it is limiting its paid subscriptions to security analysts.

Fanny May's venture began in June with a letter to all security analysts (whose interest in FNMA relates more to the company's stock than its mortgage operations). The memorandum suggested that the 3,000 analysts of FNMA's mailing list were costing the central mortgage bank a small fortune in postage and printing.

A burst of apathy. What with tight money approaching and all, Fanny May said, it would have to charge non-press recipients of its news handouts a \$20 fee if they wanted to continue receiving all FNMA news as it happened.

The analysts gave the memo their loudest ho-hum. All of 50 responses were received to the 2,500-to-3,000 mailing. Only about 30 replies said analysts wanted the handouts.

So a second memorandum

went out. Said FNMA's vice president for corporate relations, Gordon E. Nelson: "Our recent memorandum about the \$20 a year subscription to all FNMA news releases got more press attention than it did analyst attention."

High policy, etc. Nelson went on to re-explain FNMA's position. The press would still get FNMA's news handouts free. Analysts could receive a two-week summary of FNMA news along with such material as quarterly and annual reports, all free. But, said Nelson:

"An analyst who wants to receive every news release can do so by paying the \$20 subscription price. This will recover our costs for postage and discourage those who might ask for everything if it's free but who really don't read them all and aren't interested enough to put through a voucher to pay the \$20."

The \$600 in subscription income already received by FNMA will defray some corporation costs. But analysts doubt that it will have much impact on earnings.

—A. M.

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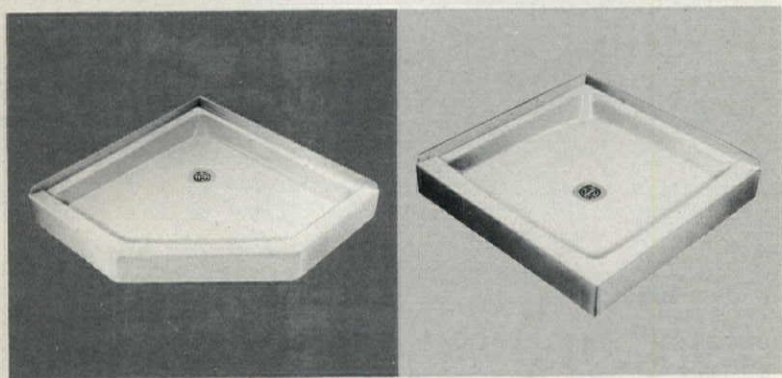
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Rip Farry and Ross Blakely chosen to head savings and loan leagues

John P. (Rip) Farry, president of the First Federal Savings & Loan Assn. of Albert Lea, Minn., will become president of the U.S. Savings and Loan League at the league's New York convention Nov. 18-23.

Farry will succeed Lewis S. Eaton as president of the 4,800-member trade association. Richard G. Gilbert, president of Citizens Savings Assn., Canton, Ohio, will assume the league vice presidency vacated by Farry.

Career. A native of Albert Lea, Farry joined First Federal in 1946 after discharge from the U.S. Navy. He has been a director since 1952 and president since 1953.

Farry has been president of the Savings League of Minnesota and was chairman of its

legislative committee for 12 years. He has also served on the legislative committee of the U.S. League since 1955 and recently completed a term on its executive committee.

National League. In Washington, the 500-member National League of Insured Savings Associations has just elected Ross M. Blakely as president and Raleigh W. Greene as vice president.

Blakely is president of Coast and Southern Federal S&L, Los Angeles, and Greene is president of First Federal S&L of St. Petersburg, Fla. Blakely succeeds C. E. Bentley, president of Abilene (Tex.) Savings Assn., as leader of the league, which will hold its annual meeting in Montreal Oct. 17-21.

Rodney Radom dies in California; managed Coast builders conference

Rodney Radom, manager of the Pacific Coast Builders Conference from its beginning 13 years ago, died in San Francisco on September 1. He was 65.

Under his leadership, the PCBC blossomed from a regional conference with 300 builders attending, to a national event that now attracts over 5,000 people.

Stanley C. Swartz of San Diego, president of the 14th annual conference, called Radom's death "a great loss to the building industry of California, the West, and the nation." He added:

"The personalized kind of professional leadership he brought to what has become the most popular builders' conference in the nation will leave its mark on the PCBC for years to come."

Radom was born in Kiev, Russia, and came to the United States in 1922. He served as an interpreter in the U.S. Army during World War II, and then moved to San Francisco, where he was assistant to the general manager of the Sheraton-Palace Hotel before joining the PCBC.

Brewer to head LMI

Robert E. Brewer has been promoted to executive vice president and chief operating officer of Larwin Mortgage Investors of Beverly Hills, Calif.

Brewer, who joined Larwin in 1970 as a vice president and senior loan officer, had previously been with Kassler & Co., the Denver mortgage bankers.

Larwin Mortgage Investors, a real estate investment trust, is affiliated with the Larwin Group Inc., homebuilders.



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NEWS/PEOPLE

Justin Herman dies; redeveloper gave a new look to San Francisco

M. Justin Herman, 62, who changed the face of San Francisco during his 12 years as executive director of the city's redevelopment agency, died of an apparent heart attack Aug. 30. He died in his apartment in the Golden Gateway project, first of the many redevelopment projects he brought to completion.



REDEVELOPER HERMAN
From slums, plazas and towers

The controversial director was both praised and damned for his single-minded dedication to redevelopment goals.

Mayor Joseph Alioto, mourning his sudden death, declared: "Without exaggeration, Justin Herman was the best public servant I have ever known, and probably the best in the country."

He was credited even by his detractors with being one of the most dynamic and effective urban renewal executives in the country. It is known that he declined an offer to become director of redevelopment in Philadelphia, and rumored that Mayor John Lindsay of New York had approached him.

His monuments. He was responsible for a list of redevelopment projects that have already made a pronounced change in the character and quality of the city and are still under way. The most striking is the downtown Gateway project, formerly the city's rundown produce district, now a distinguished complex of apartments and office buildings enlivened with plazas and parks, fountains and statuary.

Other projects that bear witness to his success are the Western Addition, with its Japanese culture and trade centers; Diamond Heights; low-income housing in Hunters Point; and—just getting started—the large Yerba Buena redevelopment area south of Market Street.

His critics. Herman had a personality abrasive to some. He was combative, and wouldn't temporize; he charged frontally. "It's all right to be the best liked kid on the block," he quipped, "but that's not the way to get the job done."

Ironically, although one of his major goals was economic and racial balance in a community, he was under running criticism for inadequate han-

dling of the relocation of residents of areas to be redeveloped. At the time of his death he was embroiled in poverty groups' lawsuits on relocation problems in Yerba Buena. The suits were brought, an associate said bitterly, "to save a bunch of rat infested hotels."

Herman's remark on this roadblock was characteristic: "A litigation attorney can do nothing in the social field. We can."

Career. He was hired for his job by Mayor George Christopher to get the city's then stagnating redevelopment program off dead center because, Christopher said, Herman was the slow-moving agency's greatest critic. As regional administrator from 1951 to 1959 of the Housing and Home Finance Agency, a predecessor to the Department of Housing and Urban Renewal, Herman had worked with urban redevelopment in San Francisco and on Eastbay city projects. He was a career civil servant and had served with the federal government in various capacities for 25 years.

A native of New Bedford, Mass., Herman was a graduate of the University of Rochester, the Harvard Graduate School of Business Administration, American University and the Department of Agriculture's graduate school.

—MARGARET DROSSEL
McGraw-Hill News,
San Francisco

HUD names news chief

James J. Judge has been appointed director of public affairs for the Department of Housing and Urban Development, succeeding George R. Creel.

Judge had been a consultant to Under Secretary Richard C. Van Dusen.



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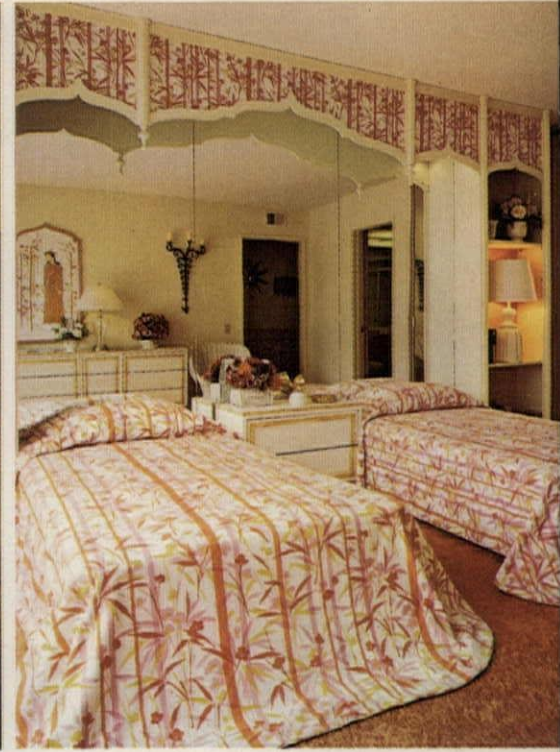
PPG glass presents 8 ways to bring



1 The indoor-outdoor A-frame. Glass walls of an A-frame fourplex unit wrap around an enclosed courtyard to provide indoor-outdoor living with complete privacy. Also note the use of clerestory windows to add drama, light and an airy feeling to the room's interior.



2 The front-door merchandiser. A two-story glass entry and a foyer with circular staircase can provide an exciting transition from outdoors to indoors. It's also a unique design detail that can be a successful front-door merchandiser.



3 The mirrored headboard. A mirrored wall, instead of an ordinary headboard, adds a touch of drama to this master bedroom. An idea like this is the perfect place for PPG *High-Fidelity*® mirrors. They give you the finest reflection.



6 The bigger window seat. The multiple window treatment in this living room provides the opportunity for a generous window seat, an oldtime detail experiencing a revival.

In large expanses of glass like this, PPG *Twindow*® insulating glass is a natural. It cuts heat loss through the glass by as much as 50%.

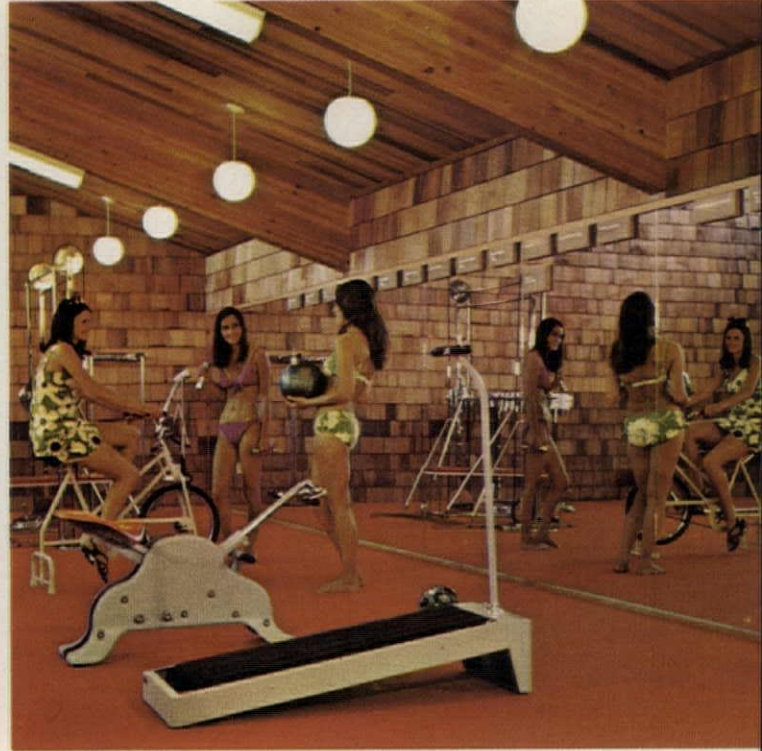


7 The prestigious front door. This two-story, glass-clad entrance provides a prestigious "front door" for an entire complex. It's also a good place to use PPG tinted glass or *Herculite K* safety glass.

outer space to high-density.



4 The atrium entrance. Interior entrances to apartments can be enhanced by an atrium-type court. And in a traffic area such as this, PPG *Herculite*[®] K safety glass is a "must."



5 The mirrored spa. An in-complex health spa is one of the most desirable amenities in high-density today. Mirrored walls can add to the visual impact, making the area look much larger than it actually is. And, of course, mirrors in an area like this can certainly be called a beauty aid.



8 The living room "pit." This is the living room conversation pit, a popular feature in many new high-density developments. An idea such as this is a good application for PPG *Twindow* insulating glass. It lets in the view, but not the weather.

KEY TO PHOTOS: 1: L'Atrium, Dallas, Texas. Developer-Owner: Devane Clarke. 2: Monticello in the Hills, Toledo, Ohio. Builder: Scholz Homes. 3: Coronado Cay, Coronado, Calif. Developer: Cedric Sanders Corp. & Signal Properties, Inc. 4, 7: Skyline Terrace Apartments, San Francisco, Calif. Builder: Pringle Construction Co. 5: Sixty-01, Seattle, Wash. Developer: W-O Associates. 6: Oak Brook, Chicago, Ill. Builder: Del E. Webb, Corp. 8: Deep Well Ranch, Palm Springs, Calif. Developers: William Bone Companies & ALODEX Corp.

Of course, these are just a few ideas on high-density from PPG. You can get hundreds more by sending the coupon for PPG's new 48-page, full-color brochure—"PPG Lifestyle/70s." See how PPG *Twindow* insulating glass, *High-Fidelity* mirrors, *Herculite K* tempered safety glass and PPG tinted glass can open up your plans—and open up the potential for sales, rentals and profits.

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An artful use of space where every square foot counts



Rooftop playground activities are easily supervised through wide windows in the apartment building's second-story laundry room. Brick column, which contains air vents for garage, was designed as part of play scenery.

Here's a solution to a tough problem for builders of big-city apartment projects.

The problem: how to provide a place for the kids to play when you're building on an expensive, tight site? The solution: use a roof.

This rooftop playground sits atop the three-level garage serving Columbus House, a 33-story Mitchell-Lama project in

New York City.

The middle-income building is typical of those in the inner cities. It's in a densely populated area, far enough away from established playgrounds so that young children would have to be escorted by parents.

The Columbus House play haven can be reached from the building's two-level lobby. And, children can be supervised from

apartment windows that overlook the playground, or from wide windows in the building's second-story laundry room.

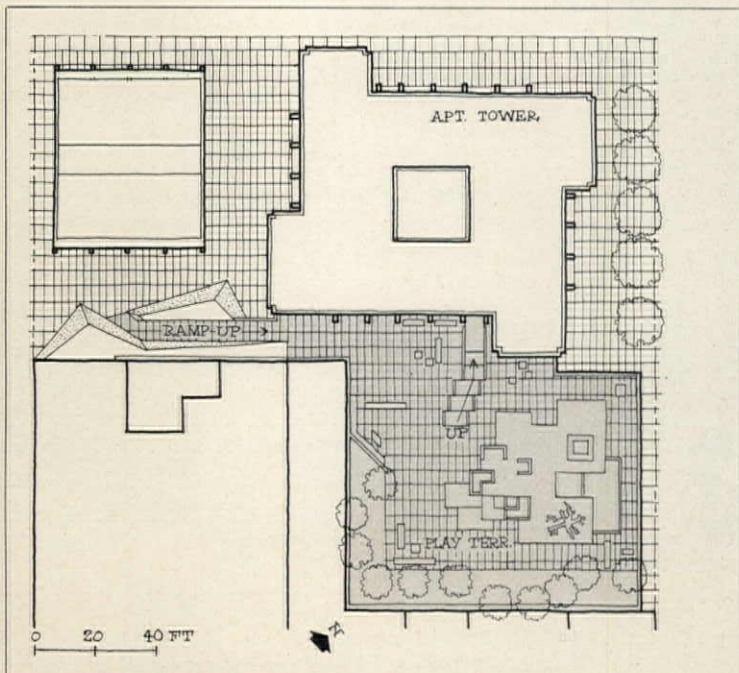
Frederick Ginsbern, senior partner in the architectural firm, Horace Ginsbern & Assoc., sees rooftops as one solution to the need for more recreational space within a city.

"Low structures covered with blacktop or concrete have long

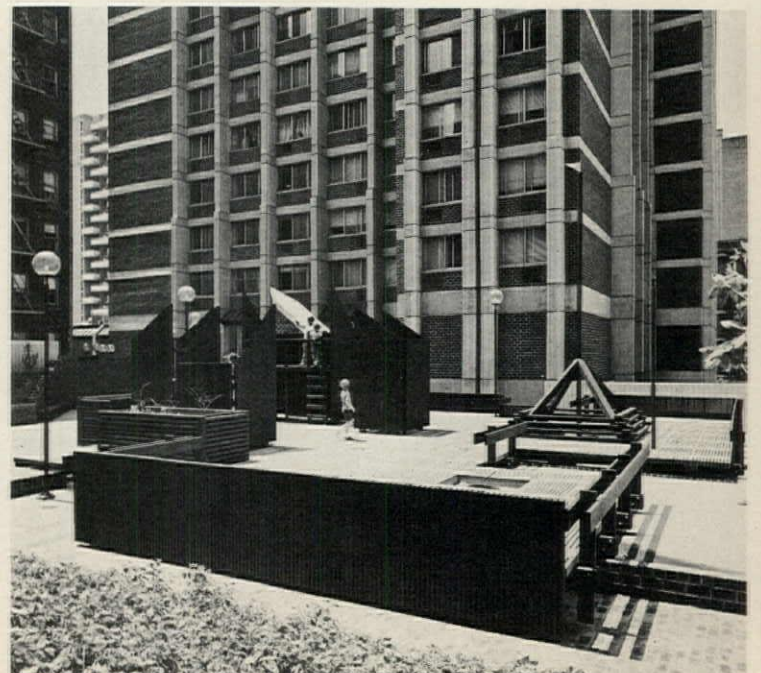
been considered useless and unattractive," he says.

"By using these roofs for play areas, we keep children away from streets and traffic, while letting them use their imaginations to invent games.

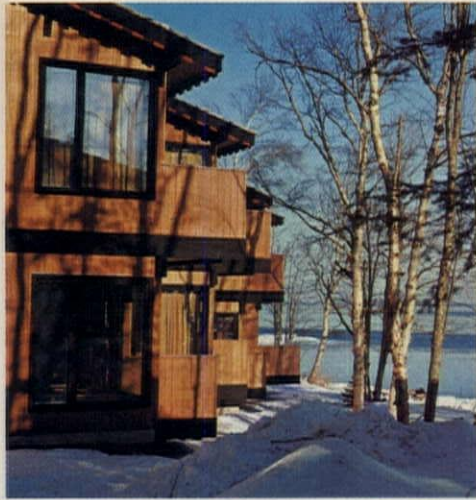
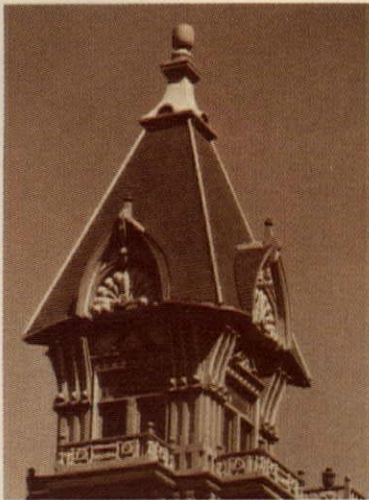
The playground, which was designed in cooperation with Bernard Albin & Assoc., cost \$20,000. Builder: Cord Meyer Development Co.



Site plan shows how garage-top playground (shaded area) is connected via a ramp to the two-level lobby in the 33-story apartment building.



Planked deck was built over most of garage roof (photo, above) and wooden play sculptures erected. Landscaping in foreground is part of roof's park section.



There's a lot of talk today about environment

Palco's been doing something about it for over 100 years

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Typical "neighborhood" is based on a village-square concept with apartments surrounding the landscaped play/recreation area. Twelve neighborhoods consist of two-

story townhouses joined in varying numbers. Neighborhoods are connected by a continuous pedestrian street.

An apartment community for married college students

Three goals were set by the University of Michigan when it built this 400-unit Ann Arbor complex: (1) rents had to be comparable with those in privately-owned projects in the area; (2) there had to be safe play areas where children could be supervised from each apartment; and (3) the design had to provide residents with a sense-of-community.

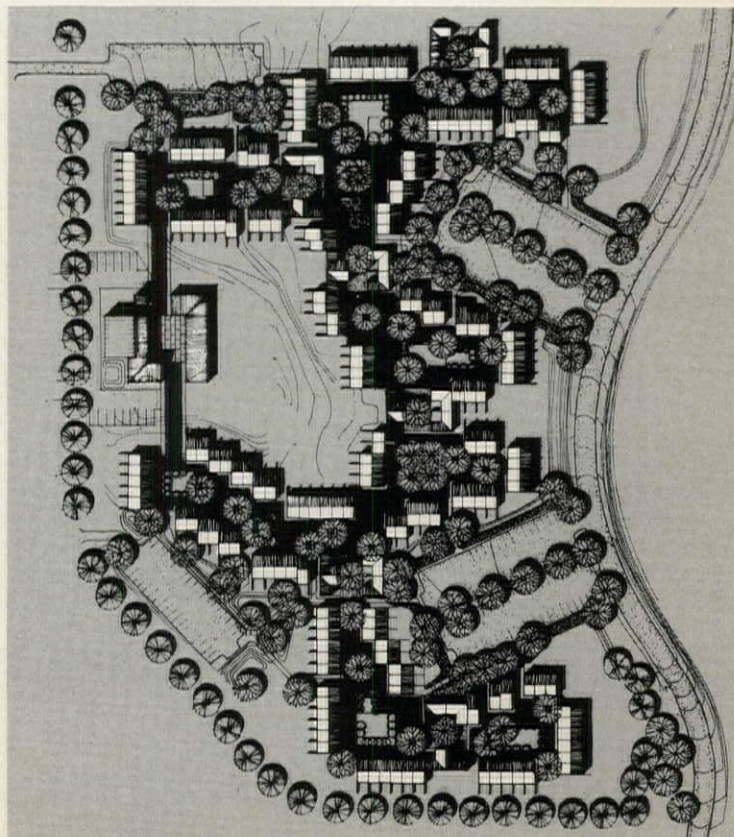
To help keep construction costs down, a rough grade of shiplap siding was nailed up vertically and stain-finished. Final costs were below what commercial developers had estimated: per unit cost, including landscaping and site work was \$11,000; per sq. ft. cost was \$10.80.

The other goals were realized by creating 12 "neighborhoods"

—actually a series of landscaped malls and play/adult recreation areas which are surrounded by the two-level apartment building. Cars are kept out on the perimeter of the project, and are isolated from the living and recreational areas by a planted mound of earth.

A wide walkway furnishes access between the neighborhoods and provides emergency and maintenance vehicles with easy accessibility to the apartment buildings.

The 38-acre complex contains one-, two-, and three-bedroom units in duplex and simplex arrangements. Rents are established yearly in relation to prices for all student housing in the area. Architect: Hullmuth, Obata & Kassabaum Inc. Builder: Nelson Construction Co.



Neighborhood relationships are illustrated in the partial site plan shown above. Dark area is walkway which connects the neighborhoods.

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**“Tenant standards:
You may have them
but are you sure
you’re using them?”**

Landlords generally have a pretty good idea of what separates good tenants from bad. But if your operational goal as a landlord is just “keep ‘em rented,” chances are you’re not losing too much sleep over whom you’re renting to.

Some apartment developers predetermine the type of tenants they rent to by catering to special interests, e.g., single swingers, senior citizens, rich people, poor people, waterfront people, golf buffs, or families with children.

We don’t develop apartments for special markets because we think they hold too much long-term risk. Special-interest apartments impose limits on potential renters, and specialized market segments have a way of disappearing.

But regardless of what market you design for, policies that predetermine tenant type do not predetermine tenant quality. Tenant quality is controlled by two other factors: rental rates and screening procedures.

The best opportunity you ever have to set a level of tenant quality in an apartment project is right at the beginning: during the initial rentup period.

Some compromises in tenant standards are inevitable during initial rentup because of pressure on the rental staff to meet volume quotas and to beat cash-bonus deadlines. The practical developer’s approach to initial rentup is in fact “fill ‘em up, then clean ‘em out.”

If you lower your standards far enough, you can fill up a new project as fast as you want. But the problems you build in with that approach will haunt the project for a long time to come. A large percentage of unstable tenants may not bother the developer aiming for a quick sale. But to the people responsible for a project’s long-term payoff, bad tenants can turn the best design and the smartest planning into a non-profit exercise.

Experience counts. The best way to avoid serious compromises in tenant standards during initial rentup is to let your experienced resident managers oversee rentals from the day a project opens. Agents who are motivated primarily by bonuses and commissions can’t help a tendency to overlook shortcomings in their prospects’ qualifications. But resident managers with years of experience in tenant handling will think twice about accepting a marginal prospect—particularly if they will have the responsibility for managing him as a tenant.

While the best screening tool is a veteran manager’s discretion, there are other good backup aids. One is a thorough rental application. We have an application that takes about 15 minutes to fill out. It is so formidable looking that it actually deters some prospects from renting. That’s fine with us, because any prospect who can’t get past the application is someone we’re not anxious to have as a tenant. Of course, the real purpose of an exhaustive application is not to scare off marginal types, but to make sure you know whom you’re renting to. We not only insist in references that can be checked, we really check them.

Another screening aid is the amount of security deposit you make tenants pay. It’s true that high deposits will turn away some prospects. But if a prospective tenant can’t afford to come up with the deposit you’re asking for, it’s very possible that he won’t be able to come up with his rent money two or three months after he moves in.

Sometimes, developers rely on outside rental sources to supply prospects, e.g., the many computerized tenant-finder services that are spinging up these days. Their big shortcomings, we have found, is their failure to recognize tenant quality.

Most of the ones we’ve sampled furnish prospective renters about which nothing is known except that they want an apartment with full amenities within a limited rental range. The prospect’s ability to pay and general stability is not predetermined. So what the electronic finder services offer is unscreened raw bodies.

A carefully worded newspaper ad actually provides more effective pre-screening than the typical finder-service checklist. The finder services do have potential, but until they add quality standards to their programs, the prospects they provide aren’t really worth paying for.

Maintaining standards. A level of tenant quality, once established, won’t necessarily perpetuate itself. In fact, you can erode it inadvertently in several ways.

One way is by lowering rent scales either through rate reductions or rent concessions. Most apartment complexes are designed for specific economic levels, just as some are designed for particular age groups and life styles. The economic level of a group of tenants is established by the rental rates they pay. If you make substantial rent cuts or give concessions, you bring in tenants at lower economic levels, and this can

have significant effects on the overall quality of your tenants.

Even the slightest rent reduction can have an effect—if only in the minds of other tenants. When we tried to speed re-renting of some badly located apartments by cutting rents \$10, a group of long-term tenants objected strenuously. They protested that lowering the rent scale for those particular units would bring in tenants on a lower economic scale. They insisted that we raise the rents back up to the general standard to maintain the existing tenant quality.

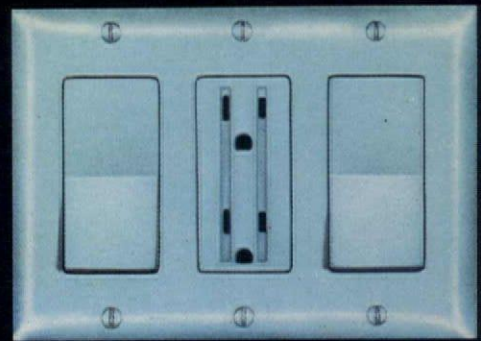
On the surface, a rent reduction may seem like the quickest way to the heart of serious vacancy losses. But over a period of time, it may lead to still bigger losses. Chopping rental rates or security deposits will draw more prospects by placing your apartments within the means of more renters. But the easier you make your apartments to rent, the greater becomes your percentage of deadbeats and people with marginal earning power. So the results of a rent cut may well be higher maintenance costs, added management problems and increased legal fees for eviction proceedings.

Slow rental periods. Except in the most dire economic slumps, we meet competitors’ rent reductions with increased maintenance efforts. When competing complexes shrink their income by reducing rents, we know their maintenance programs have to suffer. And the kind of tenant we’re looking for is not going to be happy with second-rate upkeep. Instead of making it possible for people further down the economic scale to rent in our complexes, we make our product more attractive to the kind of tenants we originally designed them for and increase our promotional efforts to bring them to us.

Probably the worst threat to tenant quality is rent control. When a government board imposes below-market rates on an apartment complex, the landlord is forced to rent to tenants at an economic level lower than his project originally was designed for.

And when tenant quality is lowered, the quality of the complex is lowered with it. Because rent control laws permit legislative boards to literally set quality standards for apartment projects, developers understandably shun markets where such laws are in force.

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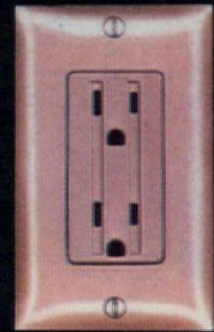
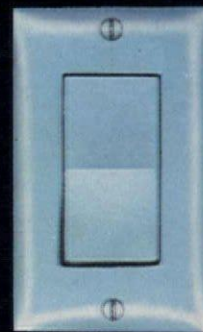
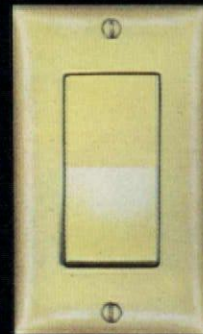
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**“Where is the ‘there’ there?
We have to get away
from stereotyped planning
if we’re to find the answer”**

Gertrude Stein, the perceptive author, speaking of the suburbs of the San Francisco East Bay, once said: “There is no there there.” What she meant was that you could not identify with any particular neighborhood, or that essentially all the neighborhoods looked the same.

Builders are constantly struggling with this problem and are always looking for a so-called theme for their development—one that will make it “different.” Usually the theme is simply the application of Georgian or Old English exteriors.

Why do we need a “there there” anyway? To get the answer, let’s take a look at the way in which much of the current home-buying public grew up. For a great many it was in a rather rural “hometown” atmosphere. Their own small neighborhood within this hometown took on a unique quality for them. And with this came a feeling of identity and belonging.

Many of the small- and medium-sized towns in America have vastly different and unique areas within them. Some have tree-lined streets; some have large houses, some, small; some have narrow streets, some, wide avenues; some even have townhouses and many have apartments, small colleges, etc. Most of the homes are quite dissimilar from each other, and carry with them a different *feeling* from block to block.

What is the essential appeal in identifying with your own block or neighborhood? Very little research has been done on this subject, but it seems somehow that people *need* to have a feeling of belonging. Or put another way, they need a “place” to call their own outside the immediate atmosphere of the home itself.

To the extent that this “sense of place” is weakened by sameness, dullness or just plain lack of aesthetic feeling and atmosphere, people’s identification and strength of feeling for their homes will diminish too.

Of course, there are some inherent differences in neighborhoods—geographic and topographic, for example—that remain constant. But with the advent of large volume home production, a sameness from neighborhood-to-neighborhood has occurred, leaving only the cosmetic treatment of the house exterior for a sense of identity. Add to this sameness stereotyped codes, ordinances and engineering standards, and we have the subdivisions of today.

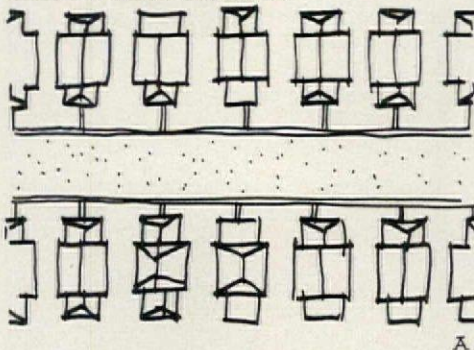
More serious, though, is the trend toward a more *completely* standardized

product at higher densities, making variety and identity even more difficult to achieve. The prototype fourplex, zero lot line house, or the townhouse (developed from the need to serve a vast low-priced market) bring with them a danger far worse than the “no there there” neighborhood Gertrude Stein talked about.

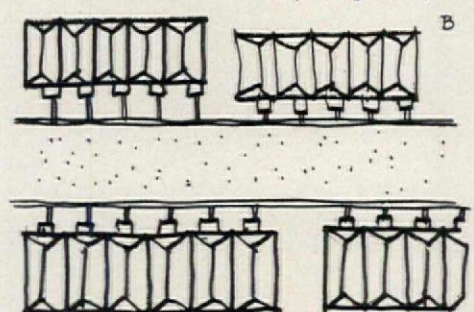
How can we work with the realities of production and economics and yet produce a uniqueness in our new neighborhoods?

The solution should be found in the basic planning—not in a superficial “theme” or cosmetic treatment of the exterior of a residence. Let’s look at some current medium-density, medium-priced housing developments and see if *their* planning approaches meet people’s needs for identity, quality and variety.

First, what is the difference between one of the most popular fourplexes and the normal suburban single-family detached houses? (Figure A)



Sameness of setback treatment, building form, etc. leave little variation from block to block. Townhouse siting can produce the same monotony. (Figure B)

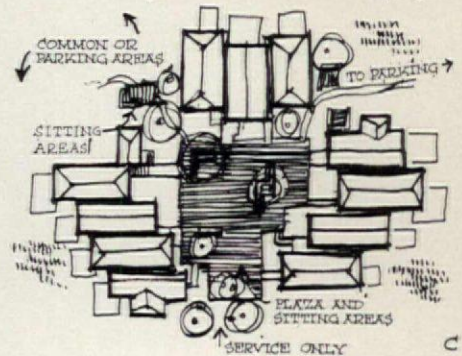


What then makes a neighborhood unique, what gives it a sense of place people can identify with?

First, the difference must be *felt* by the resident himself and he must feel *this place* is truly his. Thus, he must be allowed to feel possessive about it and be proud of it. It must become *his* lane, *his* street,

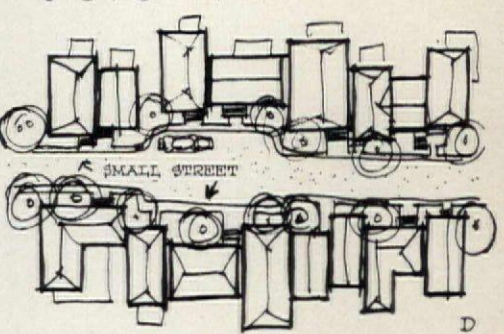
his block, *his* neighborhood.

That difference must be created in the basic planning. For example, if a few houses are sited around a small urban-like square that provides for roaming or sitting, it becomes *part* of the resident. (Figure C)



This scheme builds in a sense of belonging, security and neighborliness without negating the individuality of separate homes. With uniqueness and individuality already built into the land plan, elevation treatment may or may not be vastly different between houses.

Much can be learned from certain older communities whose houses have been sited on small residential streets to gain this same quality of neighborliness or sense of place. One street takes on a vastly different character from another. Houses vary in size, setback, width and landscaping. (Figure D)



How can this be accomplished in our new communities? The first step is to be aware of a person’s basic desire to belong and feel possessive. Then the planner and the developer must constantly ask themselves this question: Can people feel a part of the proposed neighborhood and would they be possessive about it, pleased and proud to be living there? If you can answer “yes” about your next neighborhood, you have created a project that satisfies a fundamental personal need.

Bare walls will never move Billy Johnson's parents.

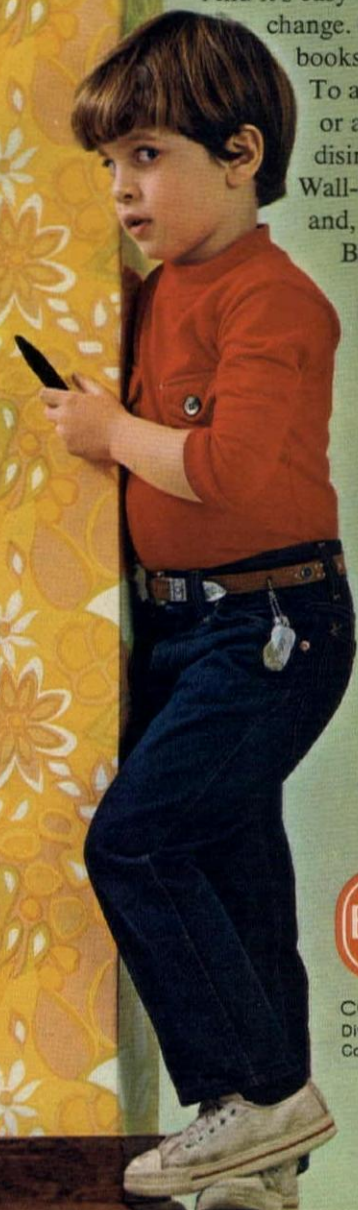
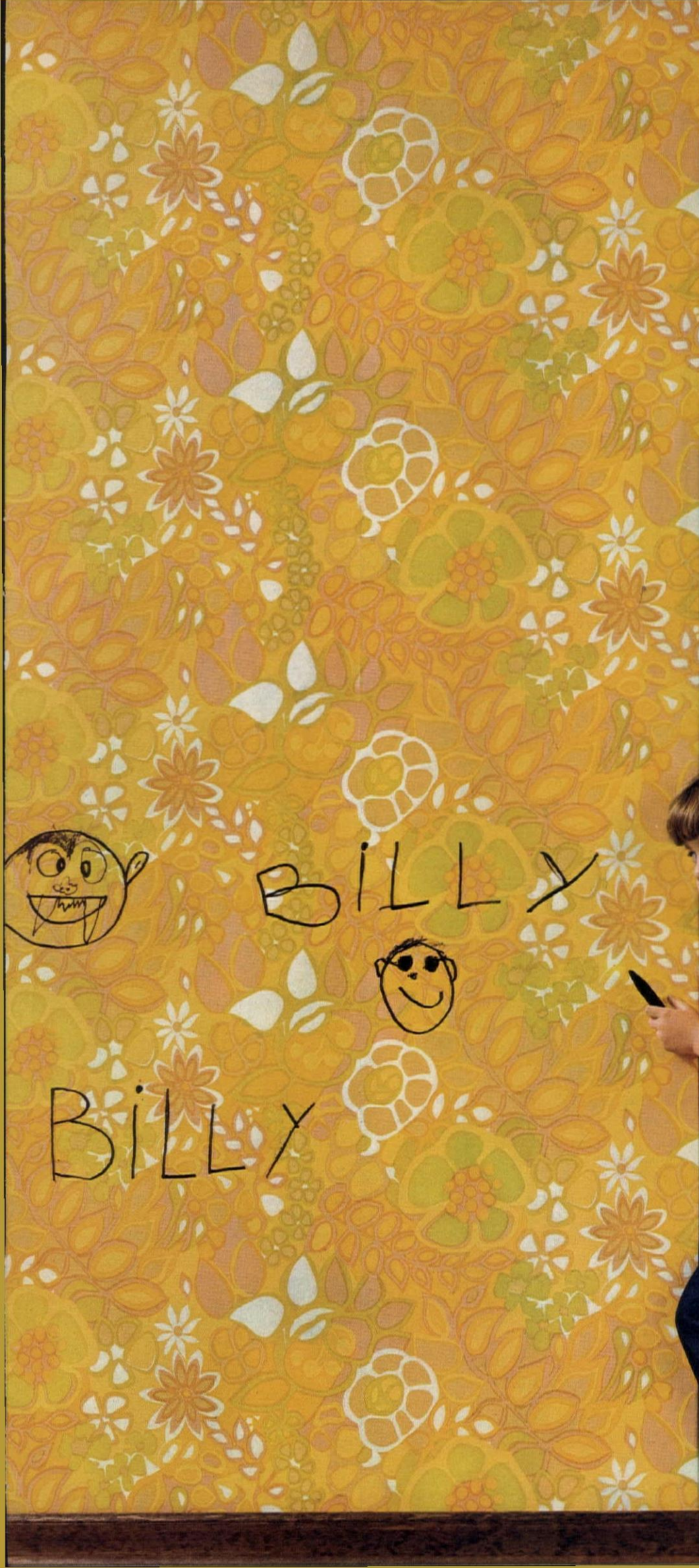
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"The most inviting model home interiors aren't worth a bag of nails if they're not ready on time"

Unfortunately, too many decorators have dropped the ball and missed installation deadlines. The result: mild chaos which detracts from the overall impact of a grand opening. When your ads and publicity break, your model complex should gleam.

We all know the psychological letdown of walking into half completed units. But if you, the builder, set realistic schedules and keep tabs on your decorator's progress, there's no reason for this to happen.

Decorating a model home entails four basic steps: brainstorming, designing, ordering and installing. It sounds simple enough but it isn't. Each step entails a world of work, planning and worry. But whether you retain a professional designer or do it yourself, the following tips should be helpful in getting the job done.

If you use a professional, select her (or him) at least 3½ months before your opening. (Personally, I like 90 days to complete a project—from imagination to installation.) Do a little homework first: check model complexes she has completed. Don't just rely on reputation. You either like a decorator's work and feel comfortable with her taste, or you don't.

Next, check with other builders to make sure the decorator you're considering meets deadlines. Artistic genius is great but if she can't deliver, pass her by. You've got a lot riding on the outcome—advertising, brochures and publicity keyed to a pre-established date—you simply can't afford to be disappointed.

Phase I: Brainstorming. Once you've decided on your decorator, study the plans together and decide on a realistic budget. Give her as much input as possible so she can get an overall view of your plans, demographics, and marketing objectives. An experienced decorator will do additional sleuthing on her own by visiting competitive developments and talking with salesmen and people visiting the models.

It may be stating the obvious, but at this point be sure your budget is tailored to the demographics of the market. Identify your prospect and merchandise directly to his tastes and desired lifestyle.

During the brainstorming session, have your marketing director take an active role; he is often your liaison with your decorator. This is the time to make your own suggestions and feelings known. But on the other hand, don't stifle the de-

signer. She has her own ideas on what works. Or she should have.

Phase II: Designing. Here's where the decorator and her crew go to work. During this period, which should take about two weeks, the basic, but critical decisions are made. Color schemes, interior themes and general styles are established. The designer will recommend where and when special lighting should be used and where built-ins would be effective and practical.

When the basic design elements are set, you, the builder, should see them. If the budget and time allow, have your decorator make a presentation of her "color boards," furniture layouts and color sketch.

Color boards depict a floor plan with every room identified. Also included will be fabric swatches plus the color scheme for each room. Other materials such as paneling, flooring and wall coverings should be represented by samples.

During the presentation, your decorator probably will have pictures of the type of furniture she plans to use. The objective is to give you the clearest possible picture of how your models will look. This eliminates surprises at the job site.

You or your marketing director should sit in on the presentation, and should know exactly what the decorator is going to do and when she'll be doing it. If any aspect of the interiors is impractical from a construction standpoint, speak up.

Phase III: Ordering. First rule for the builder: resist the temptation to use furniture from an old model. Beds, sofas or chairs that have been bounced on have lost most of their verve and freshness. Besides, the decorator has her own preferences and sources.

The decorator should order 10 weeks ahead to provide some leeway for any possible delay at the manufacturer's end.

Poor ordering practices by your decorator can actually destroy the job—ordering is that crucial. In most cases, standard furniture should be used. Today, most manufacturers and suppliers offer a variety of colors, fabrics, wood and special finishes. Use local suppliers wherever possible. It's usually less expensive and easier to keep track of progress and avert any possible foulups. Don't forget to order bedspreads, pillows, occasional pieces, curtains, even potted plants at this time.

All ordering should be completed by the third week leaving a nine-week countdown

to installation. Suppliers will have specified firm delivery dates.

Now, specification sheets should be prepared for the job site superintendent or project manager. These sheets show where he must allow for special effects like built-ins (bookcases, etc.) or where a wall is to be papered or painted (note the color, of course), where the carpeting or hard surface flooring goes. Again, include the supplier's name and all details.

At this point the decorator should begin visiting the project at regular intervals. When the dry wall is in, it's time to verify that the original plans have been followed. I have seen windows moved across a room, without the decorator discovering it (because she is not notified of changes) until it's too late.

Decorator features begin being installed when basic construction has about four weeks to go. A safe installation schedule for these items is as follows: first, hard surfaces—floors, tiling, ceramic areas; next, wallpaper and special paint jobs; then, carpets, built-ins and draperies.

While this work goes on, the furniture has been arriving piece-meal. The decorator's receiver should be uncrating each item and checking it for damage. The receiver should have a detailed list of what's coming so you or your decorator can be alerted if a piece comes in damaged or arrives intact but in the wrong color or fabric. If you're lucky, the receiver can repair any damage.

Phase IV: Installation. At last delivery date has arrived. I call it "D Day." Hopefully, all furniture has arrived, and hopefully all workmen are gone. The furniture is delivered to the model site. Each piece should be coded by house, but the decorator should be there to tell the movers where to place big items. After the furniture is in place, fill bookcases, put out accessories, and lastly, hang the pictures. Decorating of four models should take no more than three days down to the last detail.

Now, the decorator should make an inventory, including the price, of each piece. You, the builder, may have to replace it or perhaps you may want to sell it later.

Then walk through each model with your decorator. Hopefully, there will be no changes. Ask the decorator how to maintain the models and keep them fresh looking. And that's a subject for a future article.

CORIAN® VANITY TOP AND BOWL in luxurious, one-piece sculptured design available in sizes and colors to fit virtually any installation.



CORIAN.®

Elegance—the easy way.

What's so easy about a beauty like CORIAN*? The way it installs. And the way that beauty lasts.

CORIAN lasts because it's exceptionally tough—resists stains, scratches and impact damage. It's not a laminate, so its deep, warm opalescence goes all the way through the material. Solid luxury.

Solid convenience, too. It's easy to keep clean. And a snap to install. It can be sawed, drilled, shaped and polished with ordinary tools. CORIAN. Elegantly easy in three colors. For more information, write: Du Pont Company, Room 22371-B, Wilmington, Delaware 19898.

*Du Pont registered trademark for its line of methacrylate building products.



BUILDING PRODUCTS



CORIAN® BATHTUB WALL KIT consists of five pre-cut panels ready for installation.

House & Home

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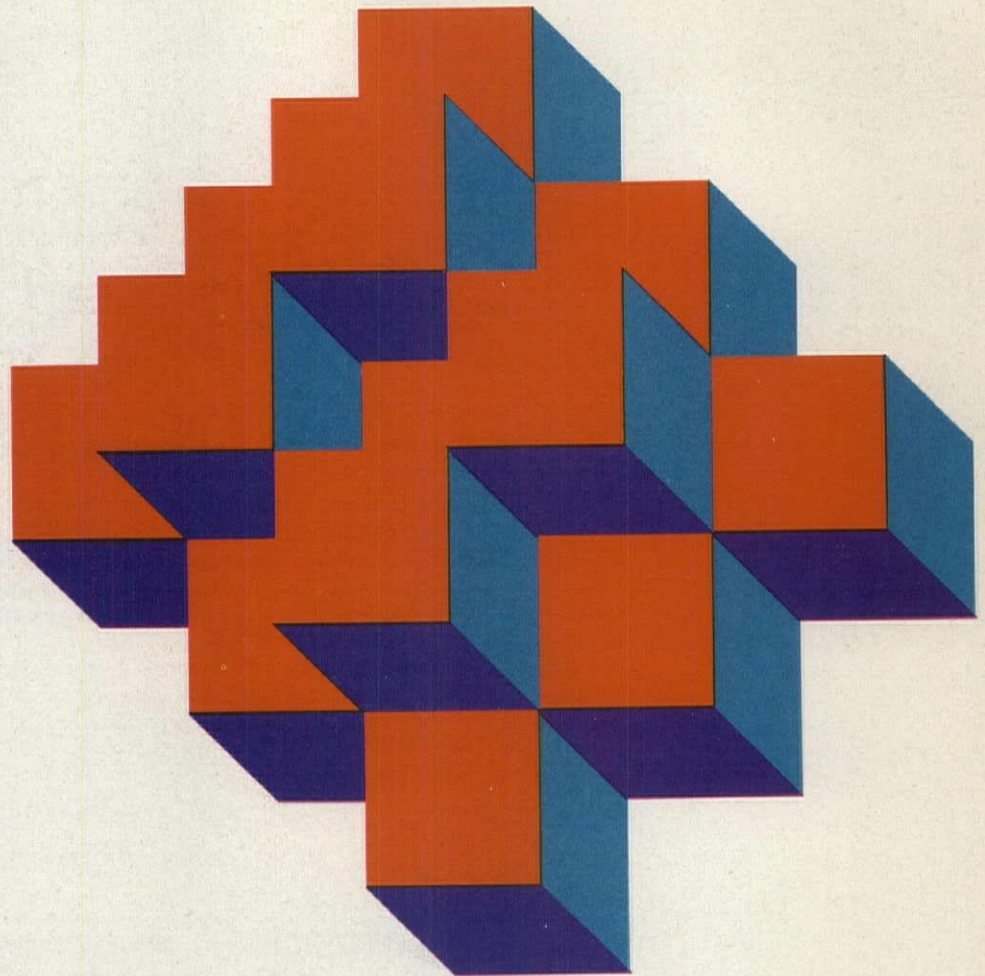
Pandemonium—the only word to describe what happened the week after House & Home published a 14-page study on "Who's building the modulars and how many?"

We were literally swamped with urgent telephone calls, special delivery letters and personal visits from readers asking for extra copies of the June issue, additional reprints of the modular story, and more detailed information about the leading modular producers.

To meet this strong demand, the editors of House & Home have now put it all together in a handy, pocket-size, four-color **DIRECTORY OF MODULAR HOUSING PRODUCERS**.

With additional firms added right up to press time, House & Home's 1971 Directory packages the modular marketplace for suppliers, producers, and the wide spectrum of builders, realtors, developers, dealers, distributors, government and financial people who want to do business with each other.

The 1971 **DIRECTORY OF MODULAR HOUSING PRODUCERS**



includes the following data on virtually every company active in modular housing production:

Modular Manufacturers: Company Name/Address, Names of Principals, Parent Company Affiliation.

1970 Modular Production: Single-Family Units, Multi-Family Units

Factory Data: Number of Plants, Location of Plants, Total Plant Capacity.

Marketing Methods: Use for Own Projects, Sale to Builders/Developers.

With advance orders already coming in by the hundreds, copies of the 1971 **DIRECTORY OF MODULAR HOUSING PRODUCERS** will be available on a first-come, first-served basis at a cost of \$2.00 each. To order copies, print your name and address clearly on the coupon below and enclose check payable to House & Home.

**Mail Coupon With Remittance
to House & Home,
Modular Directory,
330 West 42 Street,
New York, N.Y. 10036**

yes! Send ___ copies of the 1971 **DIRECTORY OF MODULAR HOUSING PRODUCERS** for \$2.00 each. Enclosed is check for \$ ____

Your name _____

Firm name _____

Mailing address _____

City _____

State _____

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You don't borrow interim money. You rent it. And where you rent it can make a big difference in what you get for what you pay.



Your men at FMI (left to right):
T. W. Owens, Senior V.P.
W. F. Trace, Senior V.P.
W. H. Leach, Senior V.P., Investments and
Director of all field activities.

At First Mortgage Investors, you can (providing, of course, you qualify) get virtually any size land-acquisition, development and/or construction loan you might need.

You get the full use of every penny you pay interest on because, with FMI, there are no balance requirements, hidden fees or extras.

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You get the services of the first

nationalwide field service force in the mortgage investment trust field, to get you around trouble before closing and over any problems afterwards.

And your closing problems and costs are kept to a bare minimum, so you know exactly what you're getting, and when you'll get it, before closing.

Write or call First Mortgage Investors, 801 Forty-first St., Miami Beach, Fla. 33140. Ph: 305/532-7361.

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Or contact one of our Regional Offices:

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Region, 800 Douglas Entrance, 2nd Floor,
Coral Gables, Fla. 33134 Phone: 305/445-9665



“There is nothing commonplace about Cheyenne Mountain Ranch. From the stunning natural setting to the KitchenAid dishwashers.”

Donald R. Davidson is Vice President of Construction for Gates Land Company. He's been in the business for 25 years. Right now, he's building The Broadmoor Townhouses at Cheyenne Mountain Ranch, Colorado Springs. And equipping every one of them with a new KitchenAid Superba dishwasher.

“There's a saying out here,” explains Mr. Davidson, “‘At Cheyenne Mountain, the commonplace seldom bothers to happen.’ That's the way we felt when we began developing this area. It's some of the finest, most thrilling country in the

world. And we intend to keep it that way.

“Everything about this development is quality. Including the appliances. I've had excellent experience with KitchenAid in the past. Callbacks have been virtually nonexistent.

“When building and selling quality homes, it is essential that only products known for their quality be used.”

Ask your KitchenAid distributor about his builder plan. Or write KitchenAid Dishwashers, Dept. 1DS-10, The Hobart Manufacturing Company, Troy, Ohio 45373.

Plywood in the industrialized housing revolution.



14
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Plywood on an assembly line keeps tooling up costs down.

Plywood is made to order for assembly line operations. No need for the costly equipment you'd have to install for metal or concrete. No need for your labor force to learn new skills.

Here are just a few recent examples of practical plywood systems that make sense for the new kind of building. Take a look:

APA® Glued Floor System: The no-squeak system that began in the home, then spread to multifamily and commercial buildings, is just as applicable for in-plant operations. A single layer of tongue and groove plywood is simply glue-nailed to wood joists. Result: The entire floor is much stiffer as proven by APA tests (see photo 2).

St. Regis, for one, is glue-nailing plywood floors and plywood single wall components on the assembly line in its Tacoma plant (photo 1).



"The system is easy to work with. The floor is stiff and squeak-free. And the plywood floor and siding provide the structural integrity for trucking the modules over the road," says Irv Batchelor, St. Regis.

Plywood and Steel: Housing Research, Inc., has completed 20 steel and plywood modules (six apartments, some stacked three-high) in Michigan City, Indiana. The system, designed by Ronald Goodfellow, AIA, uses plywood underlayment (photo 3) and plywood roof sheathing — both fastened to steel supports with special self-drilling, self-tapping screws.

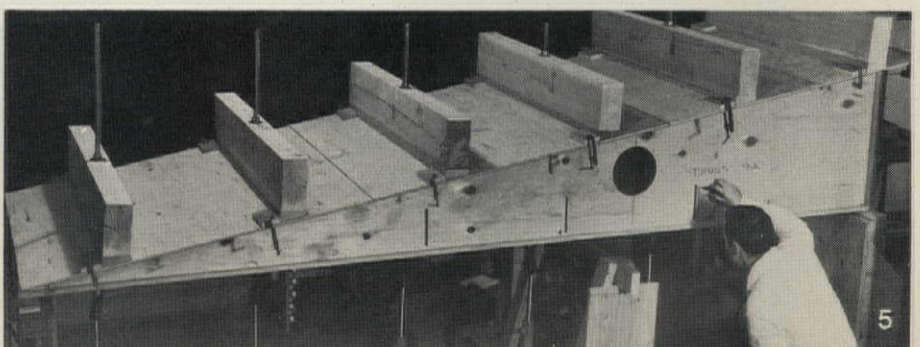
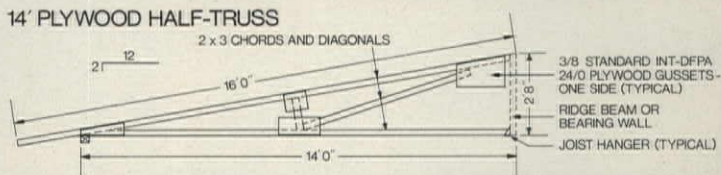
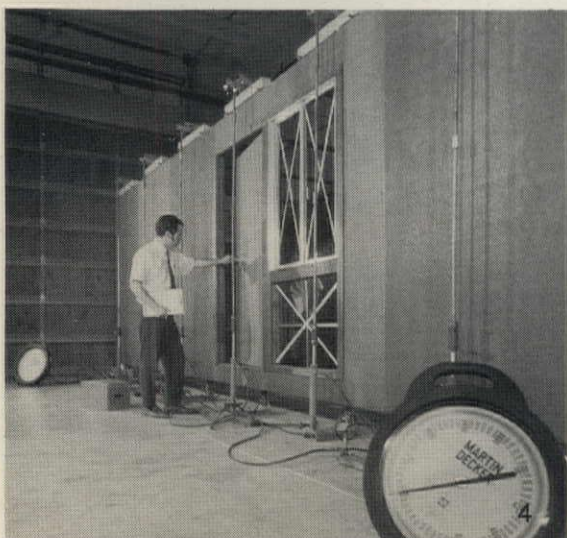
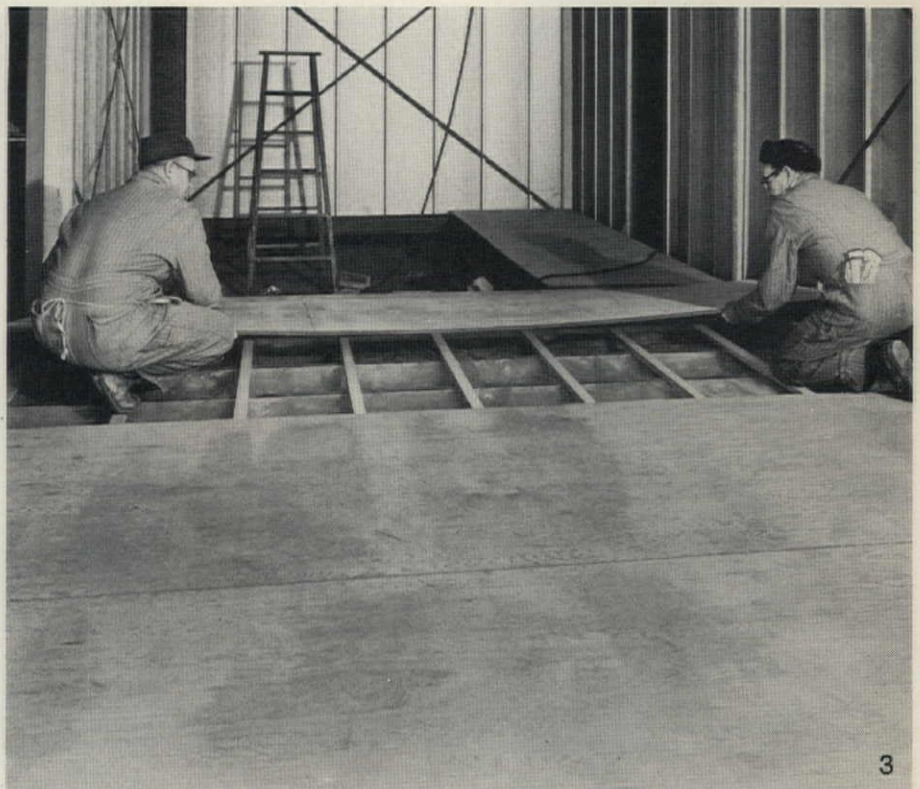
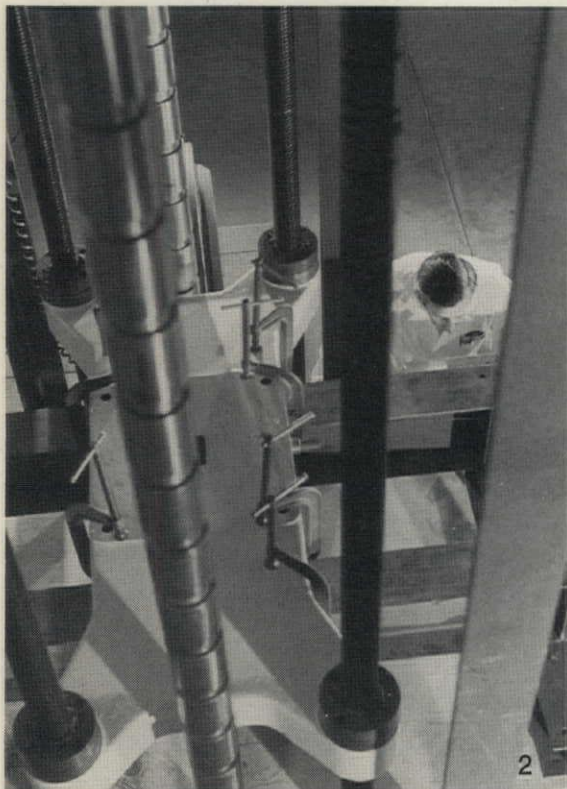
First a 1/4-in. intumescent coating material is applied to the supports, for fire-retardant purposes. Then 1x3 furring strips are laid as ribs. And plywood goes on top. Extra-long screws hold it all together.

APA® Girder Wall System: The plywood girder wall is

designed for greater strength, in transit and erection. A test wall (photo 4) carried 2.4 times the design load of the total module without any distress of surface material. You'll find a case history later in this ad on a plywood girder wall system that's taking the beating of wind and weather in University of Alaska student housing.

APA® Sectionalized Roof Trusses: This 14-ft. sectional home half-truss (see diagram and photo 5) saves money and materials, compared to trusses fabricated with 2x3's or 2x4's. Half-trusses join at the center to form a pitched roof on the sectional home. Easily fabricated, they're three times as stiff as minimum FHA and model code requirements. Northwest Homes, Inc., used the system for its Westways development, Federal Way, Wash. (photo 6).

For more information on APA industrialized housing systems, turn the page.



**Plywood is
transportable.
Strong. Rack-proof.
Mile after mile.**

The Spokane, Washington, to Alaska haul is probably the toughest transportation test a factory-produced housing module will ever get. Right?

Gene Zanck, Pre Built Structures, Inc., Spokane, knows. For three years, he's shipped factory-built apartment, motel and hotel units to Alaska by truck-trailer, rail, ship, hydrotrain and barge. Even by jet because there are only two ships to Nome a year (photo 8).

Every one he's produced for Alaska has been a plywood module. Because, as Zanck puts it, "Plywood can take it like no other material. And speed is of the essence.

"My clients must be able to order and occupy the units in the same short Alaskan building season. Otherwise,



they lose a whole year of income on their investment.”

Zanck's latest project: a 50-unit hotel for Mt. McKinley National Park Company. The basic module is 12-ft. wide by any length. It has glue-nailed plywood floors, plywood sheathing and Texture 1-11® siding. Standard grade plywood used to protect doors and windows in transport is applied as roof sheathing at the site. Completed units include carpeting, plumbing, wiring, steel stairways and wrought iron railings.

The Mt. McKinley modules (22-ft. clear span, 8,000-pound units) traveled a total of 2,335 miles by train and barge. They were handled six times in transit (photo 7) — without so much as a cracked window.

Once at the site, plywood provides a tight, wind and weather-proof unit — important where minus 30-degree temperatures are common.

Units were ordered in March, occupied, July 1.

Future plans for Zanck: Six 12-plexes for Valdez immediately. More than 200 living units for Valdez in the next two years.

Modular Designed Homes, Inc., Seattle, ships single-family modular homes to Alaska by barge regularly (see photo 9). The Seattle firm specifies plywood for basically the same reason: incomparable strength in transport.

There is more; turn the page.



**The final test:
Looks.
Plywood is natural.
Warm.
Low maintenance.**

Here's proof that modular housing can have character. Looks. Individuality. And the strength and stamina to take it, even in Alaska.

It's a 32-unit student housing complex at the University of Alaska, Fairbanks (photo 10).

Plywood girder walls with rough sawn Texture 1-11 siding strengthen the 40x10-ft. units, and provide durability at the site. The no-squeak, glue-nailed plywood underlayment is covered by carpet or tile. The flat roof is covered by Neoprene Hypalon roofing.

All units have a polyethylene vapor barrier to avoid frost damage in the cold Alaskan climate.

Architect: Philleo Engineering and Architectural Service, Fairbanks. General contractor is Ghemm Company, Fairbanks. The modules were manufactured in Portland, Oregon, by Niedermeyer-Martin Co.



Tilt-up on the dunes: This is one of two almost identical houses at White Lake, Michigan (photo 11, diagram).

Only one difference: The other was stick-built at the site, while this one was manufactured 1,000 miles away. The modular home was trucked to Michigan from Guerdon Industries' Magnolia plant in South Hill, Virginia.

It's no surprise the developers — Hercoform Marketing, Inc., Bethesda, Maryland, and Instant Modular Construction, West Dover, Vermont — have elected to go the modular route for the additional 80 units.

"It's faster. Costs less in high volume production and gives us site flexibility," says Gerald Derks of Instant Modular Construction.

"Since the boxes weighed between 5 and 11 tons and had to be crane-lifted and set into place, we needed an exterior skin that would give us both a finished wall

material and the necessary structural capacities," said architect Tiffany Armstrong, AIA, Richmond. Rough sawn plywood was the answer.

"Unboxlike" modular homes: St. Regis manufactures architect-designed single-family homes on its componentized assembly line in Tacoma.

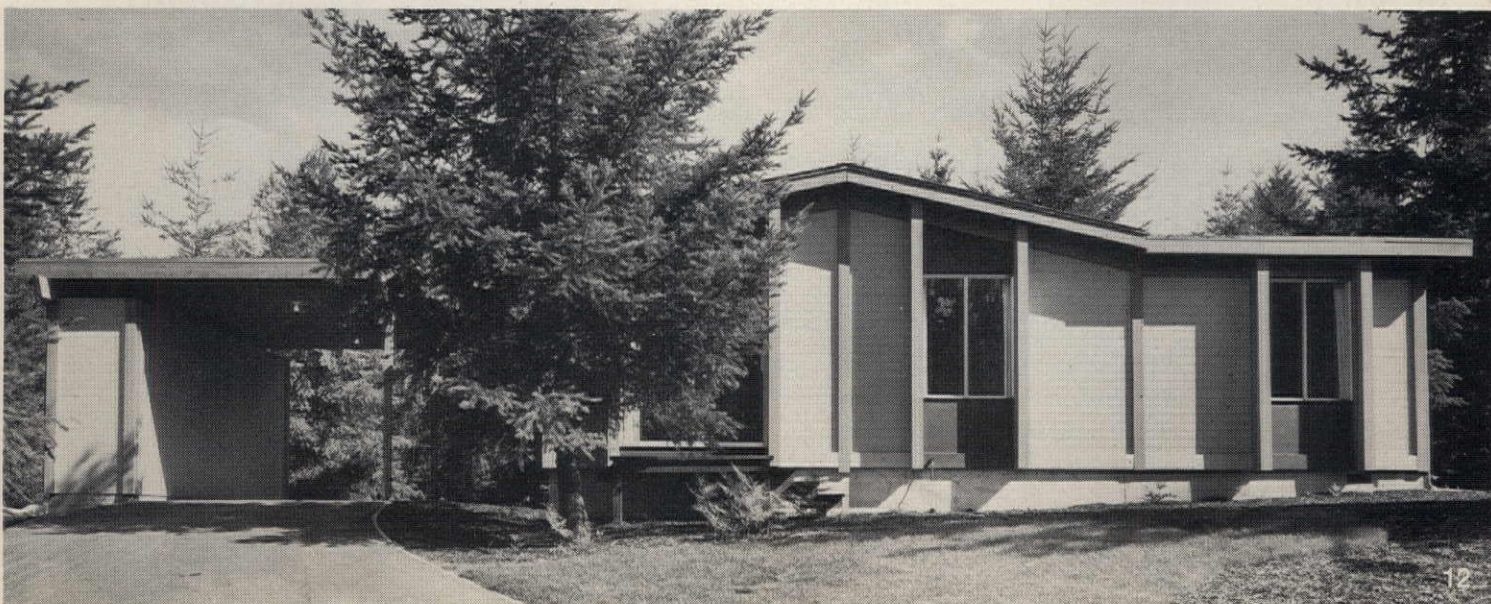
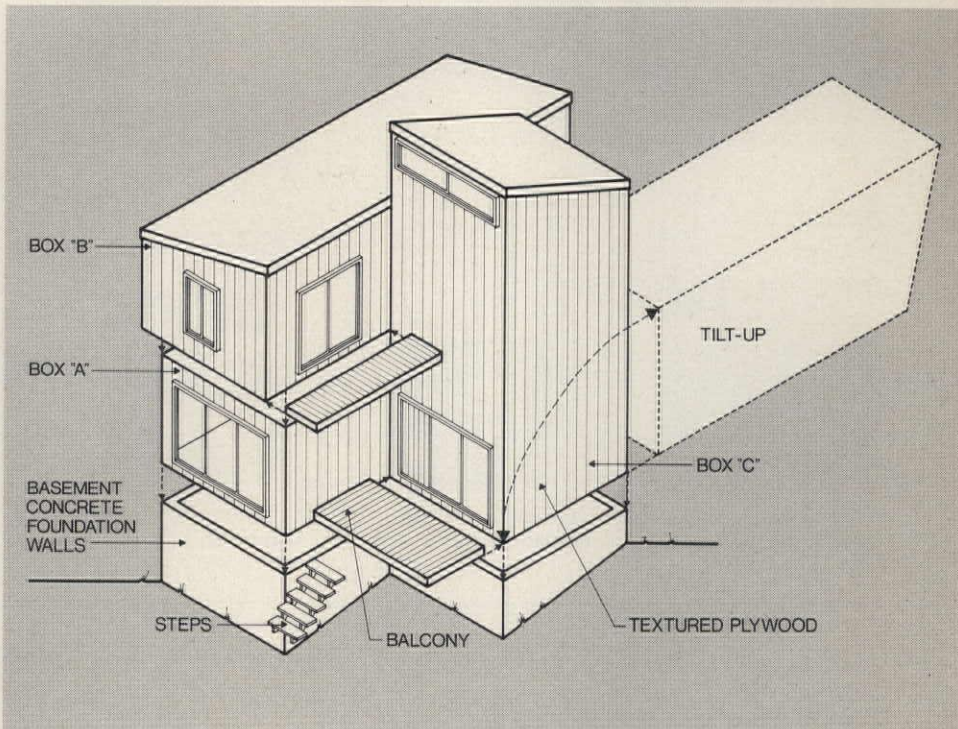
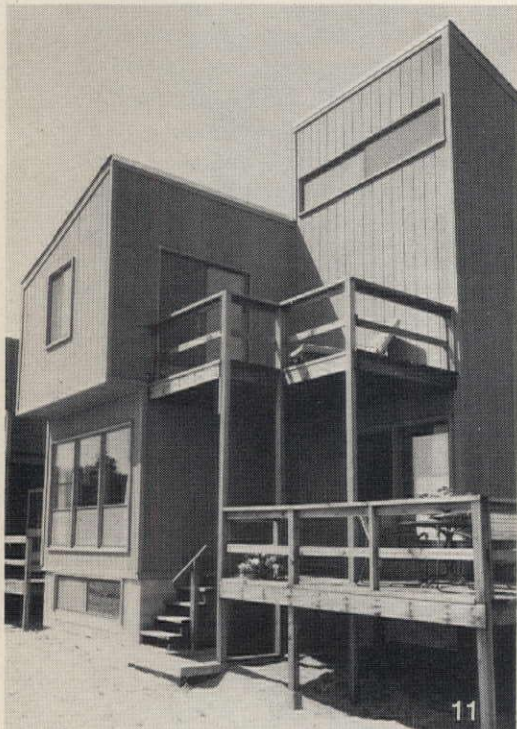
Precut to size lumber and plywood, climate control and componentized plywood wall and floor assembly help make high volume production possible.

Siding and some interior accent walls are textured plywood—specified for strength in transport and appearance.

The result can be very "unboxlike" (photo 12). For about \$17,500 per 1,000 sq. ft. house, including land.

Architects: Thompson and Hanson, Federal Way, Washington.

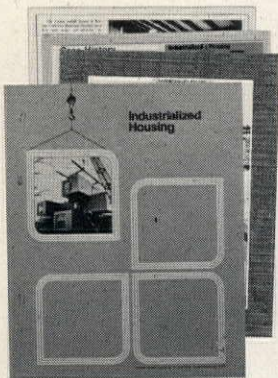
See next page for more on textured plywood.



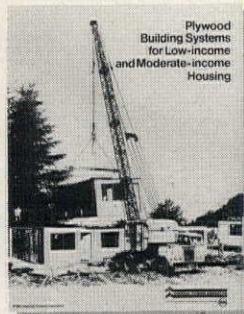
Want to join the industrialized housing revolution?

Write in.

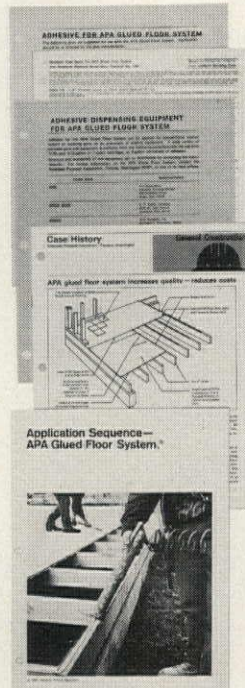
For free books, send coupon or use reader service card.



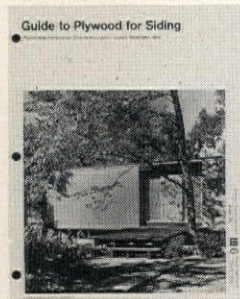
Industrialized Housing Reader Service No. 411



APA Plywood Grades Reader Service No. 413

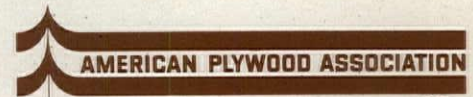


APA Glued Floors Reader Service No. 414



APA Plywood Siding Reader Service No. 412

The APA Story. American Plywood Association is a nonprofit organization devoted to research, promotion, quality testing and inspection for more than 30 years. Included here are just a few examples of the timesaving, economical systems and products developed by APA over the years. You can depend on them, just as you can depend on the DFPA grade-trade-mark. Make sure every panel you buy or specify bears this mark. It means the plywood is subject to the rigid testing and inspection program of American Plywood Association. And that means you're getting the best possible plywood for the job.



Plywood quality-tested by the Division For Product Approval.



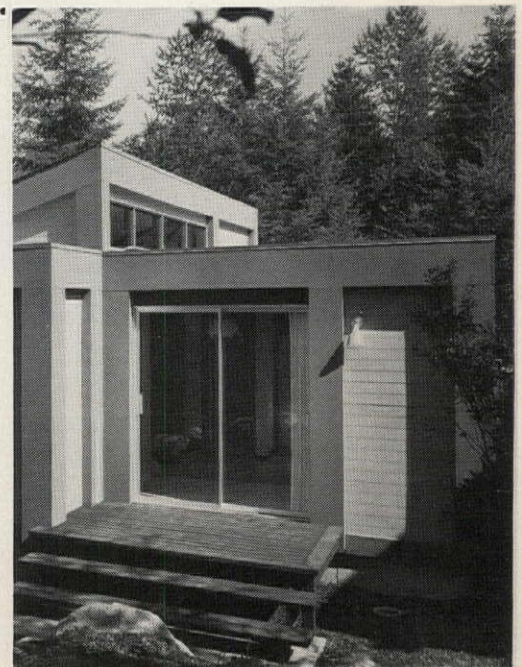
**American Plywood Association
Dept. H-101
Tacoma, Washington 98401**

Please send me the following plywood information packages:

- Industrialized Housing** — six full-color case histories and a 28-page book on plywood in low- and moderate-income housing, plywood concepts on roof joists and trusses;
- APA Plywood Siding** — finishing, application, strength, insulation and maintenance guides;
- APA Plywood Grades** — pocket guide to plywood grades;
- APA Glued Floors** — application, sequence manual, case histories, glue and equipment supplier lists.

Name _____
 Title _____
 Firm _____
 Address _____
 City _____
 State _____ Zip _____

(USA only)



One of a series presented by members of the American Wood Council.

The electric climate is for builders who want a faster return on their investment.



Its saleability helped Bob Ahrens rent an 80-unit apartment complex in 5 weeks—and its dependability has prevented a single tenant complaint!

The 80-unit Mill Run Apartments in Hatboro, Pa., was Mr. Ahrens' first building experience with *the electric climate* (where the heat and everything else is electric). He was very pleased that seven months after he broke ground the entire complex was rented! In fact, it was 25% rented the first day the model opened!

Luck? "Not a chance," says Mr. Ahrens. "Prospective tenants want comfort and convenience in an apartment. And they get it with an all-electric system.

What's in it for me? I'll get a high rate of return on my investment!"

By building all-electric, Mr. Ahrens cut his labor and construction expenses, too. That's because electric equipment is easy and fast to install. Which is why Mr. Ahrens has started two more electric projects.

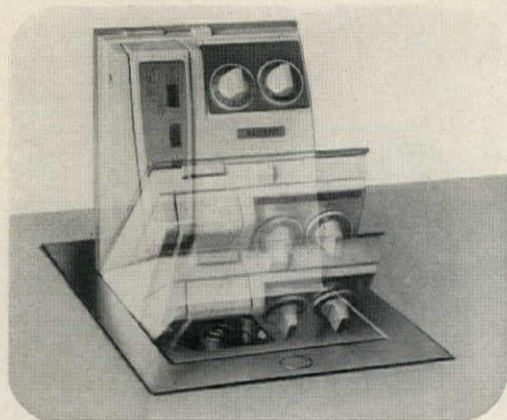
Can you increase your profits with *the electric climate* in your buildings? Call your electric utility company today and find out.

"Awarded to homes exemplifying electrical excellence."



Live better electrically

Edison Electric Institute, Inc., 90 Park Avenue, New York, N.Y. 10016



Hydraulic Lift-Lower Mechanism

Module raises and lowers in and out of counter. Closes flush with counter top.

Latch Release Knob

Retracts two latches located inside attachment well to unlock and release attachments.

3-Position Mixer Arm

- 1) Locks in horizontal position for mixing.
- 2) Raises even higher and locks in place to drip-clean beater.
- 3) Folds out of the way when not in use.



Beater Release Latch
Releases beater from power socket.

Professional Two-Way Mixing Action

Bowl and beater are powered by separate drives. Bowl rotates one way, beater the other way for smoother, more complete beating and mixing.

Beater Clutch and Arm Release
Button stops beater while bowl continues to rotate. Also releases arm to adjust to one of three positions.

Automatic Timer
Sets the Foodmatic for automatic use. Also can be set for manual use.


Solid-State Speed Control
Provides infinite choice of speeds. Solid-state circuitry assures no-stall power.

Speed Selector Guide
Imprinted on mixing arm.

1/3 HP Motor
Extra power to operate more than a dozen attachments. Will not stall at any speed.



New Ronson Built-in Foodmatic

Listed by Underwriters' Laboratories 

New Ronson Built-in Foodmatic

...the one appliance that does the work of dozens, does it better and in less space. It mixes, blends, slices, shreds, grinds meat, grates, sharpens knives, grinds coffee, juices oranges, crushes ice... it even cooks!

The following attachments are available for the Ronson Foodmatic

 <p>Two Beaters, Two Bowls, Turntable and Dough Hook Turntable and heat-resistant glass bowls interlock to keep bowls firmly in place.</p>	 <p>Deluxe Juicer Comes with two interchangeable ceramic reamers... small for lemons and limes... large for oranges and grapefruits.</p>	 <p>Knife and Scissors Sharpener Hones knives and scissors to original sharpness in seconds.</p>	 <p>Salad Slicer-Shredder Comes with three types of discs.</p>	 <p>Meat Grinder Three grinding discs store in handy compartment.</p>	 <p>Wide-Base Blender Takes whole fruits and vegetables. Even crushes ice.</p>
 <p>Two Custom-Molded Trays Contoured to hold all attachments.</p>	 <p>Ice Crusher Dial settings for ice from chunks to shavings.</p>	 <p>Coffee Mill Grinds beans for drip, percolator or vacuum coffee makers.</p>	 <p>Stirring Cooker Stirs automatically as it cooks at dial-set temperatures from 100 to 400 degrees.</p>	 <p>Mount Organizer Holds beaters, turntable, blender key on cabinet door.</p>	 <p>Recipe Booklet Over 100 pages of recipes and illustrations for hundreds of drinks and dishes.</p>



Portable On-Counter Model
Uses same attachments and has same operating features as Built-in Foodmatic. Storage trays can be mounted in kitchen cabinet.

Console Model
Free-standing cabinet with casters. Only 18" wide. Power module hydraulically lowers flush with "butcher-block" counter top. Uses same attachments and has same operating features as Built-in model.

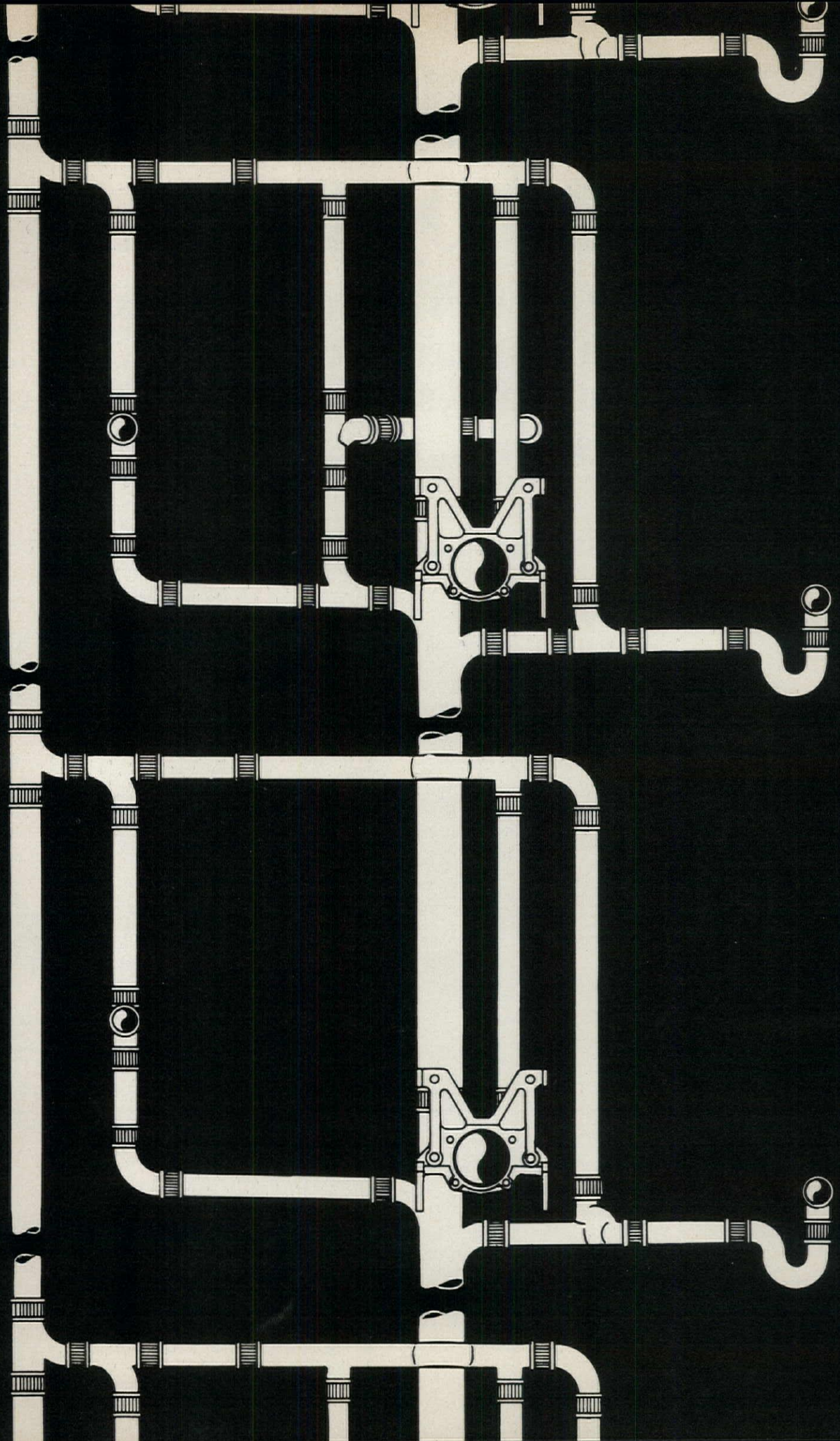


Ronson Corporation
Built-in Major Appliance Department
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Woodbridge, New Jersey 07095

HH/071

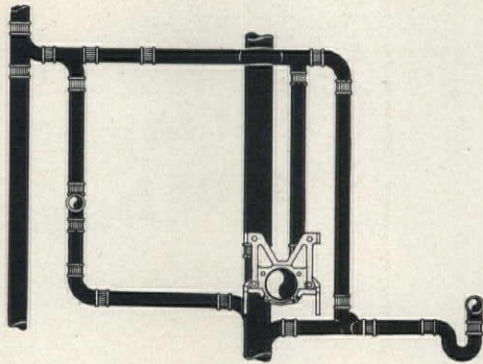
Please send me additional information on the Ronson Foodmatic.
Name _____
Street _____
City _____ State _____ Zip _____

RONSON
DIFFERENT BY DESIGN AND BETTER BECAUSE OF IT



Tyler RufWall™ Simplifies Plumbing Drainage

A cast iron system designed for systems builders that eliminates extra fittings, piping, and joints.



That's what Tyler RufWall is all about. A system that is simple, economical, time-saving, space-saving.

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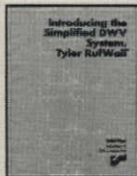
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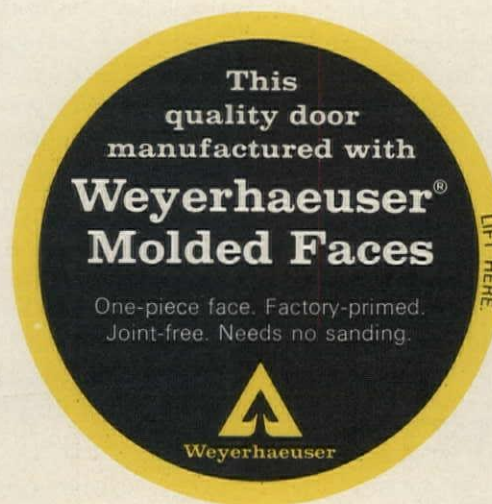
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Glen-Mar Door Mfg. Co., Phoenix, Ariz.

Lifetime Doors, Inc., Livonia, Mich.,
Denmark, S.C., Hearne, Tex., and
Easton, Pa.

Mohawk Flush Doors, Inc., North-
umberland, Pa. and South Bend, Ind.

Morgan Co., Oshkosh, Wis.

Pease Co., Hamilton, Ohio

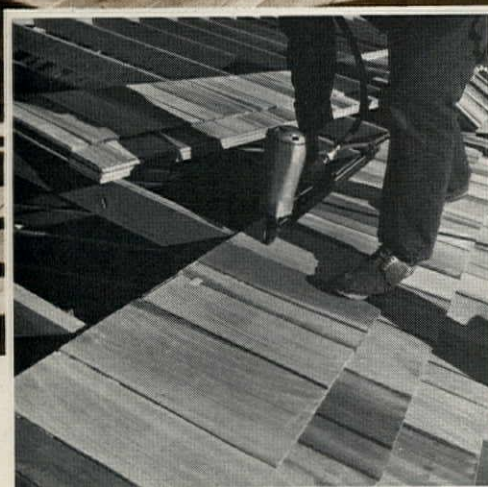
Premium Forest Products, Ltd.,
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Walled Lake Door Co., Richmond, Ind.,
Stanley, Va., Tupelo, Miss. and
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An update on factory-built housing

Let's not start underrating the potential of modular housing

There's going to be great temptation to do just that. Suddenly, modular housing no longer looks like the miracle cure for all our housing ills. A number of modular companies—some of them big ones—have quietly folded up, and others are apparently in big trouble. Operation Breakthrough is still having problems getting even a few prototype units built, and the cost of the units seems to be discouragingly high. And the other day a *New York Times* article finally got around to pointing out what some of us have been saying for a long time: that even if you could knock half the labor cost out of an apartment project, it wouldn't drop rentals by more than three or four dollars a month; hence the value of industrialization in cutting housing costs is very much in question.

All this is merely the swing of the pendulum. Modular housing came on the scene with trumpets and flourishes. If you listened to HUD people, modulars were going to create the golden age of low-income housing, and soon, too. If you listened to Wall Street, modular companies were the greatest

growth possibility since—well, mobile-home companies.

Most of this was eyewash. But a lot of people believed it anyway, and some of them went out and started modular companies without really knowing what it was all about. A shakeout was inevitable, and that's just what we're beginning to see.

But let's not let the shakeout obscure the essentials. The basic problem that brought modular housing into existence—a high-priced and dwindling labor supply—is still with us and getting worse. Modular's other key advantages—faster turnover, less weather exposure and more accurate cost control—still apply, and are even more important in an inflationary economy. And while some modular firms have taken baths, a lot more are alive and well and making money.

Modular housing is going to be a permanent and important factor in homebuilding. It will reach that position a lot faster if we assess its potentialities realistically instead of submitting them to emotional roller coaster rides.

. . . and let's not overrate the potential of the mobile home

Back in April we published an article suggesting that if the homebuilding industry would get off its collective tail, it could recapture much of the low-cost market that has recently been taken over by the mobile home. Our thesis was that the mobile isn't really the low-cost bargain it appears to be, and that a homebuilder could, with modular houses, provide low-income buyers with a better home for effectively less money.

As you'd expect, this caused a certain amount of turbulence in mobile-home circles. A few people even went so far as to suggest that we had bent the facts. We'd like briefly to restate our position, partly to show that we haven't bent any facts and partly because the issue is an important one for modular housing.

The price tag on a home means little to the family buying the home. What really counts is 1) the downpayment, 2) the monthly payments, and 3) the resale value. You have to consider all three before you can

assess the real cost of the home.

The mobile's price tag is usually lower than the tag on a similar-sized modular. The downpayment may also be less—although not invariably so. But because of the short-term, high-interest loans which are all that's available for mobiles, and thanks to pad rents which are getting higher every day, the monthly cost of the mobile is almost invariably higher—sometimes much higher—than the modular's, which qualifies for a mortgage. Finally, because the mobile has a relatively short life, the family that resells it is going to be hit with a whopping depreciation—up to 60% in five years, according to the industry's own official blue book on used mobiles. But the modular should hold its value, or even appreciate, like any other conventional house.

It's really very simple. The modular can be a much better deal for the low-income family. The question is, when are modular builders going to do something about it?

MAXWELL C. HUNTOON JR.

What's holding back the **REAL** breakthrough in modular housing?

There's going to be a breakthrough sooner or later.

Modulars have too much going for them for their production to remain at its present low level—roughly 2% of all housing units. The pressures of diminishing labor supply and rising labor cost will be too strong to be denied for long. And while modular construction may as yet be no cheaper than conventional, many developers have discovered that the accuracy with which it can be estimated and the speed with which it goes up can by themselves produce worthwhile savings.

There are other promising aspects too. Modulars face few serious technical problems. Most modular operations are really on-site operations moved indoors, scheduled for greater efficiency, and set up so that relatively unskilled workers can do the job. Complex and expensive automated equipment has so far proven almost totally unnecessary, so while a modular plant is by no stretch of the imagination cheap, it is nevertheless well within the reach of big building and development firms. Nor has there been any significant resistance to modulars on the part of either lenders or ultimate users. By and large the financial community is treating the modular as just another house as far as mortgage money is concerned. And so far at least, there is no sign that either the buying or renting public has serious qualms about the appearance or quality of modulars.

So what's holding modulars back?

Caution, for one thing. Modulars haven't yet shown the cost advantages over conventional construction which would warrant a wholesale rush into the new field. And there has been sufficient attrition among companies that did rush in—often blindly—to make other potential manufacturers stop, look and, for the time being at least, wait.

Nevertheless there are some 200 modular manufacturers already in production. And these companies could be breaking through to lower costs and greater sales were it not for a number of problems that are at the least irritating and at the worst crippling.



To identify the most serious of these problems, HOUSE & HOME invited top executives of six leading modular manufacturers to a modular rap session.

Their companies represent a diversity as wide as modular housing itself. Specifically:

Two companies—Modular Housing Systems and HMI—manufacture multifamily modulars only. MHS is a publicly owned independent, while HMI is a division of a major corporation.

One company—Creative Building—builds mostly multifamily modulars. It is a privately owned corporation.

One company—Environmental Systems Industries—builds mostly single-family modulars and so-called mobile modulars. It is a division of a publicly owned corporation.

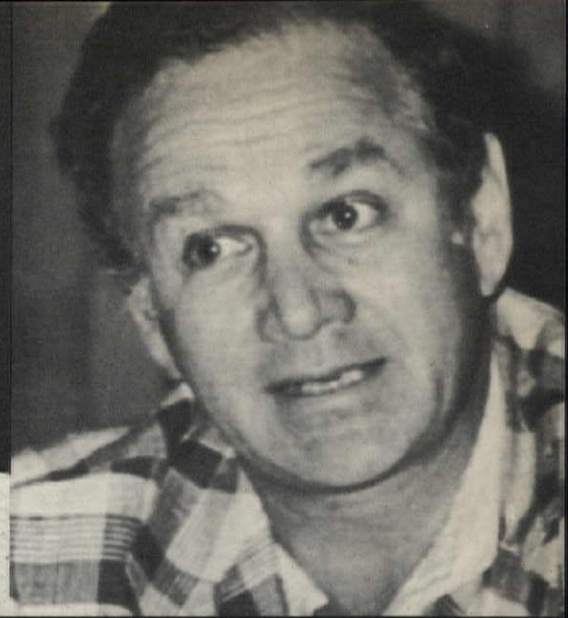
One company—Behring Corporation—builds only single-family modulars. It is part of a publicly owned building and development corporation.

And one company—Guerdon Industries—builds single- and multifamily modulars, plus a host of other types of modular buildings. It is primarily a mobile home producer.

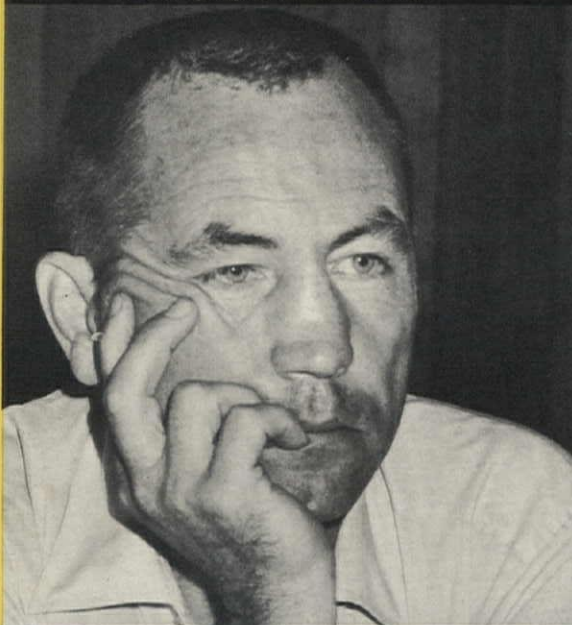
Representing HOUSE & HOME,
top to bottom:
John Goldsmith, Maxwell Huntoon,
June Vollman, Jeffrey Smith



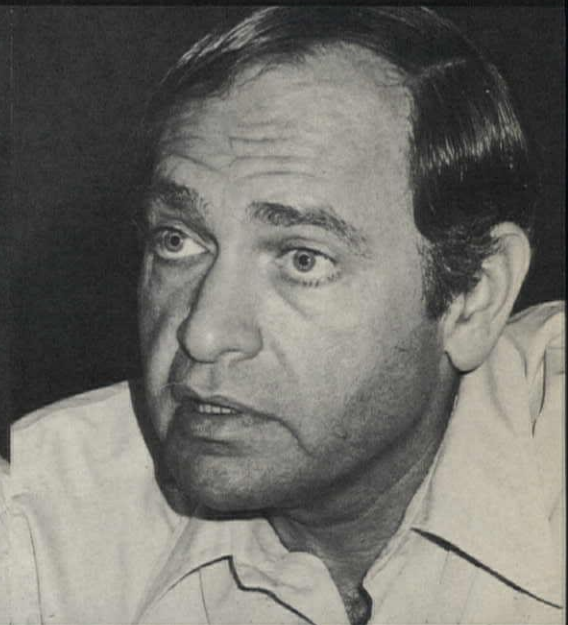
Thomas Myers, president, mobile home and modular group, Guerdon Industries



Alan Glen, president, HMI



Roy D. Murphy, president, Creative Buildings Inc.



Joseph C. Grasso, executive vice president, Modular Housing Systems Inc.



Kenneth E. Behring, president, Behring Corp.



Barry Berkus, president Environmental Systems International

For two days, this panel discussed the most serious of modular housing's problems with four of HOUSE & HOME's editors. These discussions are the basis of the report on the following pages.

The problem of CODES is holding back the real modular breakthrough

It's not that any particular code is so bad, but rather that there are so many codes and they are so different

To some extent the modular builder shares the same code problems that bedevil the conventional builder. There are reasonable and unreasonable codes and reasonable and unreasonable building inspectors. And there are locales where code restrictions virtually rule out any homebuilding at all.

"It's almost impossible for us to get our modulares approved in most major metropolitan communities," says Tom Meyers. "On the other hand, in small cities and suburbs, there's almost no code problem we

can't overcome."

What's not so easy to overcome however, is the enormous multiplicity of local codes. Every city, town and hamlet has its own code, most of them appreciably different from each other. And the panel members whose companies are shipping modulares into a number of different towns and states agreed that the problem of multiple codes was very serious indeed.

"Anyone who tries to build modulares in several states is in for a real mess," says Joe Grasso. Says Roy Murphy: "We think we could cut as much as 15% out of the cost of our units if we were allowed to build to just one good performance code." And says Meyers: "There's no code in existence today that a modular house can't meet. But we can't meet them all at one time.

Nor are the codes themselves the extent of the problem. The panel felt strongly that local conventional builders often exert a strong pressure on just how the codes are enforced by local officials.

"Almost every community creates some problems of this kind," says Meyers. "The codes tend to be archaic, and there is

strong activity by local stick builders to keep them that way."

Says Alan Glen: "If you have 100 communities, you have 100 pressure groups trying to discourage modulares. What we have to do is show conventional builders that modular houses can make money for them."

By and large, modular manufacturers who build chiefly multifamily units have the more difficult time because of the complexity of townhouse and garden apartment buildings.

"The trouble lies mostly in fire regulations," says Grasso, whose company is shipping modulares into six states. "There's no consistency among state regulations. In Connecticut, for example, we have to provide two exits from the second floor in garden apartments. In Pennsylvania, a three-story apartment building must have a solid masonry shell; other states will accept frame construction with masonry party walls.

"What all this means is that we have to do a lot of redesigning and changing from our standard units. And in some cases the redesigning gets so ex-

pensive that we simply can't take on the job."

For companies with relatively restricted shipping areas, the code problem is far less serious. Behring Corp., for example, uses all the modulares it produces in its own projects in Florida.

"We don't have any code problems now," says Ken Behring. "We've been accepted by every major building code in Florida, and also by the Southern code."

Environmental Industries finds itself in much the same position. So far, all of its modulares have stayed within the California state lines. And ESI has the added advantage of a California statute—passed in 1971—which says that any modular that meets state code requirements must be accepted by any community in the state.

"It's worked well," says Barry Berkus. "The only trouble is that as things stand now, every unit has to be inspected, and the state inspecting facilities are overloaded. We expect eventually to have a 'plan approval' system under which state inspectors would spot-check units in the plant. Then there should be no problems.

"We haven't shipped any modulares over state lines yet so we don't know what to expect from that. But we understand that other states on the coast are planning codes similar to California's."

Meyers, too, feels that statewide code laws are the best answer for the future.

"We need state laws, and then we need reciprocity between states. The mobile-home industry has had great success this way with their A-119 specs, and there's no reason that modular housing can't go the same route."

Others on the panel didn't think that adoption of similar legislation by other states would make that much difference.

"The state laws that are now being passed in our market area aren't consistent," says Grasso, "and there's no reciprocity between states. For one job we're doing, in Reston, Va., we had to bring people from three testing concerns into our plant. They think they have to inspect every module. The way it looks, it's going to cost between \$5,000 and \$10,000 to inspect 73 townhouses for that job.

"New York has a simpler procedure. Its inspectors come

down here for spot checks. But Maryland laws give local options to communities, so the state law really means nothing. Michigan is the same way."

Is there a solution to the problem of codes? Generally speaking, the panel took a pessimistic view.

"We're pretty much resigned to living with the situation," says Murphy. "We design to what the code requires. If this means using cast iron, for example, we'll use cast iron—even though it costs twice as much as PVC."

"We figure we're overdesigned by a factor of about four. Our boxes are all glued, we use conduit so an inspector can pull the wiring and check it. It's very expensive, but we can meet almost any code anywhere."

"Ideally, we should have some sort of national code. Or HUD should establish a code for its housing that supercedes local codes."

Glen agrees, but doubts that anything will get done.

"I think we'll just have to keep on building to local codes. I don't see any breakthrough. I don't see any sort of a national code in the offing, and I don't think state codes will help too much."

"We need federal legislation but I don't think we'll get it. Local builders don't want it, and they have a lot of political power."

"We're just going to have to change design for each new run of modulars, and if the jobs are big enough I don't think it will be too critical."

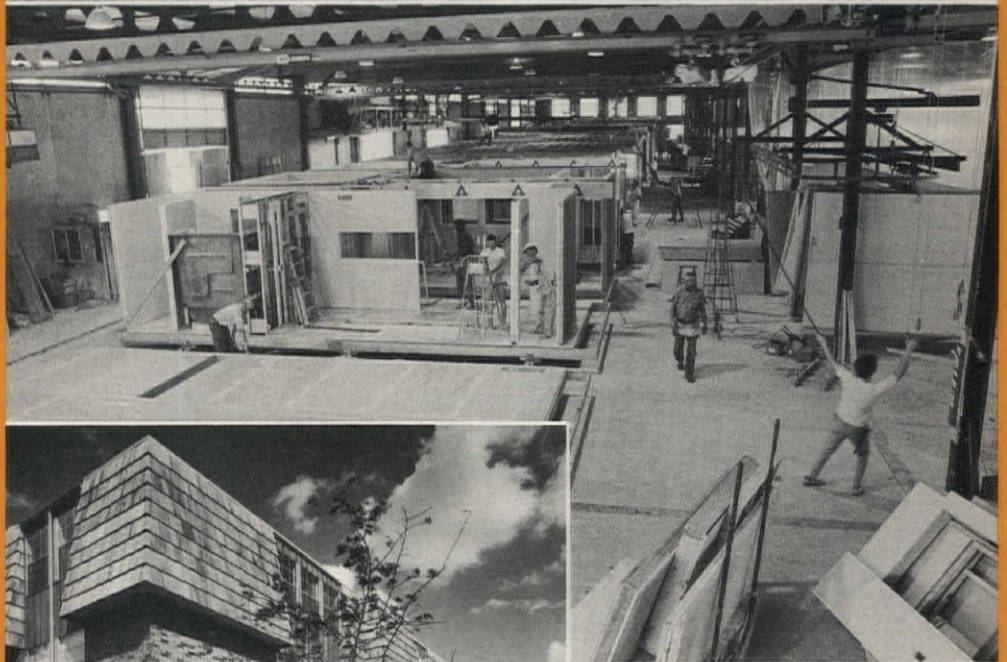
But says Grasso: "Operation Breakthrough has created an atmosphere of modular housing, and now HUD should take advantage of it and push for uniformity. Non-uniformity drives up those same costs that modular housing is designed to drive down."

Solution consensus: Encourage the states to 1) adopt state codes that make acceptance by communities mandatory on approval, 2) work with other states for reciprocity, and 3) bring fire regulations for multifamily units under the state codes.

Adds Grasso: "Let's discourage the use of independent testing organizations. Otherwise we'll be creating a monster. It would be like putting a tax collector on commission."



Creative Buildings Inc. is that rarity among sizable modular companies, a privately owned firm. President Roy Murphy is an architect; he began prefabricating schools and churches in 1953, went into housing in 1963 with a combination of panels and utility cores, and became a full-fledged modular manufacturer in 1968. A fire destroyed his plant in 1968, and he built the new one shown here; it has just over 50,000 sq. ft. of area. Creative Buildings has produced about 1,000 units since 1969, most of them for FHA and subsidy markets, and most of them multifamily units. Murphy expects to go public in the near future so he can expand his company.



RICHARD DERK

The problem of FINANCING is holding back the real modular breakthrough

It's not that financing isn't available for modulares, but rather that the money doesn't get there when it's needed

The problem, according to the panel, has nothing to do with any discrimination by lenders against modulares. On the contrary, the lending community seems to view modulares as no more and no less than ordinary housing when it comes to permanent financing.

But construction financing is something else again.

It's traditional in homebuilding that a house has value only to the degree it is finished on its site. On that basis, the builder is permitted to draw portions of his construction loan at various stages of completion.

Obviously this system isn't designed for modulares. Once a modular foundation is finished, the only on-site work is placing the boxes, zipping them up, and hooking up utilities. Most of the construction has taken place back in the factory. And this factory construction is not eligible for interim draws.

"We need the recognition that we're a different animal," says Joe Grasso. "For us, construction starts at the factory, not the site."

And says Roy Murphy: "More than 80% of the work on modulares has been done by the time the boxes first arrive at the site."

What happens is that the modular builder, unable to get draws against work actually completed, has to borrow against the corporation's line of credit. And this can hurt the firm's capital position.

"We keep a constant materials inventory of from \$1 million to \$1.5 million in various stages of completion," says Grasso. "At 8% interest, that's a lot of money. But the worst thing is that it ties up credit that would otherwise go into plant expansion, or perhaps land acquisition for our future projects."

The problem is more serious in northern areas.

"If you get a batch of snow," says Alan Glen, "you're going to have to stockpile units. You can't just shut down your lines. And in our area, we can't do any site work for about three months out of the year; it's not going to be unusual for the plant to get ahead of the foundations. Every time something like that happens, we have to borrow against working capital."

(An extreme example of the situation is, of course, Stirling Homex, perhaps the biggest manufacturer of modulares in the country, which earlier this year found itself with some 6,000 modules—roughly two-thirds of its production since 1969—stockpiled because of zoning problems, unready sites, red tape, etc. To replenish the consequent drain on capital and credit, Stirling Homex has been forced to raise \$20 million through a new issue of stock.)

However, the speed with which modulares can be built and erected makes some amelioration of the interim financing bind possible. For example, on FHA jobs Creative Buildings has often been able to work a speeded-up disbursement program.

"On the first of the month," says Murphy, we request disbursement for all the stuff that's on the site, even though it may not actually have been placed on the foundation. Then in the middle of the month we submit another request for the modules shipped in during the first two weeks. This can mean a lot of money: if 80 boxes were shipped in during the two weeks, the mid-monthly request could be as much as \$300,000. And it means we can discount our material bills.

"This doesn't involve any more money or any more disbursement processing. Normally there would be 12 disbursements for a 12-month job. But with the erection speed of moduls, the same 12 disbursements are made over only a 6-month period. The time could be even shorter—say, three months—and there would be fewer than 12 disbursements.

"Overall, this means that a carload of 2 x 4s could be delivered to the plant the first of the month, built into modules by mid-month, and paid for the end of the month."

Single-family units tend to create less financial difficulty because they are generally sold to other builders rather than put into the modular producer's own project, as are most multi-family units.

"We don't really need interim financing for our sectionals," says Tom Meyers. "Buyers give us 10% down with their orders, and the rest on delivery."

"But we still have to inventory material," adds Barry Berkus. "If interim financing were available for that, it would be a great help."

To some of the panel, the biggest financial problem is caused by current government policy concerning subsidy programs—by far the biggest users of modular housing.

"The sporadic funding of the 235 and 236 programs raises hell with production," says Meyers. "We may have to stop running houses for a project, change to something else, then change back when the first project gets its next money again. We lose our rhythm when that happens, and rhythm is 90% of making a buck in our plants.

"We figure that every time we have to stop and change over a line, our direct costs are somewhere between \$20,000 and \$25,000. Then there's the cost of downtime, lost production, carrying extra inventory, etc. We don't know exactly how much that is, but it's a lot."

Solution consensus: The federal government, through FHA, HUD and Operation Breakthrough, is in the best position to establish the precedent of different interim financing for modular housing. But the problem of intermittent funding of subsidy programs is too much of a potential political football to be solved quickly.



Modular Housing Systems might best be described as the quiet success of the modular housing industry. It was founded as a private company in 1969 by Curtis Tomlinson, a former executive of Weil-McLain, and Joe Grasso, formerly vice president of Presidential Homes, a New Jersey prefabber, then went public late in 1969. First plans called for selling half the firm's output to other builders, but

when the mortgage market went sour, MHS turned to subsidy housing and did more and more of its own developing—a trend that will continue, according to Grasso. In addition to the original 90,000-sq.-ft. plant in Northumberland, Pa., MHS has bought a 40,000-sq.-ft. plant in Ringtown, Pa., and will start production there late this year. Current output is about 1,200 units a year.



The problem of SUPPLIERS is slowing down the real modular breakthrough

Most building-product manufacturers are interested in selling to modular companies, but few of them understand the companies' real needs

While building modulares is very much like building conventionally in the field, it isn't exactly like it. Although the difference is relatively small, it is also crucial. And in the collective and unanimous opinion of the panel, manufacturers of building materials and equipment have completely failed to appreciate that difference.

Generally speaking, the problem breaks down into two areas: the amount of research and development attention suppliers are giving to modular housing, and the service that suppliers are giving to modular factories.

"Suppliers could be developing a lot of things for us," says Joe Grasso. "We're more assemblers than manufacturers, so we need to buy components that are as complete as possible. If suppliers developed such components, they'd find that conventional builders would use them too. The prehung door is a good example.

"Of course there are some things that would be for modulares only—for example, wall and ceiling covering of a single width that would roll on all in one piece. It hasn't worked so far, but it would really help."

"The manufacturers simply

haven't done enough R&D on products for our industry," says Tom Meyers. "They bring out new products without checking them sufficiently, then they want to use us as guinea pigs to get the bugs out.

"There have been new products, but most of them come from us—the users. For instance, when Guerdon first started working with steel and concrete structures, we had a problem attaching drywall to the steel studs. One manufacturer designed a rivet for the job, but it didn't work. So we suggested an adhesive device, and that did work. The initiative came from us, not the manufacturer."

Says Barry Berkus: "We designed our modulares around conventional materials because we knew that that was all we were going to get."

Says Ken Behring: "And we're going to have to keep on using mostly conventional materials until suppliers start doing something for us."

And says Roy Murphy: "Manufacturers are going to have to learn more about how we build—actually come and see what we're doing. Then, for example, maybe they'd give us lumber cut to the proper length for modulares and save us one whole operation."

Much of the problem, of course, stems from the relatively tiny market that modular housing currently represents.

"We're just not talking in large numbers of units," says Alan Glen, "so suppliers aren't very excited. When the modular industry settles down, sees where it's going, and starts getting into real production, then we should get some action."

"We're small," says Grasso, "and our suppliers are much bigger than we are. They don't make changes as fast as we can. But even so, they should be doing better by us."

In the matter of service, the panel felt that suppliers simply don't realize the demands of modular production.

"They haven't yet realized how crucial delivery dates are to us," says Grasso. "They don't see that we're a production facility that runs on a tight schedule."

Says Roy Murphy: "Reliable deliveries are mandatory because we try to keep a minimum inventory of materials on hand.

If we run out of something, we have to ship the box anyway and install the missing item in the field, where it's a lot more expensive—sometimes twice as much."

Says Tom Meyers: "In the mobile home industry, most suppliers are geared to prompt deliveries to help keep inventories down. But our modulars use conventional housing materials, and the suppliers have caused problems. They've got to be educated."

"The basic problem," says Berkus, "is that suppliers are used to shipping first to the guy that pays first. If you pay on a 30-day basis and another guy pays on 15 days, he gets the 8:00 delivery and you get the 12:00. We can't operate that way. If it happened on a conventional job, you'd just send the framers home for the rest of the day. But in a plant, everything has to stop. And it hurts a plant more to shut down for a day because its pace of construction is much faster than a conventional job's."

"In conventional building," says Grasso, "the supplier is used to shipping to a distributor and getting his money quickly. But we have to have the longer terms that builders get because we still have that time lag between buying materials and getting paid for our units."

"Suppliers are nervous about the modular business, and you can't exactly blame them. They've seen a lot of modular firms fold. In conventional building, the builder or his lumber dealer takes the risk, and the suppliers are scared of taking it themselves. But it's about time they recognized that there are good modular companies and shaky ones instead of putting us all in the same bag."

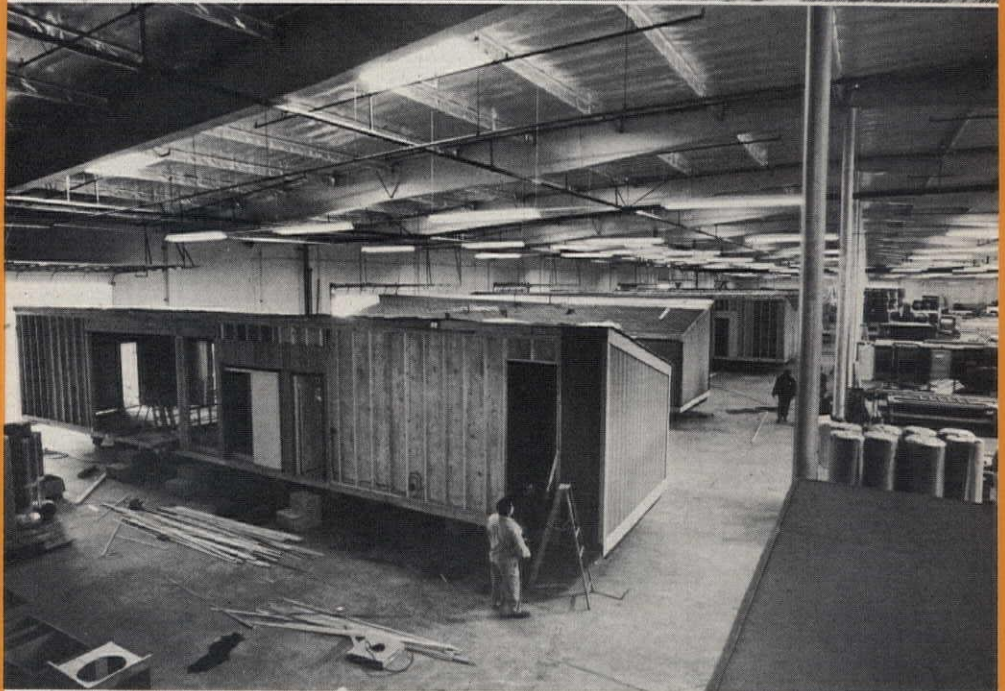
And says Murphy: "Many of our suppliers still ship to us through distributors, and that tacks on an extra 10%. They should ship direct to us and at the same price as a distributor."

Solution consensus: Find a way to convince suppliers that modular builders are indeed a different breed of cat, and as such need a different kind of service and a wide range of different products and materials. Further, convince suppliers that while the modular business is still small, it is nevertheless a growing business with many strong companies in it.



Environmental Systems Industries holds a complicated position in the world of modular manufacturing. It is a subsidiary of Environmental Systems International (of which Barry Berkus is president), and it is under contract to Levitt Mobile Systems Inc., a subsidiary of Levitt & Sons, to design and manage Levitt's 77,000-sq.-ft. plant in Fountain Valley, Calif. The plant is

theoretically turning out two types of unit: modulars, and what Berkus calls mobile-modulars (H&H, June 70). In fact, the two types are physically the same, and differ only legally—the motor vehicle department inspects the mobile-modulars, building inspectors check the modulars. The plant opened last year, has built about 200 units so far, is producing 55 units a month.



RICHARD FISH

The problem of TRANSPORTATION can severely limit the real modular breakthrough

The high cost of hauling means that most modular manufacturers can't ship much more than 300 miles from the plant

"Our main concern right now," says Alan Glen, "is not being competitive enough in price. So everything that adds to our cost hurts."

Transportation does, of course, add to the cost of modulares. A very rough estimate is \$1 per trailer load per mile (the trailer is still the basic mode of transporting); since the typical modular unit takes up two trailers, the average per-unit cost for transportation is \$2 per mile.

The point at which this cost becomes excessive is, to a certain degree, arbitrary. Some modular builders feel that 300 miles, or \$600, is the absolute limit for units which cost somewhere in the vicinity of \$15,000; others have found it occasionally profitable to ship 500 miles or more.

The panel's opinions on the severity of the transportation problem varied according to individual experience. For example:

Since Behring Corp. ships all its modulares to its own nearby sites, Ken Behring sees transportation as merely a minor inconvenience.

Barry Berkus is likewise little concerned about transportation.

"Everything we build goes out of the plant on either a mobile-home undercarriage or a specially designed perimeter dolly. Our costs average 60¢ per mile per box, and our houses average two boxes each. We don't feel that this represents any problem at all in our present market area."

Since Tom Meyers' company is primarily a manufacturer of mobile homes, it's logical that its modulares should go out on the same low-boy trailers as mobiles. Meyers does not think this is necessarily the best way, but so far he sees nothing better in sight.

"Rail transportation hasn't been successful from our point of view," he says. "We first tried rail five years ago when twelve-wide mobiles came on the market. We found that the boxes often suffered considerable damage, mostly from the extra handling necessary to get them onto the flat cars, then off again onto the trailer.

"It's a shame this happens, because on long hauls, railroads would be a lot more economical than over-the-road shipping."

Meyers has also tried helicopters on one project. "But it's not feasible now," he says. "It's much too expensive."

Barging is another method of transporting that Guerdon has used. "We shipped some boxes up the coast to Alaska," he says, "and it worked well. For some reason, there wasn't nearly the damage we found on rail travel. But barging is feasible only on long hauls, and of course, where there are waterways.

"There's really no substitute for over-the-road shipping, even though it's far from ideal. And as we get more and better expressways, we can expect this kind of travel to get better too."

Joe Grasso agrees that the trailer is the only practical way to ship modulares now.

"We just don't believe in the kind of extra handling that would be necessary if we shipped by rail—from trailer to train, back to trailer, maybe a drop-off for storage, then back onto the trailer and off onto the foundation.

"That's just too much handling—too much chance of damage. We have a rail siding, we could put boxes right on cars, and maybe if we had a really big job more than 500 miles



HMI started life in 1967 as Glen Development Inc., and owns the distinction of having produced more than 200 modular units before its plant was built. President Alan Glen liked the idea of modular construction well enough to plan a number of multifamily projects (including Puffton Village in Amherst, Mass.—H&H, April '68) and have the units built on contract

by two mobile-home manufacturers. In 1970, Glen was bought by Hercules Inc., and HMI, now a division of Hercules, built a 100,000-sq.-ft. plant in Bloomsbury, Pa. It has just gone into production on government subsidy housing like that shown at right. Glen himself recently resigned as president of HMI, but currently remains with the company as a consultant.

away, we'd do it. But on short hauls, no."

Grasso feels that at least some of the cost of over-the-road shipping could be cut if states would (a) be more reasonable in their regulations and (b) get together on their requirements.

"For example," he says, "most states won't allow two boxes per trailer on special permits. We've gotten special permission relating only to modular housing; it ought to be made a permanent regulation.

"Also, states have very different laws on things like where trailers can travel, when they can travel, whether flag cars are necessary, etc. If we could get sensible uniformity here, it could save a lot of money."

The suggestion is often made that if all states would approve over-the-road travel of 14 ft.-wide units, the cost of shipping per square foot of module area would be reduced. But Grasso has his doubts.

"Big units like that could cause accidents," he says, "and that would bring a lot of restrictive legislation down on our necks. I think we're better with 12 ft.-wides."

Solution consensus: If state laws can be liberalized and made uniform, at least some of the cost of over-the-road shipping can be squeezed out. Rail travel could become feasible for long hauls, but handling procedures must be vastly improved first.



The problem of LABOR is a potential threat to the real modular breakthrough

Labor is the key to modular housing's promise of lower costs. Unless it stays in balance, the whole concept is worthless

The importance of labor can be seen in comparative rates for conventional and modular construction: while the conventional builder is paying his carpenters, plumbers and electricians anywhere from \$8 an hour up, the modular builder is operating his plant with unskilled labor that gets, on the average, just over \$3 an hour.

Nor is it just a question of labor cost. The supply of skilled building labor has been dwindling for several years, and has now reached the point of acute shortage in many areas. By contrast, in most parts of the country there is a large pool of semi-skilled and unskilled labor which has been made even larger by the recession. If this group of workers can be trained for modular construction, and if the unions representing it can reach a viable working agreement with modular companies, modular housing will be on a sound economic footing.

The panel's view was that the available labor has shown that by and large it can do the job, but the question of union representation is still up in the air.

"We picked the location for our plant partly because of the local labor situation," says Joe

Grasso. "It's an excellent labor market—a rural area with a lot of mobile home plants around. A lot of our people worked in these plants—some of them are experienced foremen. But of course we also have to have people who are familiar with permanent housing and the kind of quality it represents.

"We pay an average of \$3.10 an hour, and our turnover has been minimal."

With seven modular plants scattered around the country, Tom Meyers is in an excellent position to make a general evaluation of the labor situation.

"Basically, we use the same type of labor as in our mobile plants," he says, "semi-skilled people oriented to a production operation. Turnover depends pretty much on local market conditions. We've found, though, that smaller communities have more stable labor situations, and most of our plants are in such communities."

Roy Murphy is equally pleased with the quality of his labor.

"Most of our people were unskilled when they started with us," he says, "but now we're getting excellent productivity. Morale is very good; when we started, turnover was about 100%, now it's about 10%. We're paying an average of \$3.20 an hour."

On the other side of the coin, unskilled labor can cause problems—particularly in an urban market. Says Barry Berkus, whose plant is in Los Angeles: "Everyone thought that \$3-an-hour labor would be just great. But it's totally unskilled. Absenteeism is high, and so is turnover. When you try and push to six days a week or ten hours a day, these people get unhappy. And because of the high turnover, you wind up with unskilled workers teaching other unskilled workers. If a guy does become good, he's liable to jump to a field job where he can get much higher pay.

"The important thing is not so much what you pay workers per hour as what your effective labor costs are. If someone isn't doing his job well and there's a hole in the line, then the whole plant slows and your labor costs go up."

And says Ken Behring: "We

get a lot of turnover too, so what we try to do is upgrade the best people as fast as possible. We've got about 400 people on one shift now, and if we go to two shifts, we expect a total of about 850. So you can see how important a stable work force is to us."

On the question of union representation, the panel was unanimous in its opinion: it doesn't matter which union as long as there's just one. The so-called tri-party agreements which some modular companies have worked out are, in the panel's opinion, potential trouble.

"We just can't have jurisdictional problems," says Murphy, whose company works with just the carpenters and joiners union. "So rather than go tri-party, we sub out our plumbing and electrical work right in the plant. And we're teaching unskilled men to do plumbing under the supervision of a union plumber."

Regardless of what happens in the plant, the site work that modulares require is almost always done by union craftsmen.

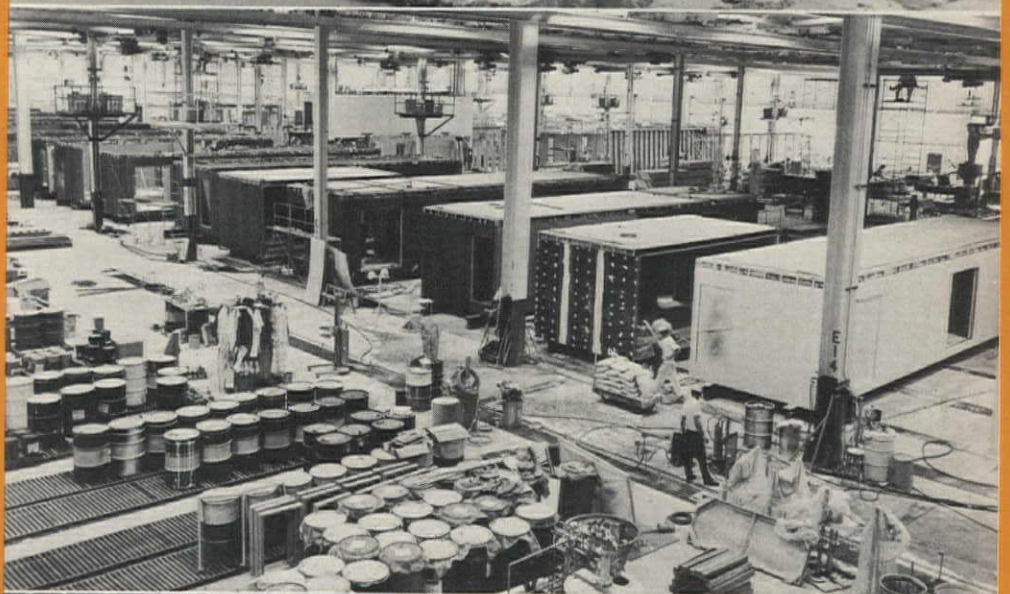
"We've seen much better cooperation between plant labor and site labor in the last few months than ever before," says Murphy. "At first there was reluctance. But now that everyone's seen that regular union site labor will be used, it's disappeared. And the building trade unions seem to recognize the need for modulares."

Solution consensus: Since a plant is predicated on \$3-per-hour labor, it's up to modular companies to make sure that the labor can do the job. Meantime, press for single-union representation as the best way to eliminate potential jurisdictional disputes.



Behring Corp. is currently operating the world's largest modular factory—a 350,000-sq.-ft. monster in Tamarac, Fla., near Ft. Lauderdale. Ken Behring built the plant because, he says, he couldn't get enough skilled labor for his single-family projects, and because he found he couldn't control his costs adequately in the field. The majority of his homes are still being

built conventionally, but Behring says that he is now building modulares at the rate of about 1,000 a year—about one third of the company's total volume, and he expects that proportion to grow. Production includes 13 models with from two to four bedrooms; about 600 units, priced at around \$24,000, have been built since the plant opened early in 1970.



The problem of CONTROL could be the biggest barrier of all to the real modular breakthrough

The trouble is, most modular companies don't know whether they should be developers or just wholesalers of modular boxes

It's been tried both ways and in combination. As noted at the beginning of this report, some members of the panel build entirely for their own projects, some sell all their production to other developers, and some do both; and the same is true of the whole modular industry. The question is not which is the right way, but which way gives the modular manufacturer adequate control over his modules, from the time they start onto the line until the last payment is made on them.

The alternative is a nightmare in which modular boxes pour out the door of the plant and, because for one reason or another they can't be put on their foundations right away, sit in a cornfield eating up the manufacturer's bank account and his line of credit.

There are currently two schools of thought on this question, and panel members reflected both of them. Those involved primarily with multifamily modulares were emphatically of the opinion that the modular manufacturer must also be the developer.

"Basically," says Alan Glen, "The modular producer needs to run the whole thing, from finding the land to moving in tenants. The idea that he can sell multifamily units to other builders or dealers is a farce. He just can't depend on them to have sites and foundations ready when the houses come off the line."

Joe Grasso thinks the whole concept of modular housing has been looked at upside down.

"If we look at ourselves as manufacturers," he says, "we're in trouble. We should look at ourselves as developers and builders who happen to build most of our product in a plant rather than on the site."

"At MHS we started out selling the majority of our units to other builders, and it just didn't work. From here on in,

we'll build in our own projects."

Roy Murphy concedes the importance of controlling the entire process, but also feels that he can continue selling some units to other builders.

"Right now we sell about 40% of our output to outside developers. This proportion may get smaller, but we don't plan to eliminate it entirely. On the other hand, we make sure that we have a very tight rein on our customers' operations."

Guerdon sells all of its single-family modulars to other builders and dealers. Insofar as its multifamily modulars are concerned, it is hedging the bet.

"We see the importance of going both ways," says Tom Meyers. "We want to have some projects of our own, but we also know that there are a lot of developers who won't have plants of their own and will buy our modules."

Barry Berkus, whose cooperative venture with Levitt is currently producing almost all single-family units for sale to individual buyers, says that so far, demand is equal to production, so the problem of control hasn't really arisen.

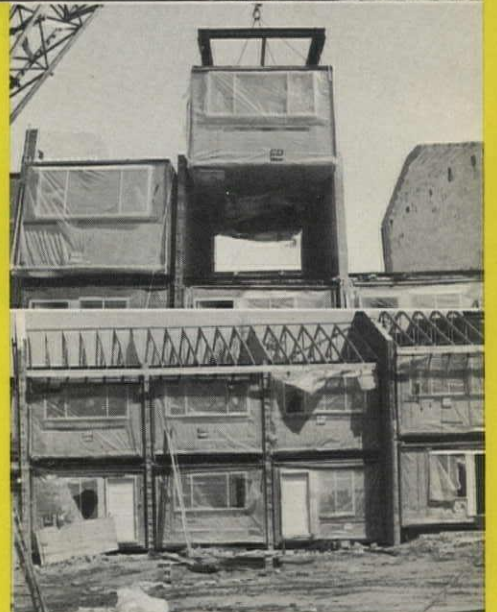
"We can build virtually one unit at a time," he says, "and this gives us a lot more flexibility than the multifamily producer. But we know that when we do start shipping to other developers, we're going to have to insist that they accept the units at the time they contracted for. Of course this won't always work either. So we'll probably have some projects of our own going at the same time and use them to fill in."

Solution consensus: There really isn't any. By and large the panel agreed that the question of control is closely allied to the question of what place modular housing is to take in homebuilding. It will be a while before the answer is clear.



Guerdon Industries probably sold more modular units last year than any other manufacturer in the country, yet modulars are only a sideline for the company: it turned out about 30,000 mobile homes vs. roughly 1,500 modular units. (The figures are not exact, says Tom Meyers, president of the Mobile and Modular Division.) Guerdon now has seven plants turning

out its modulars; they range in size from 40,000 to 80,000 sq. ft., are spread all over the country, and have built an assortment of structures that includes single- and multifamily housing, hospitals, military housing, dormitories, banks, offices and classrooms. The photos at right show a typical plant, one of Guerdon's sectional units, and a multifamily project.



PROJECT PORTFOLIO

DEVELOPMENT: Ocean Reef Club

LOCATION: North Key Largo, Fla.

BUILDER: Camstaff Construction Co.

ARCHITECT: Hatcher-Zeigler-Gunn & Assoc.

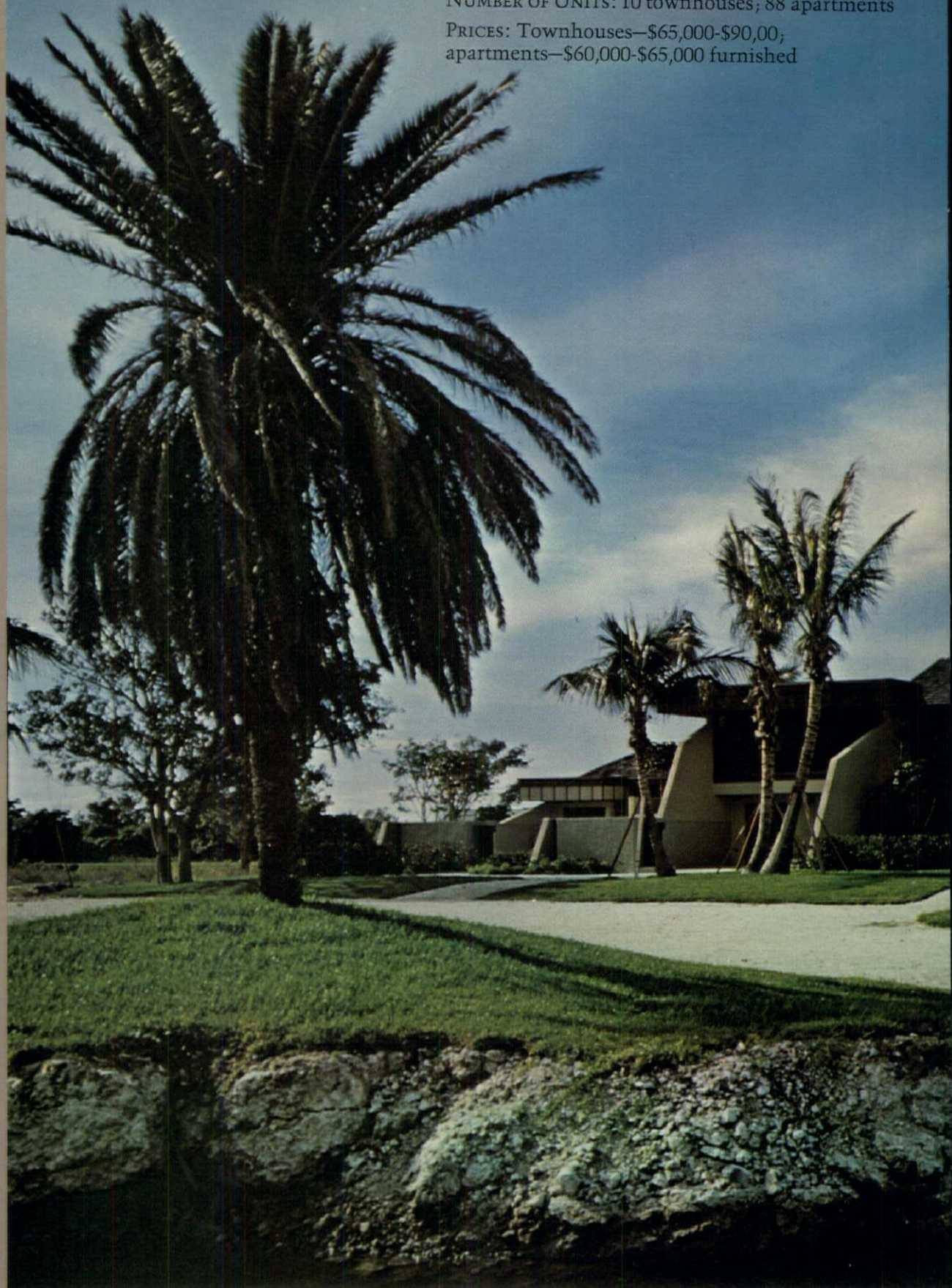
LANDSCAPE ARCHITECT: Walter Taft Bradshaw

SIZE OF PROJECT: 13 acres

TYPE OF UNITS: Condominium townhouses and
apartments

NUMBER OF UNITS: 10 townhouses; 88 apartments

PRICES: Townhouses—\$65,000-\$90,000;
apartments—\$60,000-\$65,000 furnished



2

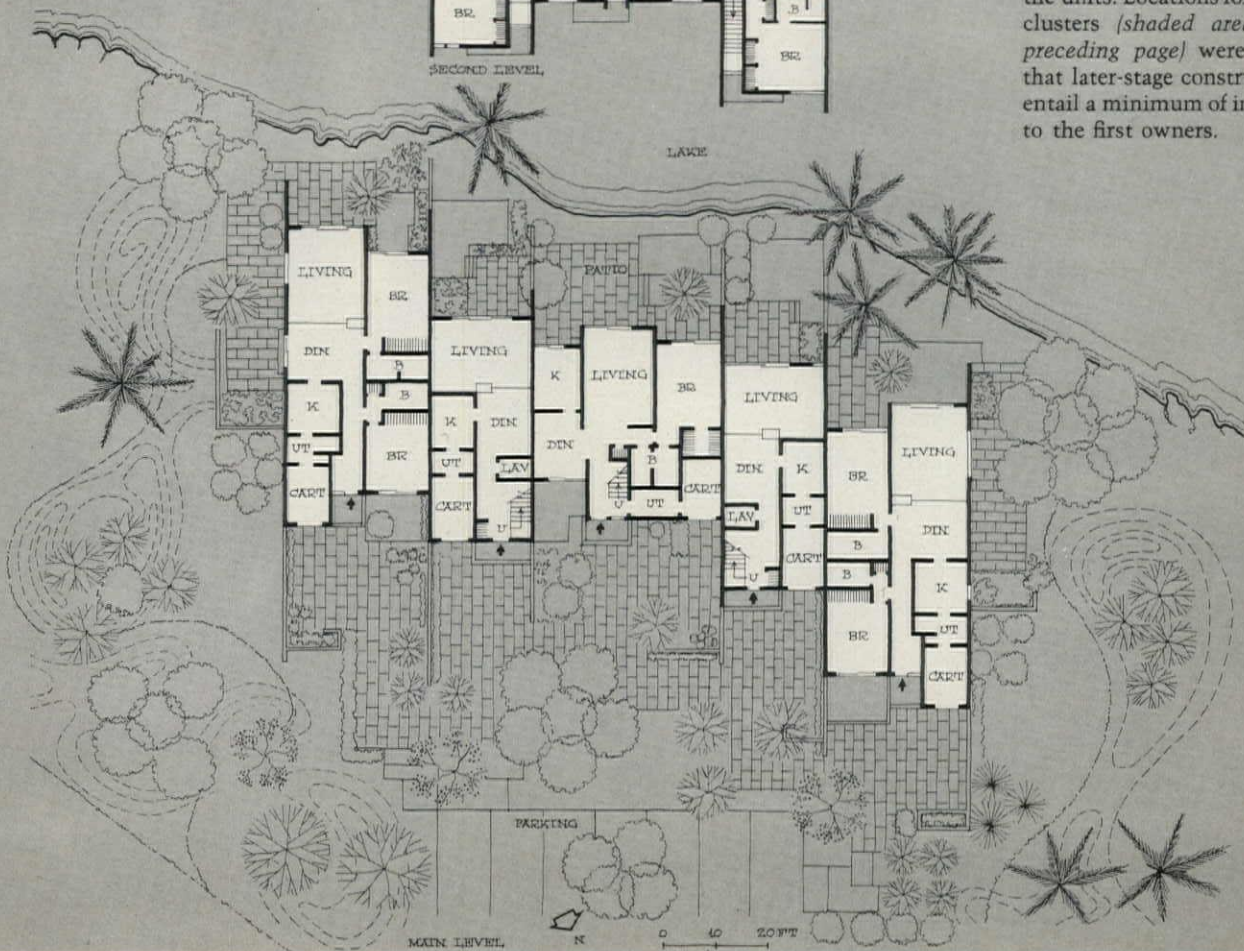
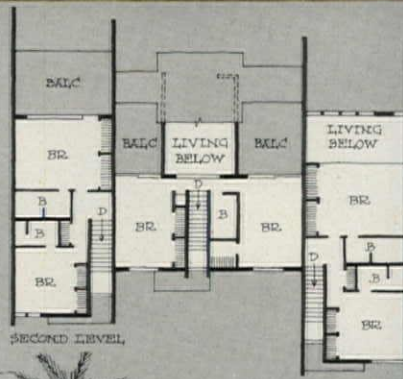
Ocean Reef Club is an establishment resort community which until recently sold only single-family-home lots. In an attempt to use its land more efficiently, the club is building cluster townhouses and apartments in one area. Shown here and on the next two pages are the first two townhouse clusters; the apartments are just now getting under way. Buyers still get all club benefits—a marina, tennis, golf, swimming, etc.—plus the advantages of condominium ownership.

TO NEXT PAGE

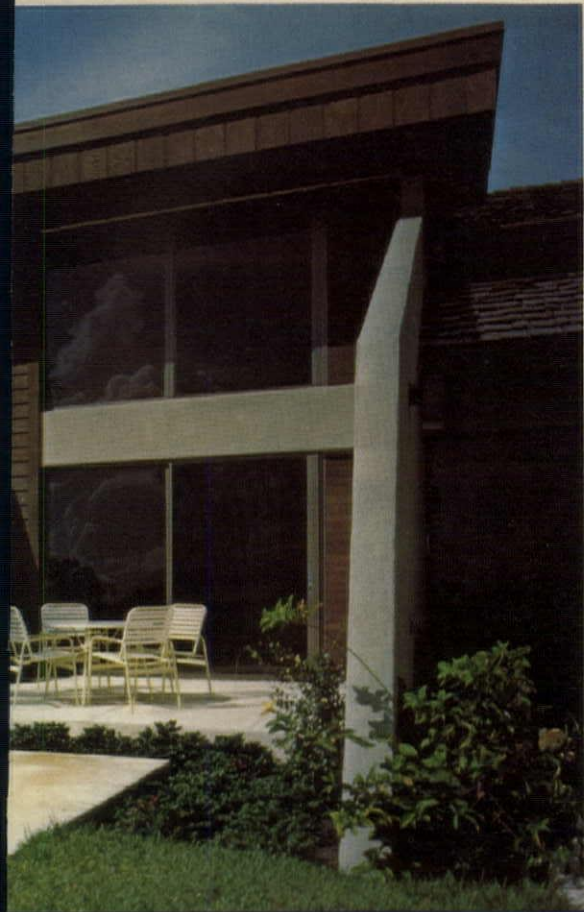




Cluster plan puts single-level townhouses at either end of two-level models. Layout of largest unit (*center plan*) has a two-story high living room whose upper side walls separate the balconies off the upper-level bedrooms.



Townhouse clusters comprise five units sited so as to provide complete privacy for each owner. Two-story privacy walls isolate the patios and balconies of adjoining units (*photo above and top photo, opposite page*). Varied roof lines (*photos, above left and bottom, opposite page*) also contribute to a visual separation of the units. Locations for the first two clusters (*shaded area, site plan, preceding page*) were selected so that later-stage construction would entail a minimum of inconvenience to the first owners.



Three uncommon apartment projects for the big city

1 an artists' colony in New York City

The old Bell Telephone Laboratories (outlined area, top photo) proved to be ideal for conversion into apartment-studios for working artists—and at rents artists could afford: \$118 to \$209.

The 13-story buildings, built between 1898 and 1920, are on the West side of Manhattan and overlook the Hudson River. They contained 625,000 sq. ft. of high-ceilinged space with large windows, thick masonry walls, and fireproof construction. So a minimum of structural changes was necessary to convert them into the 384-unit Westbeth Artists Housing Complex.

One major change was the conversion of an existing enclosed truck loading courtyard into an entrance plaza and arcade for shops and galleries at ground and mezzanine levels (photo, right). A roof and two existing floors were removed; balconies were added for duplex apartments to comply with New York City exit requirements.

This project received an Honor Award in the 1971 Homes for Better Living Program, sponsored by The American Institute of Architects in cooperation with HOUSE & HOME and American Home.

Architect:

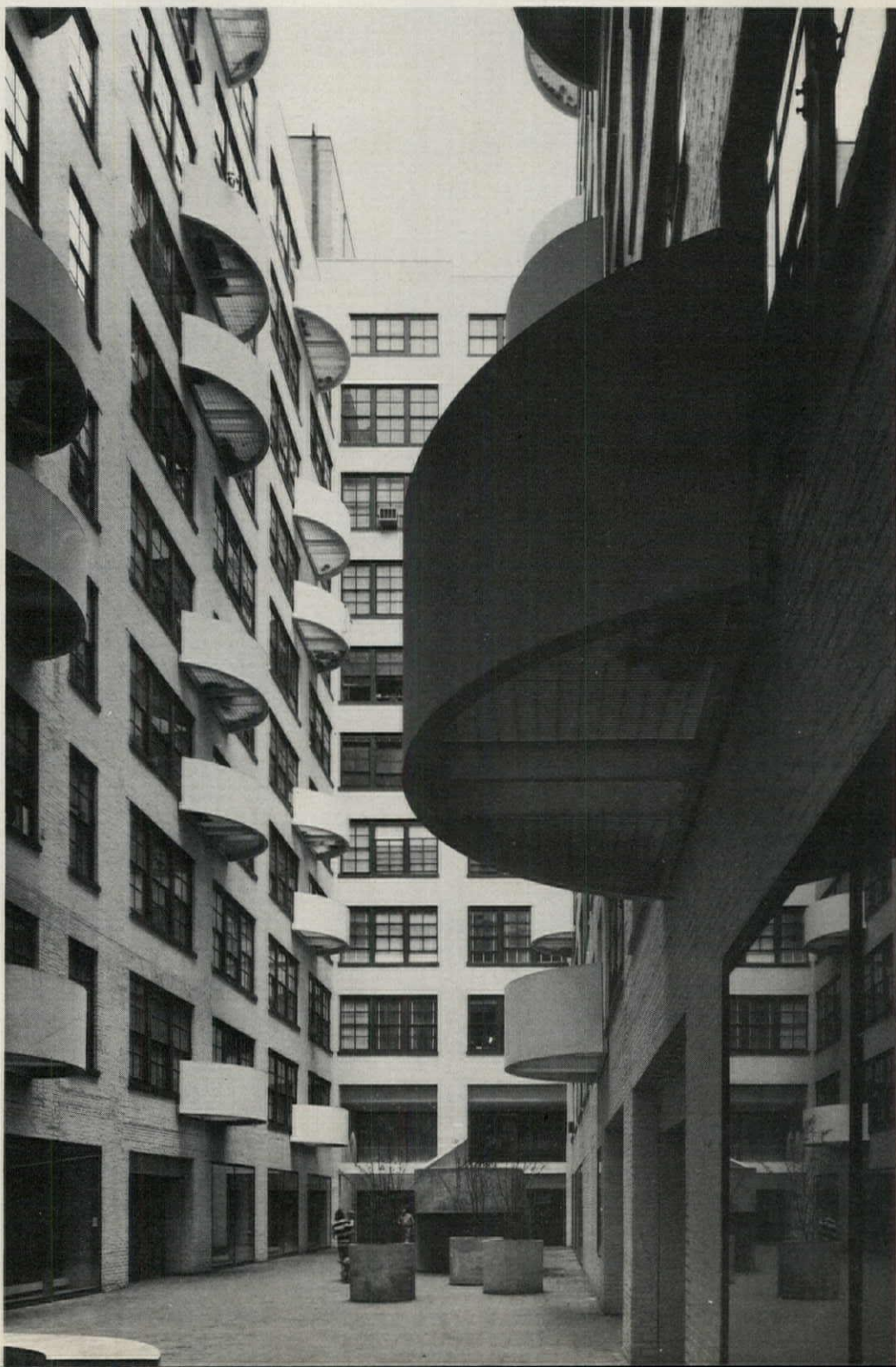
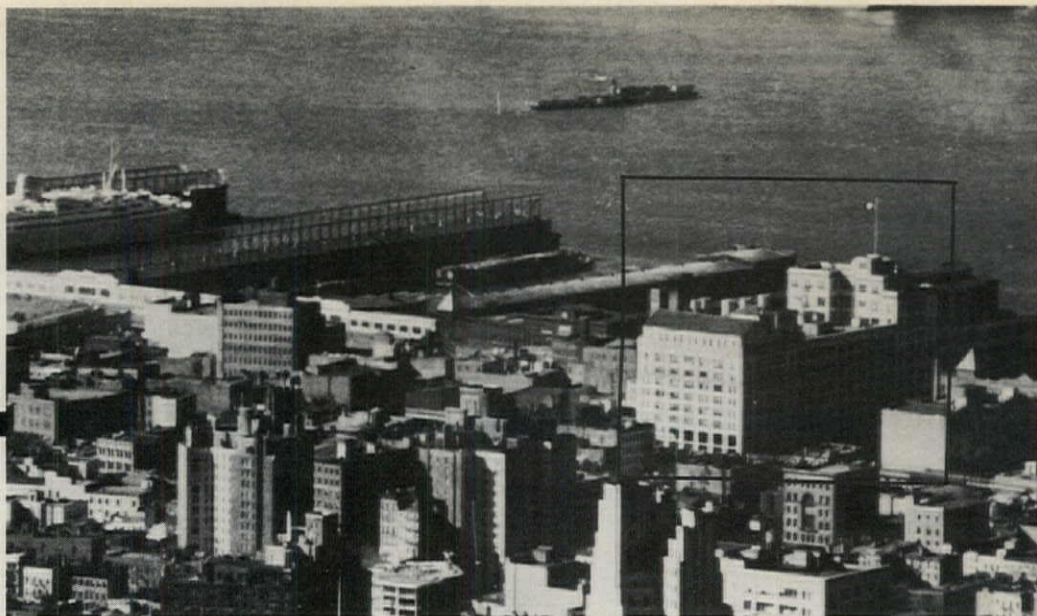
Richard Meier

Builder:

The Graphic Starrett Co.

Owner:

Westbeth Corporation Housing Development Co. Inc.

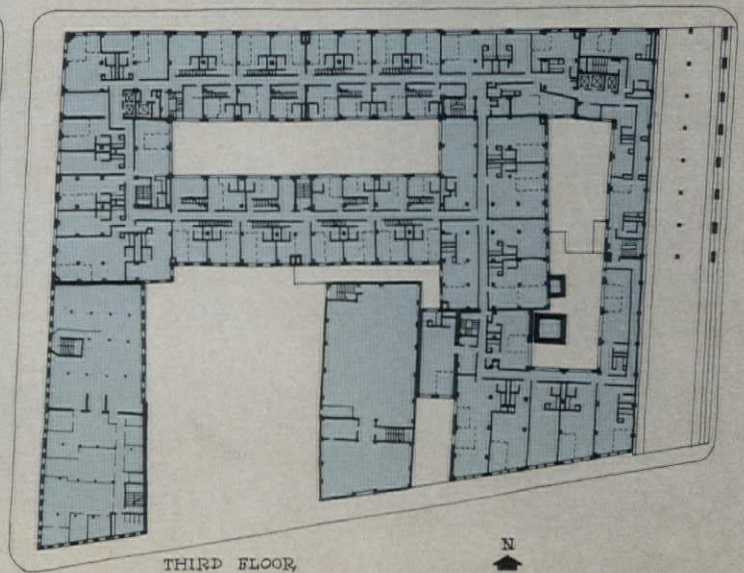
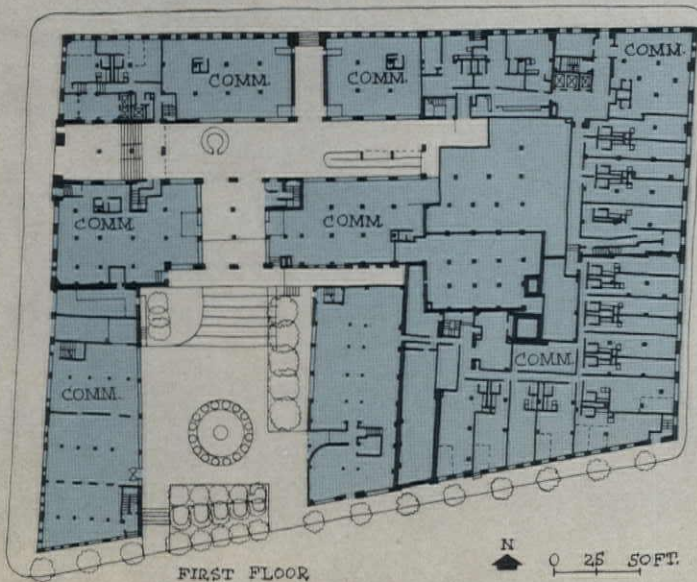


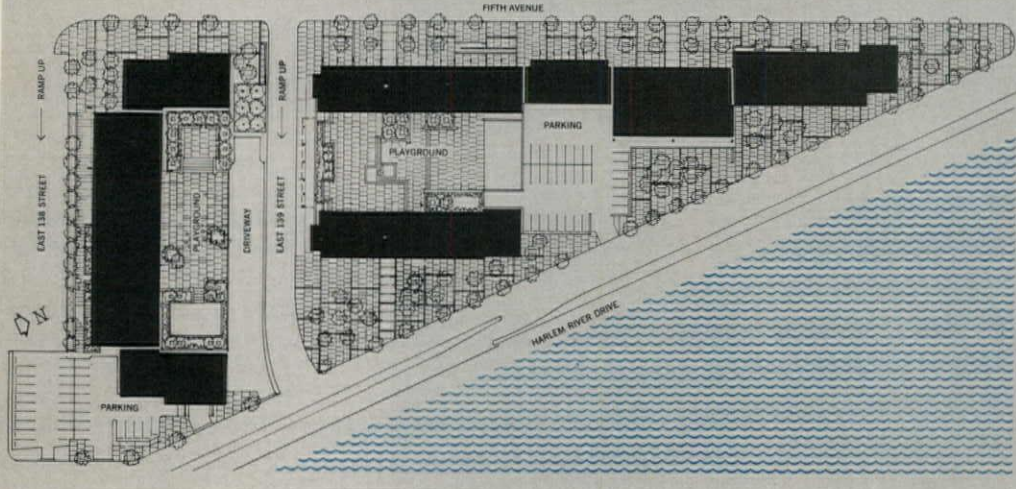


Bath and kitchen enclosures are the only partitions built into the apartments (photo, left). To satisfy City and FHA room-count requirements, the architect was permitted to show theoretical rooms as dotted lines on the plans. Mobile closets can serve as room dividers; or tenants may build their own walls and closets. Despite the massive proportions of the buildings, there is a feeling of openness throughout the project—due in great part to a 13,000 sq. ft. community area with central fountain (photo, below) for which two buildings were razed.



Apartment layouts take on a variety of shapes. Organization of duplex units around the converted courtyard eliminated the need for through-corridors on all floors except the third, sixth and ninth. All entry levels for duplex apartments are on the corridor floors (plan, below right). The entry levels are small, and have stairs leading either up or down to the second levels (not shown). Each duplex's second level runs through (north to south) below or above its own entry and that of an adjacent apartment. Plan at left shows the three street level entrances to the complex.





2 a riverside co-op in New York City

Riverbend Housing (photo, above) is markedly different from neighboring apartment complexes on the East side of Manhattan. For one thing, heights of its eight buildings are varied to lend interest to the skyline. For another, the strong line of its two-story-high balcony/corridors give the facades a most un-New York look. These corridors connect the interiors of the tower buildings to the exteriors of the low-rise structures (photo, right),

and also lead to private patio entrances to the duplex units (lower plan and photo, opposite page).

Duplex units are in the low-rise buildings, single-level apartments in the towers. When the project opened average downpayments were \$414 per room and monthly carrying charges were \$30 per room.

Riverbend Housing received an Award of Merit in the 1971 Homes for Better Living program.

Architect:

Davis, Brody & Assoc.

Builder:

HRH Construction Corp.

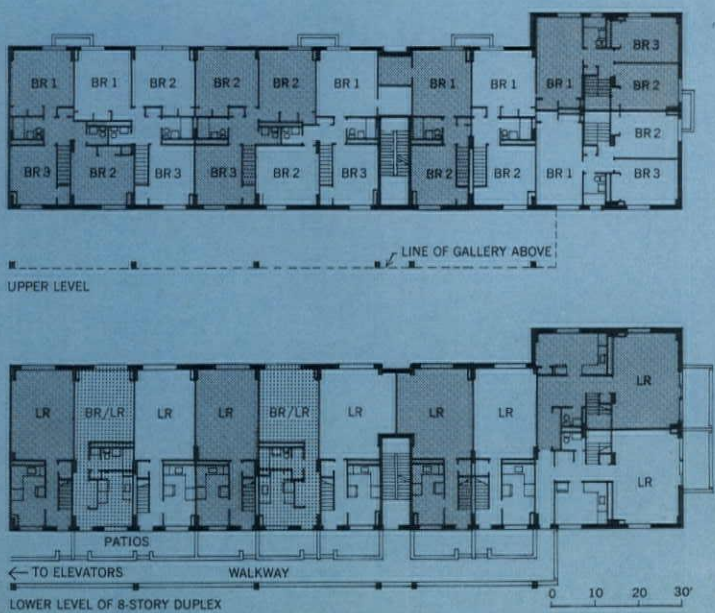
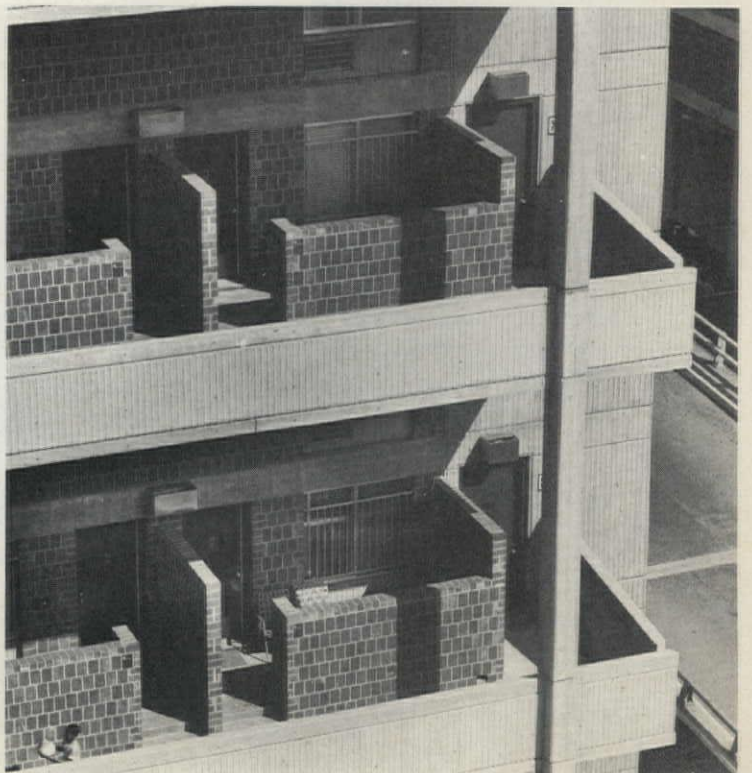
Owner:

Riverbend Housing Co.





Riverbend Housing's site is bisected by a ramped approach to the Harlem River Drive (photo, above and plan, opposite page). To tie the two areas together visually, courts were erected, at the ramp's level, between buildings on either side of the ramp; they seem to bridge the roadway. Floor plans below are of duplex apartments in the low-rise buildings.



3 a remodeled garage in Boston

The structural characteristics of this old Boston garage (photo, top right) precluded conventional apartment layouts.

First, there was a double concrete ramp which wound its way up to the top floor; its removal would have been unduly expensive. Second, the 80 ft. depth of the building was too great for economical floor-through units. However, there was one saving factor: 12 ft. ceiling heights.

To overcome the first problem, apartments in the ramped section of the building were fitted into radiating segments encompassing both ramps (plan, above). Floors were leveled, but the sloping ceilings maintained (bottom photo, opposite page).

The 80 ft.-depth of the building was split into two sections of apartments. Each unit is the size of an efficiency apartment but with its living and sleeping areas separated by the kitchen-bathroom core.

Monthly rents range from \$160 to \$350 and include use of rooftop swimming pool, saunas, exercise rooms and a social room.

Architect:

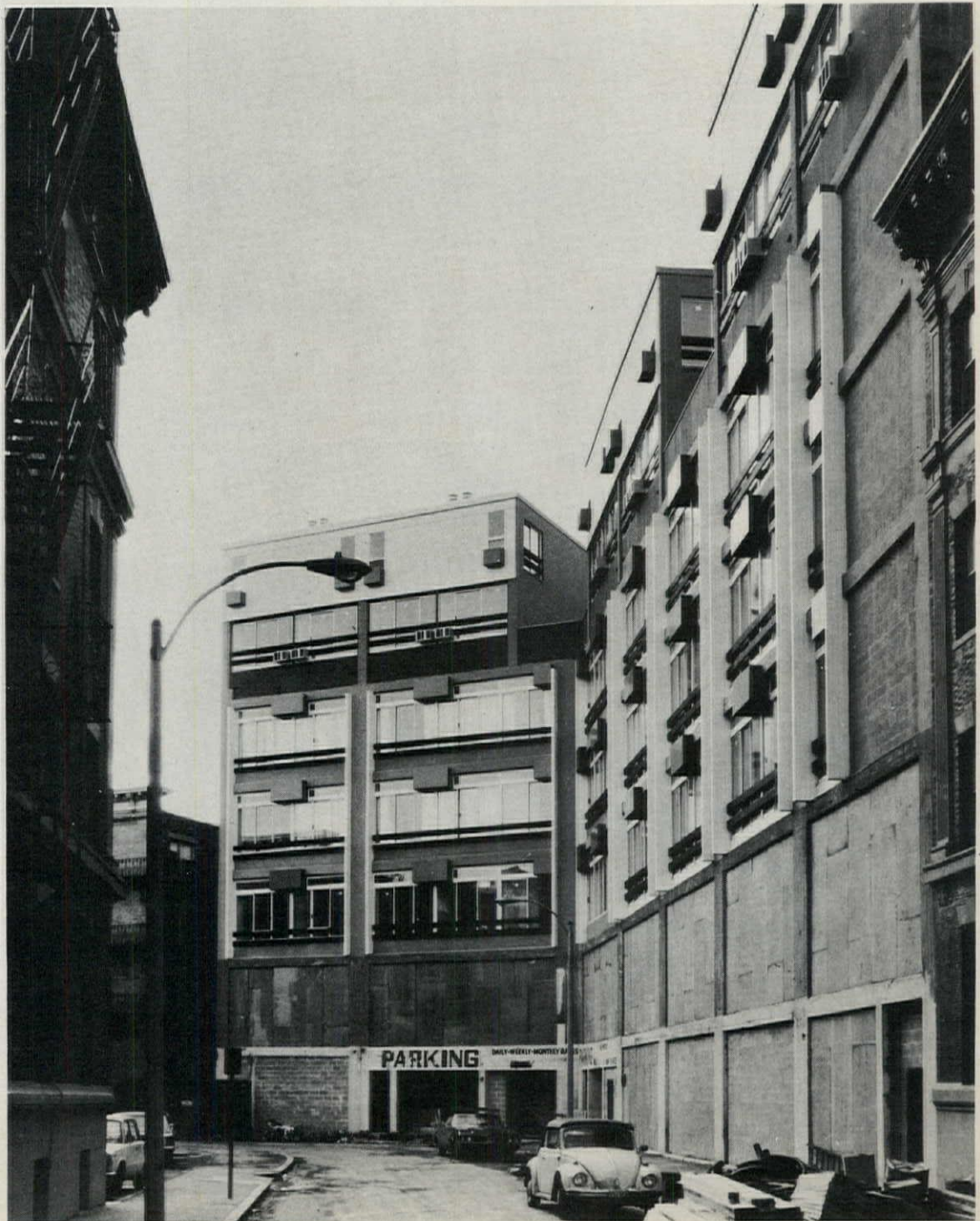
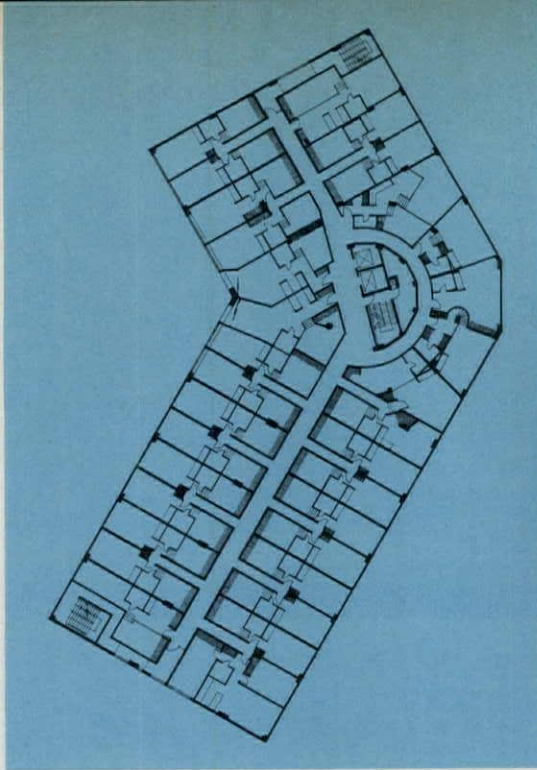
Anderson Notter Assoc. Inc.

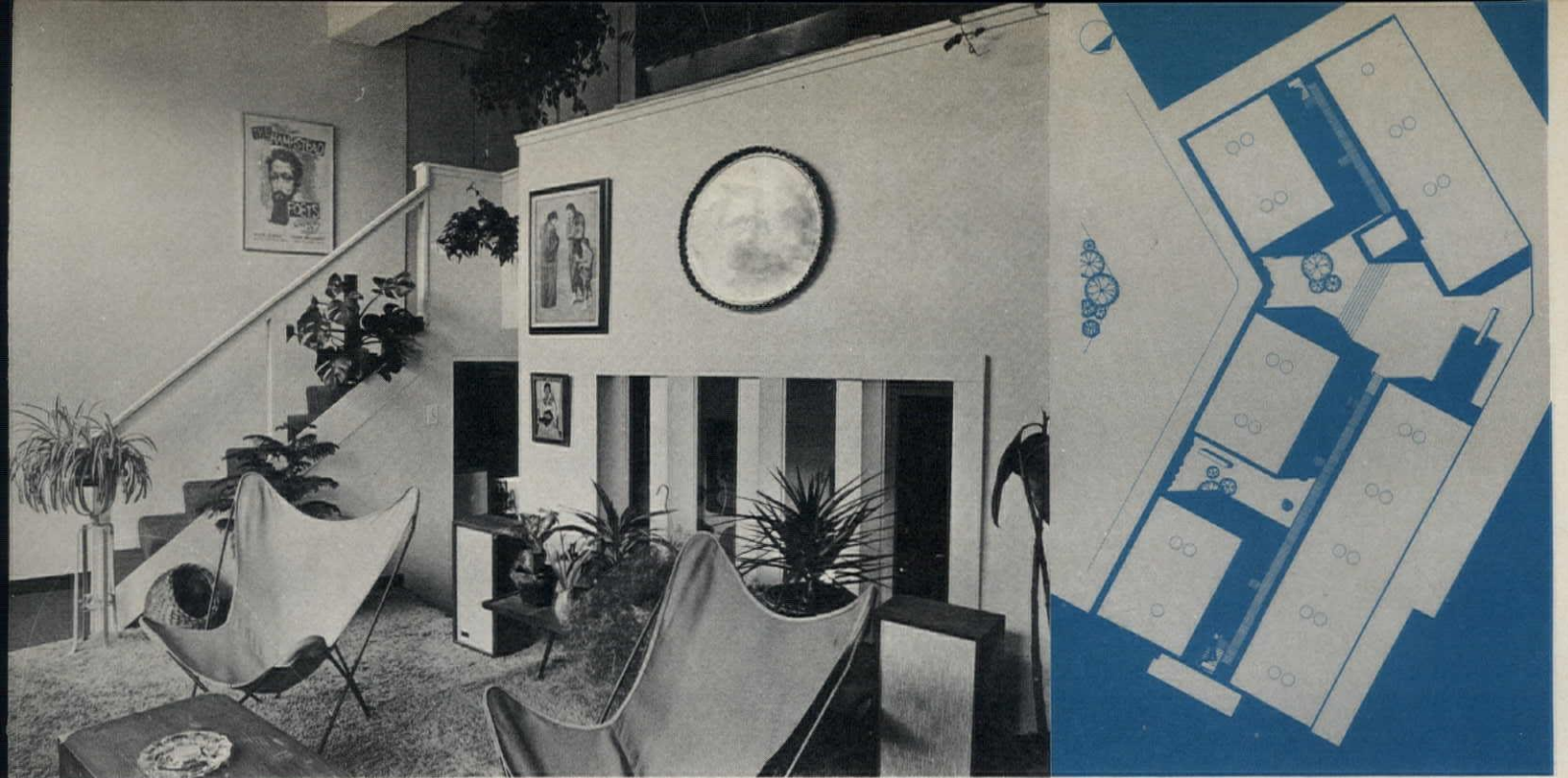
Builder:

Kirkland Construction Co.

Owner:

12 Stoneholm Street Assoc.

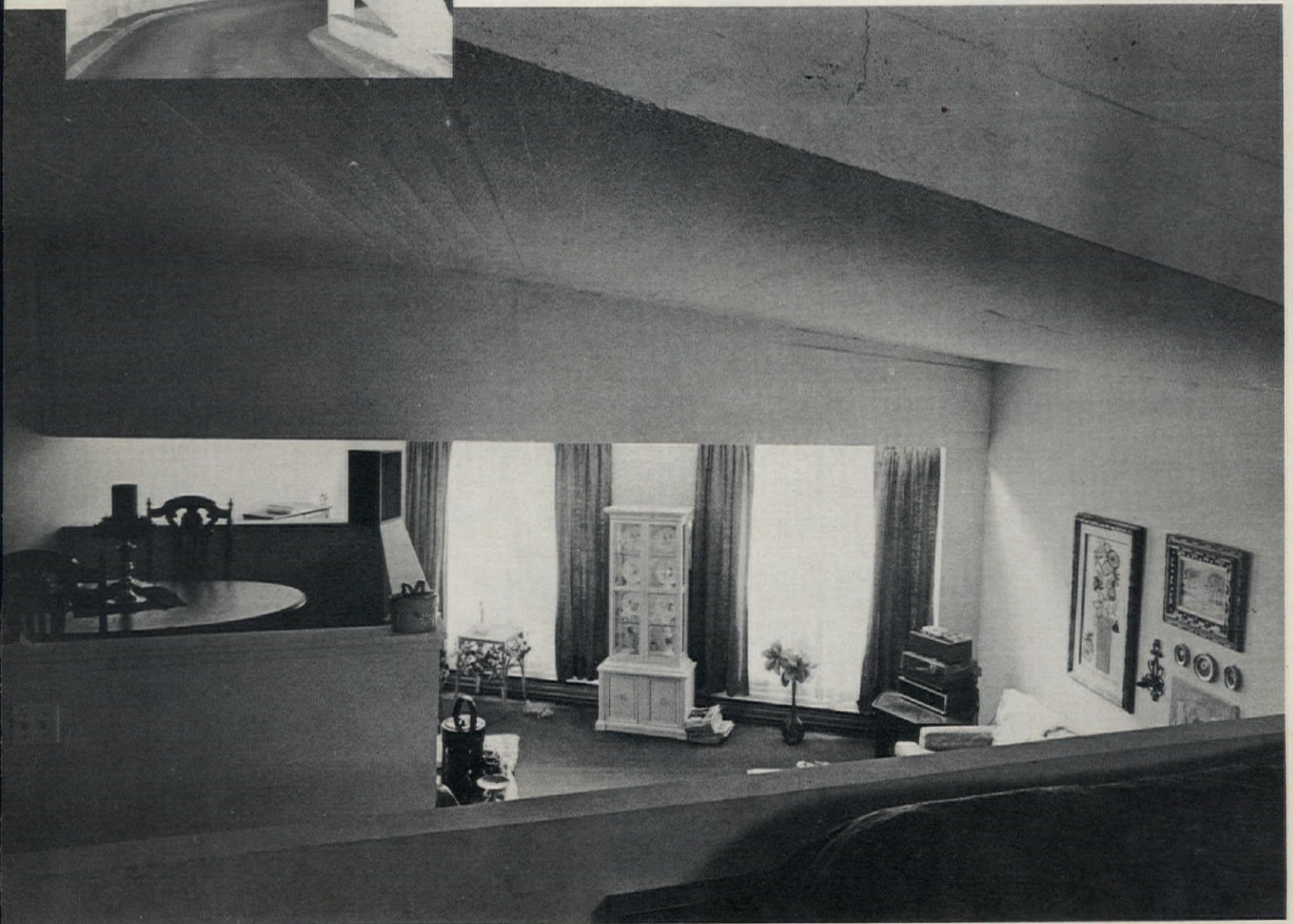
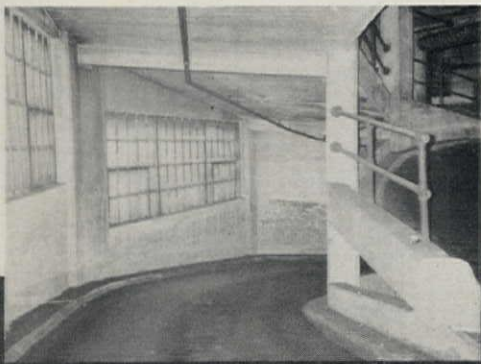


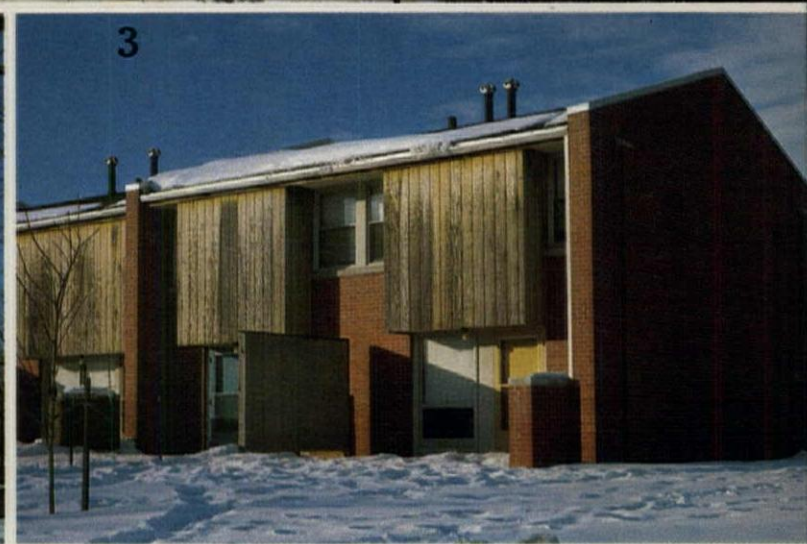


Multi-level units (photos, above and below) have upper-level sleeping areas that open to living room and window wall. Larger unit (photo, below) also has a small dining area under the sloping ceiling (photo, left).

The apartments occupy the original upper three floors of the building; the lower two floors were left intact for tenant parking. Additional duplex units (photo, above) were created by building townhouses formed by bottom of ramp on the roof.

PHOTOS: JONOTHAN GREEN





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Fuel costs are lower. Andersen Windows are made with a solid core of wood—one of nature's best insulators. Our weathertight construction and welded insulating glass (optional) complete the tight design against heat, cold, dust and drafts.

Andersen Windows will cost less over the long run, and their beauty lasts as long as the building. That's why it pays to specify the best.

1. Minneapolis Housing for the Elderly

The architects wanted to make this large, 290-unit housing project into a real "home" for the residents. So Bettenburg, Townsend, Stolte and Comb, Inc. created a living community with friendly courtyard and recreation areas.

Adding warmth and pleasantness to the surroundings are Perma-Shield Fixed and Casement Windows equipped with welded insulating glass which seals out cold Minnesota winters and keeps residents snug and warm.

2. Columbia Court Public Housing

Precast concrete "shadow panels" give this 90-unit complex in Muskegon Heights, Michigan its distinctive look.

The architects, Haughey, Black & Associates, designed special recesses into the panels where Perma-Shield Casement windows fit snugly.

The white vinyl sheathing on the outside blends well with the smooth-surfaced concrete. These windows can be opened straight out, allowing elderly residents to clean both surfaces from the inside—another cost-cutting benefit of Andersen Windows.

3. Family Housing Project

Hackner, Schroeder, Roslansky & Associates received an award from the Wisconsin Chapter of the A.I.A. for this series of townhouse groups in La Crosse, Wisconsin.

They were cited for the use of materials which added dignity and distinction to these low-cost dwellings. Among the materials used were Andersen Beauty-Line™ and Narroline™ Windows.

Beauty-Line windows combine a fixed upper sash with a ventilating, awning-style lower sash. They can be used singly or in groups, making them as versatile as they are attractive.

4. Award-winning Low-Rent Apartments

Located in Herman, Minnesota, this group of one-story 4-plexes received an award from the Minnesota Chapter of the A.I.A. for being the best representative example of the theme of "Involvement."

The architects, R. F. Ackermann and Associates, carried the residential character of the neighborhood into these apartments with a warm and simple design.

Adding to this feeling are graceful gliding doors by Andersen. They open onto comfortable, private decks. Andersen Beauty-Line Windows provide picture window beauty at a practical price.

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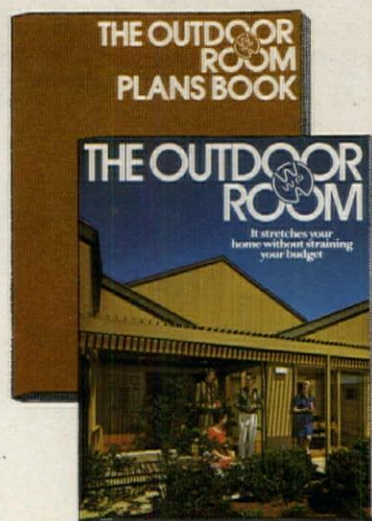
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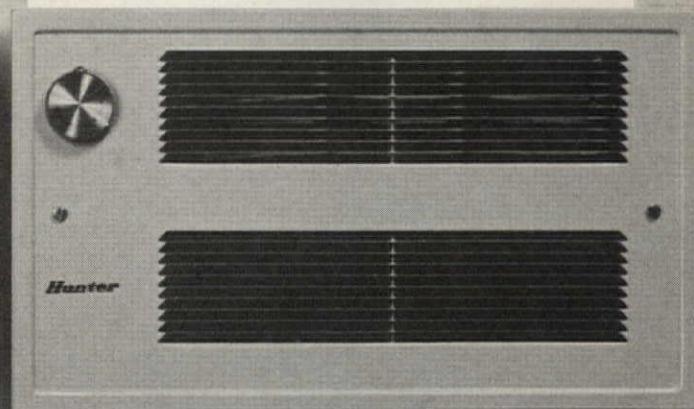
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Don't prejudge. The narrow Hunter Hide-Away is bigger than it looks. It pours out plenty of heat for most rooms. It gives a choice of three wattages (1500, 2000, 2500) in one size. It keeps a cool grille at high heat, sells at budget prices, installs easily, works with unit or wall thermostat. It also comes with chrome grille (as well as standard beige) in 1250 and 1500 watts for bathrooms. Can be surface-mounted in mobile and modular homes using accessory kit. So down with prejudice! Be narrow-minded . . . by keeping the Hunter Hide-Away on your mind.



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HUNTER HIDE-AWAY Electric Heater

Hunter has the complete line in electric heat

What's new on wheels?

Construction equipment changes little in looks and function from year to year. Nevertheless there are constant innovations—subtle but important: more stability, improved maneuverability, larger load capacities, etc. Here are some of the major manufacturers' current offerings, plus a bonus: a look at 1972 pickup trucks.



Sideloader can maneuver long loads like lumber down a narrow road or factory aisle. Jacks stabilize truck while mast extends sideways with load. Allis-Chalmers.
CIRCLE READER SERVICE 275



Rough terrain lift truck is rated at 8,000 lbs. Here it carries three tons of 12'-long concrete ribbing over a rugged mountain road. Hyster.
CIRCLE READER SERVICE 276



Precision handler has 14' or 17' mast that tilts 15° or 7° forward, 12° rearward, and shifts 3" right or left. It lifts to full height 5,000 or 2,500 lbs. John Deere.
CIRCLE READER SERVICE 277



Tall-masted forklift hoists loads 28' in the air, has a capacity of 5,000 lbs. I-beam steering axle and differential lock in drive wheels offer good traction in soft ground. International Harvester.
CIRCLE READER SERVICE 278



Versatile loader is only 5' wide, gets between trees or into tight areas, turns 360° in its own 6½' length, and lifts 1500 lbs. up to 9½' high. Besides lifting with the adjustable pallet fork or dumping with the bucket (one of 17) shown, it is also a dozer, drills post holes, shears trees, plows snow, digs trenches and sweeps streets. Case.

CIRCLE READER SERVICE 279



Compact loader goes through openings just 5' wide, needs only 6' of clearance ht. Yet it can lift up to 1500 lbs. or 20 cu. ft., and can be used with an 8' backhoe. Bucket tilts 45° to dump from maximum height of 9½'. International Harvester.

CIRCLE READER SERVICE 280



Medium-sized loader is also maneuverable. It can lift 1700 lbs. up to 10' high, has a 37-hp engine, comes with any of seven large buckets. Yet it can work in close quarters, may be used for site cleanup and grading as shown. John Deere.

CIRCLE READER SERVICE 281



Wheel loader, working in an unpaved area, here uses hydraulic sideboom to lower sewer pipe into trench. Articulation reduces repaving or regrading in established areas because there's less traffic from storage to trench. Loader can also be used to set manholes, plow snow, or clear streets of litter. Allis-Chalmers.

CIRCLE READER SERVICE 282



Heavy-duty loader can lift 4500 lbs. up to 8½' dump height. Rear-mounted 94-hp. diesel (or 90 hp. gas) engine balances loads, gives driver good visibility. Loader maneuvers well because of rear-wheel steering, handles rough ground well because of four-wheel drive and big tires. International Harvester.

CIRCLE READER SERVICE 283

Articulated loader is engineered for fast work: 40° articulation lets it turn in 18' radius, decreasing the time for each cycle; it fills bucket in under 5 secs, lifts it to full 11'7" height in 6.1 secs (9½' dumping height in less); and it can run up to 25½ mph. A 48° rollback keeps loads from spilling out of bucket. Case.

CIRCLE READER SERVICE 284





Streamlined design of the 1972 "Ranchero GT" features bold stripes down the sides, racing mirrors (one operated by remote control) painted the body color, bucket seats, four-on-the-floor, and dual air scoops on hood. The '72 models are also 3.2" wider and have a 4" longer wheel-base, thereby increasing the box capacity, plus wider treads and bigger 15" wheels and tires. Ford.

CIRCLE READER SERVICE 285



Comfortable cab is prime feature of "Custom" and other '72 models (8 of 10 pickups are also used for personal transportation). Other features: curved side windows add 4" to shoulder room in cab; doors are 2" wider; pedal pads fit size 14 feet; seats are higher; new suspension system smooths the ride; fresh-air is better distributed; vision is better through larger—and slanted—windshield and rear window; and interior noise is reduced by extra insulation and relocation of wipers and heater motor to outside, under the hood. Dodge Div., Chrysler.

CIRCLE READER SERVICE 286



Increased power is featured by the '72 Jeep trucks with V-8 engines available for the first time. Other features are: a new and quieter power-steering pump, optional four-speed floor shift, 200.6" length, 78.9" width, 7.9"-8.9" minimum ground clearance, and 52' minimum turning circle. Jeep.

CIRCLE READER SERVICE 287



Imported model is powered by a 96-hp. single-overhead camshaft 4-cyl. engine, has synchromesh four-speed transmission with floor shift. "Datsun" pickup is 170.3" long, 62.0" wide, has 7.9" of road clearance, and turns in a 34.2' circle. Nissan Motors.

CIRCLE READER SERVICE 288



Improved durability, rather than new styling, is featured on "Fleetside Cheyenne." New acrylic enamel paint prevents exterior from chipping or spotting, box is electroplated with primer coat to resist corrosion, and engine is redesigned to take no- or low-lead fuel. Other features: front disc brakes, double-walled (full height) box and cab, 2- or 4-wheel drive, one-hand tailgate, steel fender liners, and a built-in lockable tool box just in front of rear wheels. Chevrolet.

CIRCLE READER SERVICE 289



Porch enclosed with Thermopane made of Tuf-flex tempered safety glass in Pella sliding doors by Rolscreen Company.

**If you
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Thermopane with
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don't knock it...
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Tuf-flex[®] tempered safety glass seldom breaks. If it ever does, it breaks into pebble-like pieces less likely to cause serious injury.

For a much easier way to make a hit (especially with economy-minded customers), combine the safety of Tuf-flex

with the comfort and fuel savings of Thermopane[®] insulating glass units. Result: warmly appreciative customers.

Thermopane patio door units made with Tuf-flex are available only from Libbey-Owens-Ford Company, Toledo, Ohio 43624.



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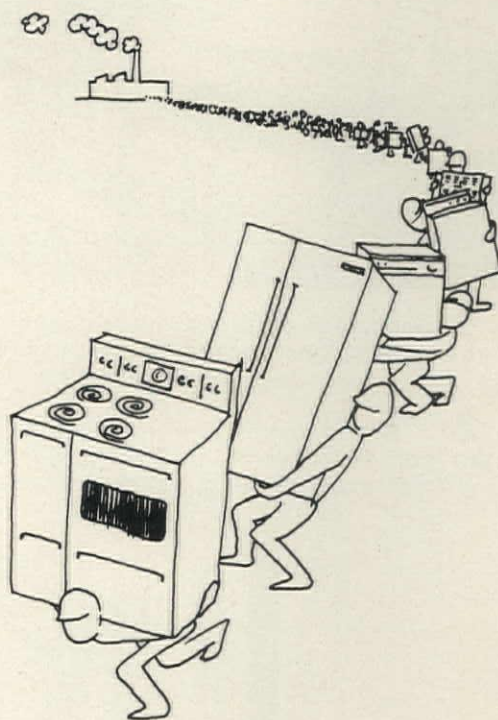
Like self-cleaning ranges in every model style. Built-ins, drop-ins, and slide-ins. Cabinet ranges, hi-los, and wall ovens. All using the complete pyrolytic cleaning system.

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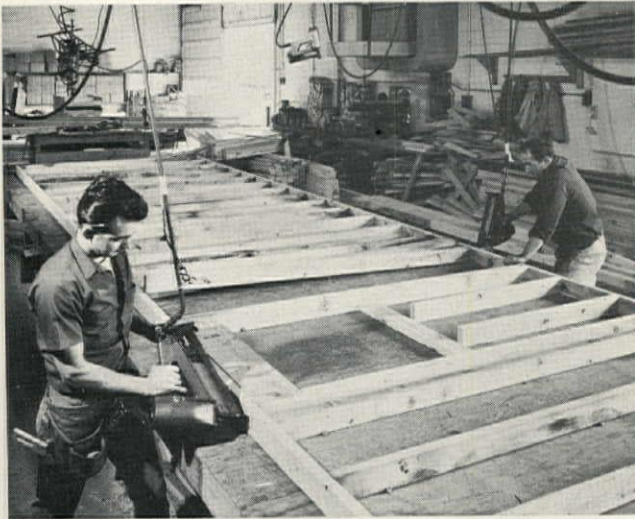
If it cooks food or refrigerates food or washes dishes or washes clothes (or dries them) or heats a house or cools it, we sell it.

We hustle, and for a very selfish reason. We really want your business. And we'll hustle to keep it.



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If you're looking for reasons to specify a senco automatic fastening system, here are 6 for openers.



1. Senco automatic nailers and staplers are the lightest, best balanced, most trouble-free fastening tools in the industry.

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4. The unique Senco Construction Specialist Program, serving both in-plant and on-site operations, factory trains construction-experienced sales and service representatives *just to help you.*

5. Senco people are at your service to help you engineer high productivity fastening systems with Senco equipment.

6. Senco's long established scientific quality control and laboratory testing program assures you of tools and fasteners of consistently high performance — provides verified data for reliable engineering design.

For more facts on the complete line of Senco portable automatic nailers, staplers and fasteners, and on how Senco can help, contact Senco Products, Inc., Cincinnati, Ohio 45244. Dept. 109



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massive study of 184,122 sales leads from House & Home readers confirms that sales action in housing & light construction comes from every segment of the industry

To identify all the important people in housing and light construction who are active in the selection of building products, materials, and equipment, House & Home followed up 184,122 advertising inquiries from its reader service cards and received a 31% return involving 57,327 inquiries.

Survey questions were designed to determine what, if any, "sales actions" were taken as a result of readers having seen advertisements in several issues of House & Home.

For the purpose of this study, "sales actions"—that is, those actions bringing products and

prospects closer to a sale—have been defined as *specifying, recommending, approving, purchasing, and still investigating further.*

For each sales action, of course, the unknown multiplier is the number of residential or other units for which the sales action was taken. For example, a single *purchase* mention could involve a 10 house development, a 280-unit apartment complex, or anytime in-between.

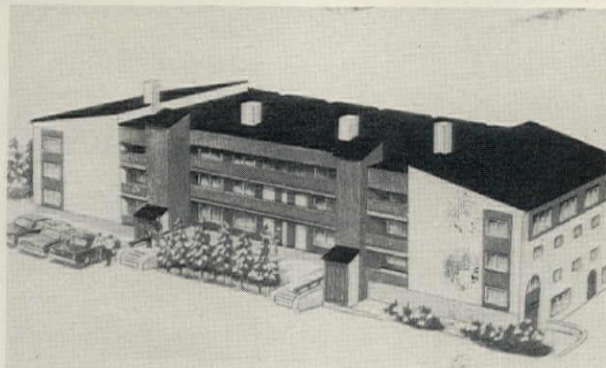
Results indicate in the clearest possible manner that sales action comes from every segment of the industry, as shown in the table below.

Industry Classification	Literature Requested by Readers Surveyed	Literature Requested by Survey Respondents	Literature Received by Survey Respondents	SALES ACTIONS TRIGGERED BY ADVERTISING						Sales Actions as % of Literature Received
				Specified Product	Recommended Product	Approved Product	Purchased Product	Still Investigating Product	Total Sales Actions	
Architects & Designers	37,609	13,073	11,584	1,940	1,917	1,321	397	3,039	8,614	74.4%
Builders & Contractors	78,279	23,001	19,939	1,781	2,251	2,069	2,518	6,604	15,223	76.3%
Commercial/Industrial	3,269	1,071	934	74	105	54	57	334	624	66.8%
Engineers	5,908	2,254	1,959	151	237	118	105	627	1,238	63.2%
Financial	2,976	1,165	1,051	57	115	48	57	364	641	61.0%
Government	3,643	1,645	1,432	69	146	87	60	411	773	54.0%
Realty	7,616	2,514	2,262	152	249	207	147	850	1,605	71.0%
Retail Dealers	3,689	889	752	80	92	64	97	221	554	73.7%
Subcontractors	6,520	1,811	1,574	132	178	141	203	490	1,144	72.7%
Wholesale Distributors	2,071	658	564	32	64	40	40	189	365	64.7%
Others not identifying self	32,542	9,246	8,013	555	870	560	434	2,536	4,955	61.8%
TOTAL	184,122	57,327	50,064	5,023	6,224	4,709	4,115	15,665	35,736	71.4%

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"It is more than another appliance; it is a conversation piece. The lady of the house gets a sparkle in her eye when our leasing agent tells how the husband can charcoal grill steaks in all kinds of weather" . . . W. P. Jennings, Partner, The Tara Company . . . Knoll Apartments, Indianapolis, Indiana.



"The Jenn-Air Drop-In Combination cooking center is ideal for our use. By combining the oven, vent hood, burners and char broiler in one unit, space was saved and installation costs were reduced because only one electrical connection was needed" . . . Charles F. Bush, Hyder & Bush Construction Co., Ski Trail Condominiums, Steamboat Springs, Colorado.



"In reviewing virtually hundreds of items we selected the Jenn-Air barbecue unit as our exclusive feature. We have found that it has been an extremely helpful tool in the leasing of apartments and we believe that we will find that it will help to keep people in our projects longer than they might have ordinarily stayed" . . . Richard Lane, President, Environmental Research Associates, Inc., Plano del Sol, Dallas, Texas.

Join the developers and builders who are discovering a profitable new way to capture prospect imagination . . . and close the deal. There's a Jenn-Air built-in barbecue to fit your plan. Plus a complete program to help you merchandise it. Drop us a line today and do a little discovering of your own.

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Here are cabinets to satisfy the most discriminating customers — with elegance suitable for any luxury home, apartment or condominium. In the kitchen, where the sale is so often made, Scheirich Kingswood Classic underscores the kind of living expected of the new owners. They'll be flattered — and responsive to the suggestion. Close inspection will confirm their first impression of tastefulness and fine quality because these are truly cus-

tomized cabinets — after the finish is applied each piece is carefully hand wiped, then burnished with steel wool to emphasize the rich warm color and extraordinary grain. Finally, two coats of Relvar are applied for permanence. The imposing architectural mood of Kingswood Classic is deftly complimented by the use of heavily scaled door and drawer pulls in an antique "pewter" finish.



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Factory-grouted tile sheets speed both installation and cleanup

Each sheet is about two sq. ft. in area and, obviously, much easier—and speedier—to work with than the 8 to 16 tiles it contains. Not only do tiles go up faster, but 75% of the grouting has been done, and once tiles are up, grouting can start immediately.

Furthermore, the silicone grout used is applied with a gun, rather

than with the usual trowel, so there is less mess at the end of the job. Any cleaning necessary is done with a cheese-cloth pad and denatured alcohol.

Some other advantages of the "Redi-Set" tile sheets are shown above. First, the silicone grout is extremely flexible, so sheets can be bent to fit. Then, the grouting holds

tiles together during cutting or drilling. The nozzle makes corner work easy, and can be removed from the threaded tip and replaced with a caulking-sized nozzle. Grouting can be applied with a hand gun or with one powered by an air tank (shown) or a compressor.

Other features: white grouting cannot yellow, stain, or mildew.

Nor will it powder or crack out, even pin holes seal themselves, and it takes only four hours to cure.

Tiles come 4¼" wide and 4¼", 6", or 8½" long in bright, matte, and crystalline glazes, in a wide range of colors. American Olean, Lansdale, Pa.

CIRCLE 250 ON READER SERVICE CARD



Hot water dispenser can be installed right on the sink as shown, perhaps on an existing spray hose hole, or on a counter with the chrome-plated spout extending over the sink. A thermostatic control is set to produce near-boiling water—from 150° to 190°—instantly. Heated by a 750W heater, water is stored in an insulated half-gal. tank below the sink. Control knob on KitchenAid dispenser is a gold color. Hobart, Troy, Ohio.

CIRCLE 251 ON READER SERVICE CARD

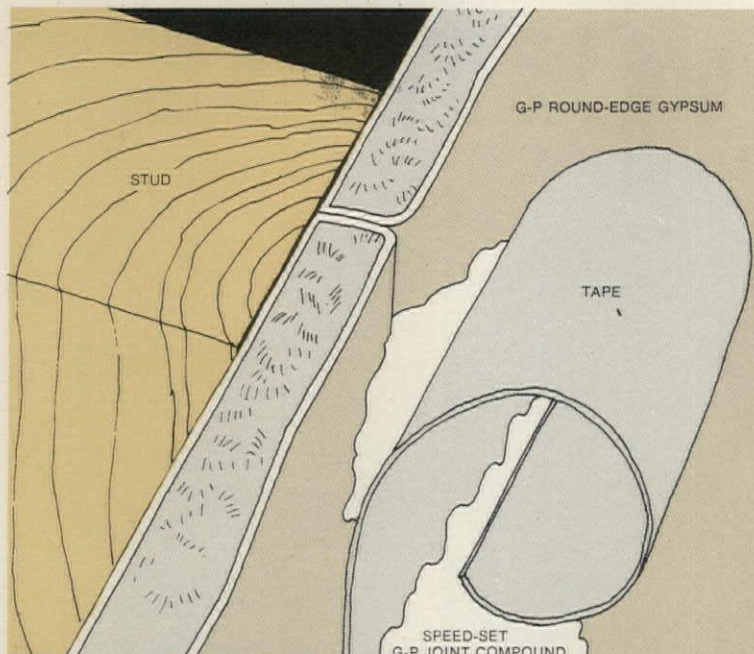


Soaking tub looks like a traditional Oriental bath. This one, however, is of fiberglass-reinforced polyester. A molded-in seat near the bottom of the 32"-deep tub lets the bather immerse his whole body. But the 40" square takes up only the floor space of a stall shower, can be used as a shower base, since fittings go on the wall. Available in manufacturer's colors—plus tangerine red. American-Standard, New Brunswick, N.J.

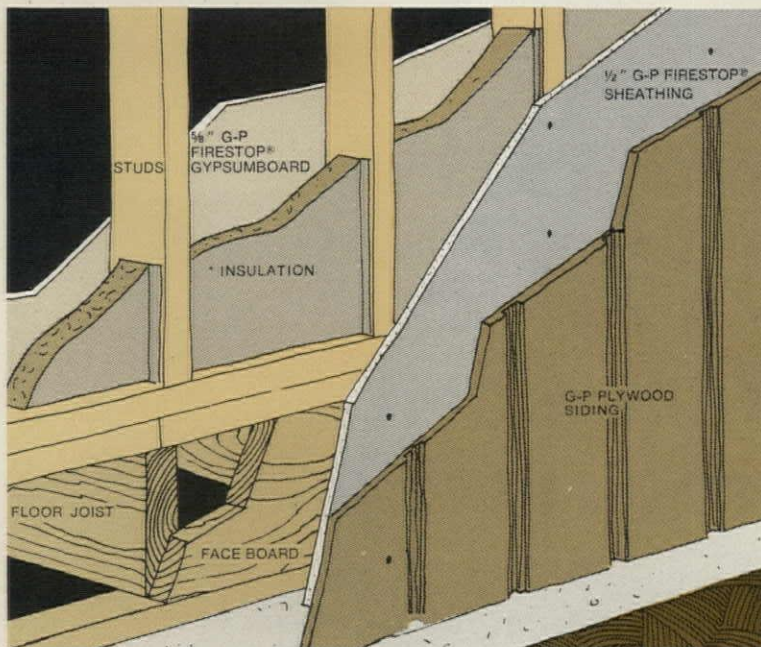
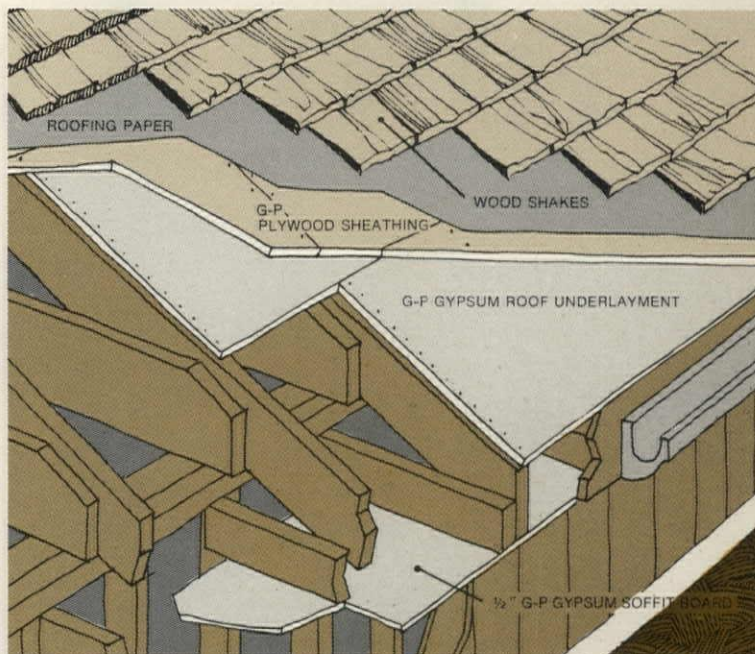
CIRCLE 252 ON READER SERVICE CARD

G-P has the answer to economical fire and sound control in modular construction.

Round-edge Gypsumboard System. G-P's round-edge board minimizes ridging and beading so you can forget about call-backs. And because this board requires $\frac{1}{3}$ less joint compound than other special edged boards, it cuts down on costs. The other part of the system is G-P's new Speed Set. This high strength joint compound gives you a smooth monolithic surface. In addition, it has a fast setting time, which reduces production time.

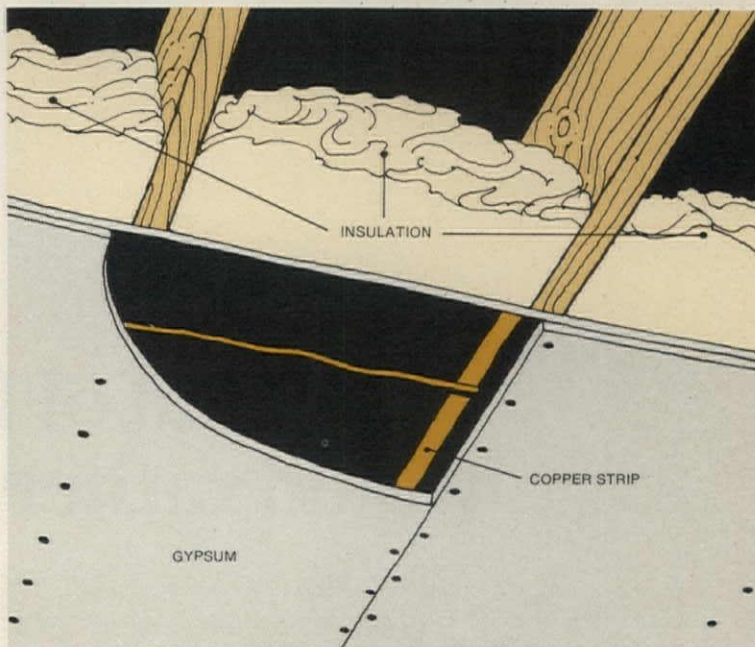


Gypsum Roof Underlayment. It's $\frac{1}{2}$ " thick gypsumboard with a fire-resistant core and special paper that gives excellent fire protection for roof construction. Gypsum Roof Underlayment is placed over the rafters with plywood or strip sheathing laid over it. Then a wood shake or any other kind of roof can be put up. And Gypsum Roof Underlayment will prevent flames from burning through the roof structure.



*INSULATION NOT REQUIRED TO MEET FIRE RATINGS

Exterior Wall System. G-P's FIRESTOP® gives you a one-hour fire rating in exterior walls. $\frac{5}{8}$ " FIRESTOP® gypsumboard is applied over wood studs with insulation. On the outside wall, $\frac{1}{2}$ " FIRESTOP® gypsum sheathing is applied and then covered with $\frac{3}{8}$ " (or $\frac{5}{8}$ ") G-P plywood siding.



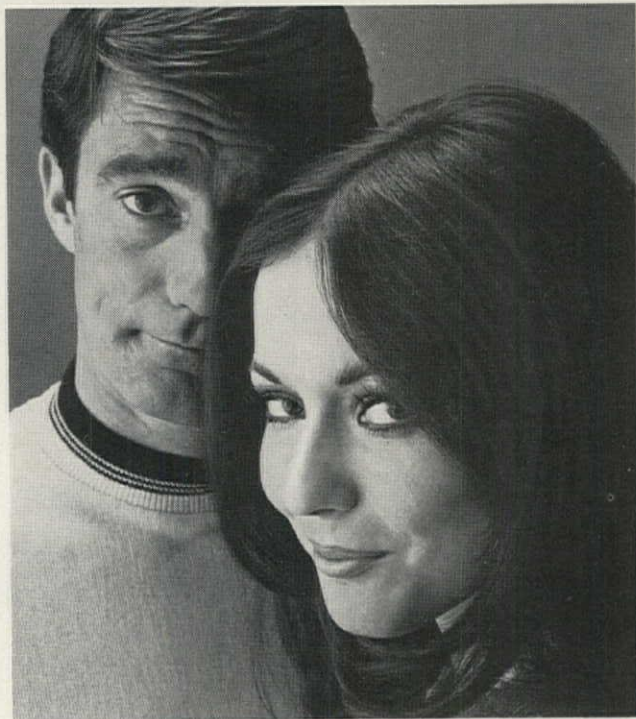
Radiant Heat. With G-P's radiant heat and ceiling system, your heating and ceiling can be installed in one operation. This system goes up as easily as regular gypsum wallboard. And because it is gypsum, it's fire-resistant. Factory supplied panels are nailed to the ceiling framing members and the attached pigtail wires are connected. The joints are then taped and finished. And the surface is painted. Since there are no wires embedded in the panel, it can be cut to any desired length.



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GYPSUM DIVISION Portland, Oregon 97204


CIRCLE 131 ON READER SERVICE CARD

What many of you don't know about women.



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It's worth knowing — but many builders don't. Women prefer gas cooking. We have a detailed, impartial report that proves it. Based on a national survey made by Oxtoby-Smith, the well-known independent research firm. So when you're equipping the kitchen, remember — all other things being equal, more women prefer the home with a gas range.

Gas gives you a better deal. AMERICAN GAS ASSOCIATION, INC. 



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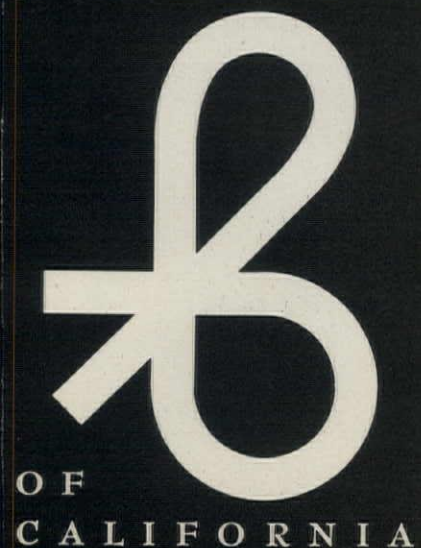
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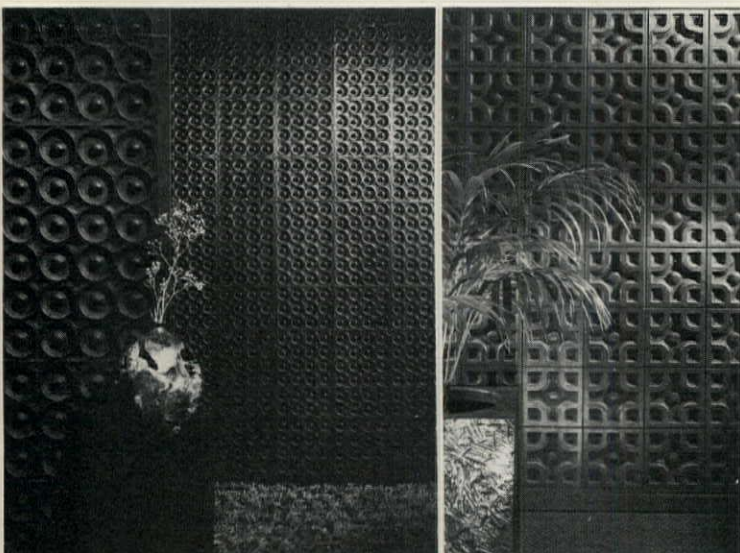




Striped walls (left) are covered with a tufted fabric made of continuous filament fine denier nylon by DuPont and backed by flexible latex. The surface is resistant to abrasion and easy to maintain, and the backing reduces noise and increases insulation value. "Uptrend" covering, 48" wide, come in stripes, geometrics, and solids, all designed to hide seams. Trend, Atlanta, Ga. CIRCLE 205 ON READER SERVICE CARD



Textured stripes (right) have a three-dimensional look. They are rayon and linen fibers that have been laminated to a spunbonded olefin (DuPont's "Tyvek") backing. The olefin looks like a fine matte paper, but it is tough and scrubbable, will not support mildew, and can be easily stripped. Available in more than 40 colors and patterns. DuPont, Wilmington, Del. CIRCLE 206 ON READER SERVICE CARD



Carved redwood comes in panels that can be applied to walls, furniture, or doors, or used as screens. Carvings—geometric or abstract shapes and patterns like the two shown above—are sculpted in 3/4" or 2"-thick vertical grain all heart redwood that may be left unfinished

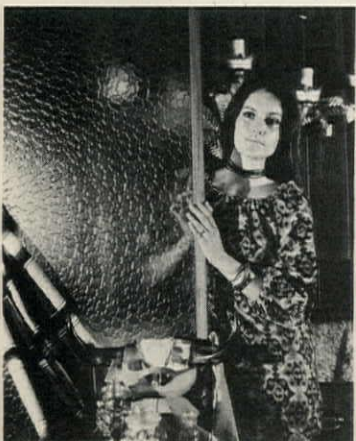
in natural or dark brown redwood or handrubbed with oil finish to a dark walnut color. Panels are 11 1/4" wide, with T&G edges, and the standard length is 96", although other lengths may be ordered. Forms & Surfaces, Santa Barbara, Calif. CIRCLE 207 ON READER SERVICE CARD



Simulated weave is actually embossed vinyl, expanded to give it extra depth without added weight, and backed with fabric. Available in seven colors, it is pre-trimmed and comes 27" wide on rolls 5 1/3 yds. long. Besides being soil-proof and scrubbable, it won't

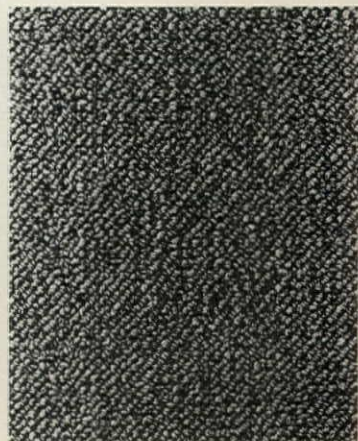


chip or crack, and it resists stains, scuffs, abrasions, and mildew. It is just one of six new patterns in "Fashion II" line that includes vinyl embossed to simulate wood grains and cork-like textures. General Tire & Rubber, New York City. CIRCLE 208 ON READER SERVICE CARD



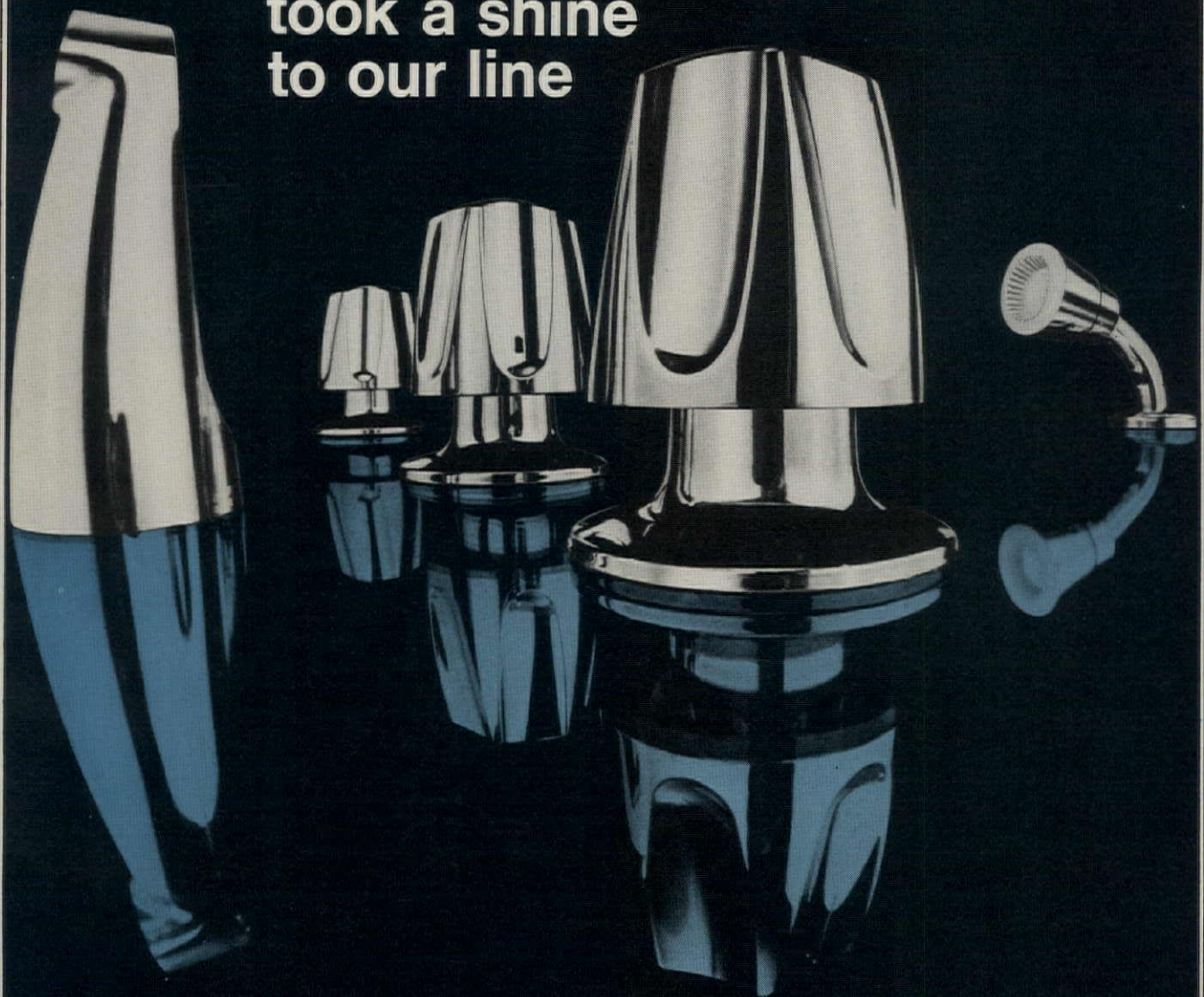
Plastic panel is translucent, comes in 2' x 4' or 2' x 6' sizes for cabinet doors, room dividers, or accent panels. Made of a polystyrene called "Lustra-Lite", panels come in a hammered glass pattern (shown) in gold, olive, or clear, in a bottle glass motif in gold or olive, and in a Spanish design in gold, olive, or copper. Barclay, Lodi, N.J. CIRCLE 209 ON READER SERVICE CARD

Wall carpeting lowers noise transmission in schools, motels, apartments, or offices. "Wallscaping", made in two types of loop construction, comes in 20 colors and three striped patterns plus custom colors and stripes. Five of the most popular colors have metallic "Lur-ex" yarn added for sparkle. Lees, Burlington, Norristown, Pa. CIRCLE 210 ON READER SERVICE CARD



Verve by  PRICE PFISTER

the day
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Now Ford gives you a choice of swinging or sliding doors.



Sales leader for 11 straight years.

Only Ford vans have so many better ideas that make vans easier to drive, to service, to use.

New Econoline Vans now offer you a choice of conventional swinging doors or a new gliding side door for cargo handling in cramped alleys and beside loading docks. Three separate tracks, at top, bottom and center, give bridge-like support for solid, smooth, one-hand operation, tight seal.



Shorter outside, easier to park. Compared to other makes with similar loadspace, Econoline Vans have significantly less overall length. This means easier parking and better maneuverability in city-delivery operations—time saved on every trip.

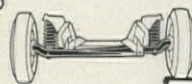
Strong, Twin-I-Beam Independent Front Suspension—Ford's exclusive design smooths the going for both load and driver. Two forged steel I-beam axles provide strength and durability; wide wheel stance means stability in cross winds.



Wider at top for built-ins. Body sides are more vertical, wider apart at top than other vans. Built-in units fit better and leave more aisle.

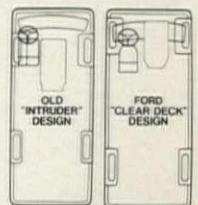
Big payloads. Three series in two

Easy, out-front servicing. Routine service points are right at hand under hood: water, oil, battery, wiper motor, voltage regulator, plus many others.



lengths offer maximum payload capacity of over two tons.

Engine clear forward. In Ford's clear-deck design, engine is forward—all the way out of cargo area. Over 8½ ft. clear floor space behind driver's seat... over 10 ft. in the SuperVan. Driver can easily step from seat into rear cargo area.



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Appliances by Hotpoint

CIRCLE 137 ON READER SERVICE CARD





Unusual graining with cathedral patterns is Indian rosewood which varies in rose tones from very light to almost black. The hardwood premium grade plywood panels are made from book-matched face ve-

neers and can be supplied in numbered sets with up to 50 panels in sequence. Also available: teak or black walnut. Bangkok, Philadelphia, Pa.

CIRCLE 211 ON READER SERVICE CARD



Off-white panels are used here in a design for a summer house because of their resistance to stains and wear and their easy maintenance. "Textured Antique" paneling resembles aged wood, complete with distress

marks and wormholes and what looks like a weathered coat of paint. Other time softened colors include green, gold, blue, red. Masonite, Chicago.

CIRCLE 212 ON READER SERVICE CARD



Rough-textured surface on hardwood paneling is embossed pattern of deep-grained weathered wood. "High West" paneling comes in colors called "silver", "saddle", and "buckskin" and is protected by a wear-resistant polyurethane finish that is easily maintained. Georgia-Pacific, Portland, Ore.

CIRCLE 213 ON READER SERVICE CARD



Contrasting walls resemble wood-grain and grass cloth. Both patterns are imprinted on fabric-backed vinyl that is laminated to 1/2"-thick gypsumboard. "Durasan" panels are 4' wide, come in six lengths from 8' to 14', are installed with nails, screws, or adhesive. National Gypsum, Buffalo, N.Y.

CIRCLE 214 ON READER SERVICE CARD



Vertical ridges successfully conceal all panel joints, give walls a seamless look. Called "Illusion", the paneling is actually 4' wide and comes 7', 8', or 10' long. Surface is protected by plastic coating. Available in colors called "sand", "surf", "sage", etc. Evans Products, Portland, Ore.

CIRCLE 215 ON READER SERVICE CARD



Accent wall sets off alcove-like arrangement for bed. Shown is off-white "Riverhall" in the wood-grain "Estate" line of "Weldwood" panels. Texture is etched into surface, then a plastic coat makes maintenance easy. Panels are either 4' x 7' or 4' x 8'. U.S. Plywood, New York City.

CIRCLE 216 ON READER SERVICE CARD



Simulated tiles are actually hardwood panels with 4" scorings. Printed on the squares is a Mediterranean tile-like design in gold, green, or blue. Then a plastic coating gives the paneling a glazed appearance, as well as protecting it from heat, moisture, and stains. "Riviera" panels are 4'x8' and 1/8" thick, can easily be cut to fit over areas like kitchen or bath counters. Also available are moldings that harmonize with the tile colors. Marlite, Dover, Ohio.

CIRCLE 217 ON READER SERVICE CARD



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ALL-PLASTIC plumbing is here — with two great new GSR® systems! For plastic hot and cold water lines, install all-new GSR Hi-Temp CPVC pipe and fittings—designed to operate at 100 psi at temperatures up to 180°F. Scale build-up is eliminated and pipe sweating is greatly reduced. The complete GSR system includes pipe and fittings in ½" and ¾" copper tube sizes — plus all necessary accessories.

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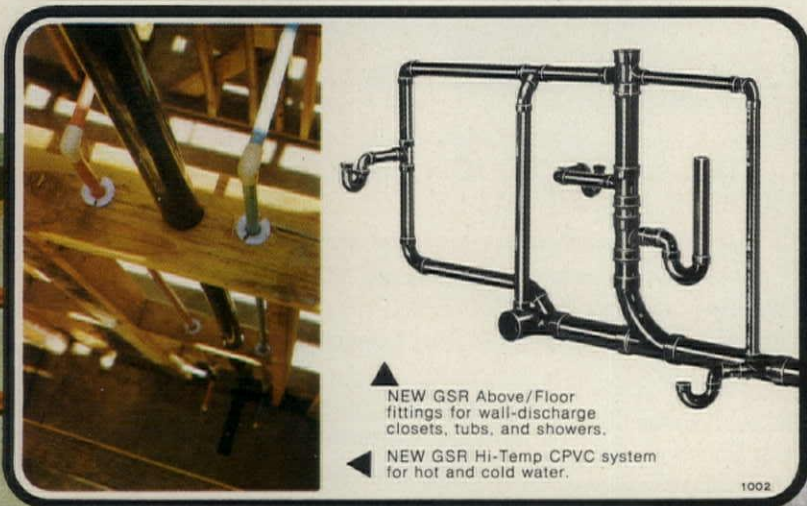
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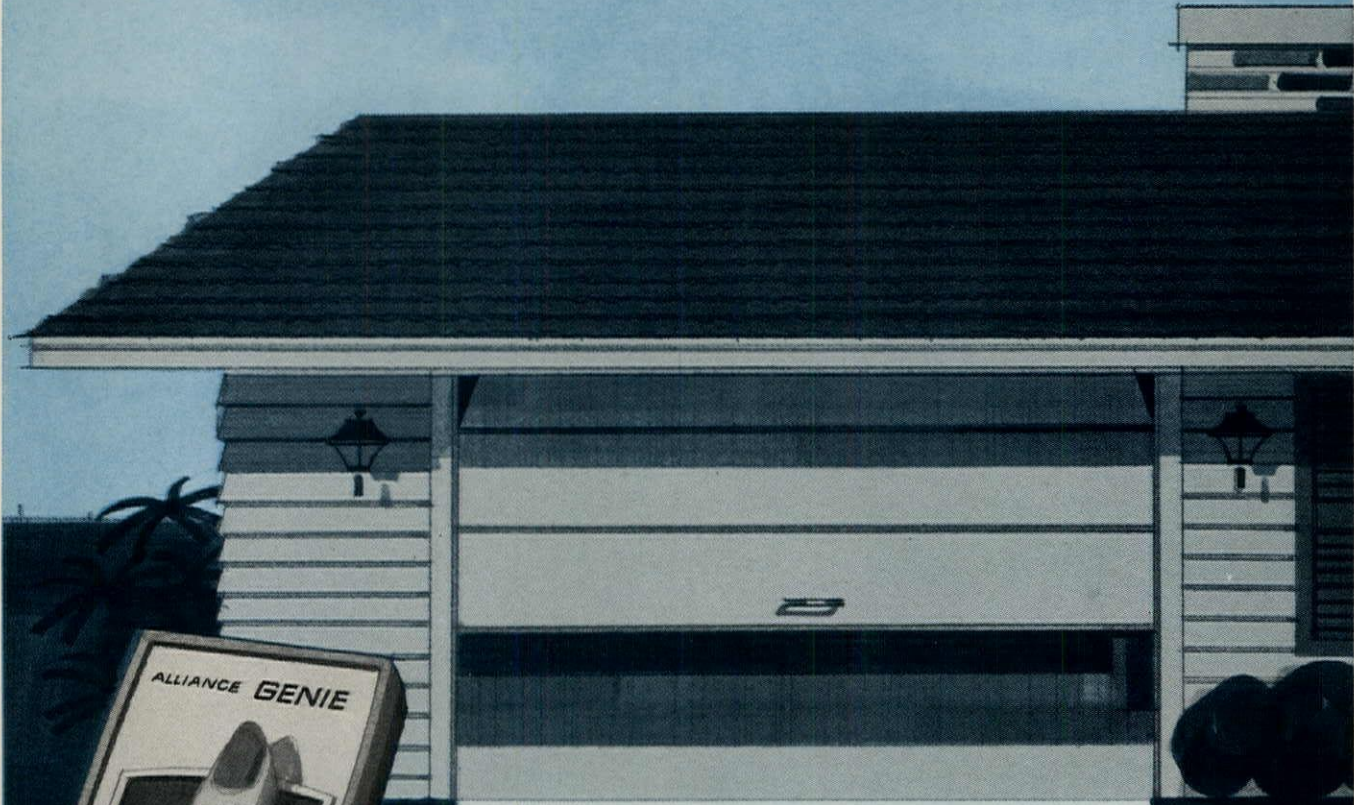
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That's Sanspray's large aggregate pictured above. There's also a small aggregate (equally distinctive). And a

range of colors you have to see to appreciate; like Tangerine, Pearl Gray, Gaelic Green, Monterey Sand . . . and others.

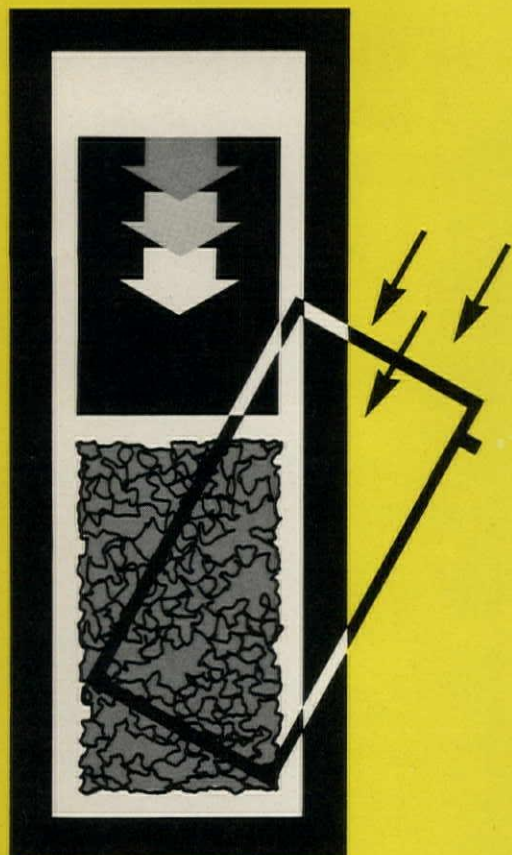
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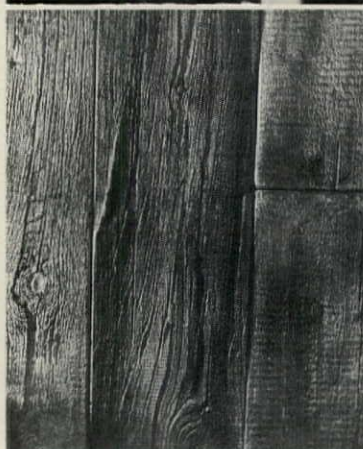
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PRODUCTS/INTERIORS



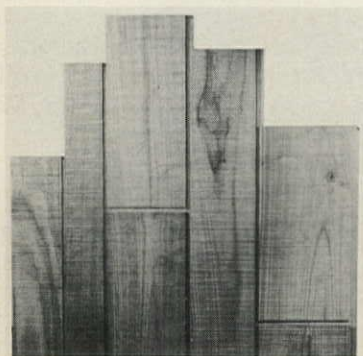
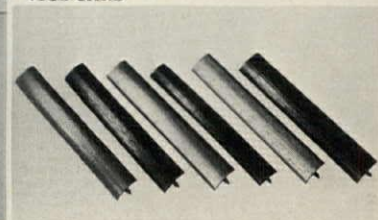
Synthetic bricks and wood are difficult to tell from the real thing. But Design Images' "Barnsiding" (left) is flexible polyester planking, while Bolen's "Roxite" antique used bricks (above left) and Cavrock's brick panels (above right) are fiberglass-reinforced polyester. "Barnsiding" comes in tan or dark weathered silver. Beveled planks, 8' long, come in random widths with no visual repeat. "Roxite" (of Owens-Corning Fiberglas), strong enough to withstand even hammer blows, comes in two reds, buff, or white. Cavrock's bricks, are highly resistant to flame. Panels are 4'x8', have pre-trimmed selvages and half-brick cutouts for precise joining. Design Images, Reading, Pa.; Bolen, Niles, Ill.; and Cavrock, Vernon, Conn.

CIRCLE 218, 219, OR 220 ON READER SERVICE CARD



Plastic moldings include protective corner guards (left) and decorative trim (below). Corner guards, made by Construction Specialties of a vinyl alloy called "Acrovyn," can't be damaged by impact. They snap into clips on the wall, may be mounted over a crumbling corner as shown, are easy to replace, and come in six colors. "Econo-Tex" moldings, by Plasti-glide, are extruded flexible polyethylene that resists acids. Although non-paintable, they come in 6,000 wood grains, 580 solids. Available in lengths from 3' to 1,500'. Construction Specialties, Cranford, N.J.; Plasti-glide Manufacturing, Santa Monica, Calif.

CIRCLE 221 OR 222 ON READER SERVICE CARD



Hardwood plank paneling has a rough-sawn surface. Prefinished with a coating that is marproof and resistant to most household chemicals, paneling is also sealed on the back to prevent moisture leakage and warping. "Gregorian BenchMark Walnut" paneling comes in 1/2"-thick random length, random width planks for design flexibility. Townsend, Stuttgart, Ark.

CIRCLE 223 ON READER SERVICE CARD

Marble/China.

The luxury look of marble without the price or the problems.

These handsome Marble/China fixtures have all the rich good looks of the real thing. With beige-brown veins that go all the way through.

But unlike real marble, our new Marble/China can't stain. Because it's actually durable vitreous china, just like other quality American-Standard fixtures.

Shown above is the unique Ultra[®] lavatory. The beauty of Marble China comes through in this truly elegant shape. The Ultra lavatory is a spacious 30" by 20" and is featured with the unique up-flowing Ultra-Font[™] faucet. Perfect for shampooing.



Richly rounded, the Aqualyn[™] lavatory, at left, is another effective use of Marble/China. A generous 20" by 17", it is seen here with polished chrome Aquarian[™] lavatory faucet.

The much wanted look of the Elongated Cadet[™] toilet is given further distinction in



Marble/China. Especially when it's topped with a Church[®] toilet seat in matching marble.

Whichever fixtures your customers choose, the practical beauty of Marble/China shines through. As handsome as mother nature's marble, but much more durable, more sanitary... and so easy to clean. In a basic neutral color that complements any decor or fixture color.



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PLUMBING / HEATING



High-style disposers from KitchenAid (left) and Tappan (right) come in batch or continuous feed models, have reversing motors, and cushioned mountings to isolate vibrations, reduce noise. KitchenAid's "Superba" also has polystyrene foam jacket, epoxy-coated grind chamber, Teflon-coated drain chamber, and cast stainless steel shredding ring and grind wheel. Tappan's "Hi-Lite" has stainless shredding sleeve, swivel antijam impellers, and a ripper, plus side panels of pegboard for hanging under-sink items, and a light to illuminate storage area. Hobart, Troy, and Tappan, Mansfield, Ohio.
CIRCLE 224 OR 225 ON READER SERVICE CARD



Variety of disposers includes continuous and batch feed models. The two Norge units by Fedders (above left) have 1/3-hp or 1/2-hp motors, sound-shield jacketing, rubber cushion mountings, corrosion resistant aluminum alloy hoppers, and antijam design with fixed impellers. Modern Maid's heavy-duty model (above) has 1/2-hp reversing

motor, antijam swivel impellers and turntable, polystyrene insulation, and teak-grained vinyl front panel. Caloric's 2-qt. "Ultramatic" (above right) has a quick-mount connection, anti-corrosive urethane coating inside the housing, cast stainless steel impellers, and comes in gold color. The A.O. Smith line (left) has seven models with uni-

directional motors, stainless steel hoppers and operating parts, swivel impellers, three layers of insulation, and a snap-and-lock mounting system. Fedders, Edison, N.J.; Modern Maid, Chattanooga, Tenn.; Caloric, Topton, Pa.; and A.O. Smith, Kankakee, Ill.
CIRCLE 226, 227, 228, OR 229 ON READER SERVICE CARD



Compact kitchen combines the necessary facilities in a unit only 39" wide, 24" deep, and 37 1/2" high (with 4" backsplash). It has 6.6-cu. ft. refrigerator with freezer, stainless steel sink with faucets, and a

two-burner cooking surface. Unit is finished in walnut wood-grained laminate like the one shown, or in gold, avocado, or white. Sub-Zero, Madison, Wis.
CIRCLE 230 ON READER SERVICE CARD



Sliding racks and shelves make hard-to-reach equipment like trays and pots much more accessible. Tray rack (above left) also holds lids, platters, and cutting boards on end for easy removal and protects them from banging against each other. Bottom sliding shelf (above right) is standard equipment in



manufacturer's base cabinets. Center sliding shelves are optional. Also available: lazy susans, mixing center, glide-out chopping block, and vegetable racks. All are installed in cabinets that come in five styles, four finishes. Long-Bell, Portland, Ore.
CIRCLE 231 ON READER SERVICE CARD

Now all Marvin windows can be pre-finished inside and out. You get a better window. and cut labor costs \$10-20 per opening.

We still make it easier to get wood windows — any style, any size, any option—than anybody else. And now we can give you all of these windows completely pre-finished.

Marvin XL-70 is the super-tough exterior pre-finish which lasts 2 to 3 times as long as the best paints. New Marvin interior pre-finishes come in walnut, fruitwood, and white, and they're something to see.

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CIRCLE 145 ON READER SERVICE CARD



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THE FASTENING SPECIALISTS

with proven superior bonding strength
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Spotnails now makes available the latest in improved Construction Adhesives. SPOT-GRP has been tested for two years, in the laboratory and on the job site, to thoroughly prove its far superior bonding power and greater weathering characteristics. For the cost-conscious, quality-minded builder,

SPOT-GRP can cut installation time, lower labor costs, reduce material requirements and avoid costly call-backs. Additional stressed skin strength, minimal nail pop, elimination of floor squeaks and increased sound deadening effect are *extra* quality benefits from SPOT-GRP Construction Adhesives.

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PRODUCTS/KITCHENS



Shelving system can be used to highlight a kitchen wall in model house or apartment. Specifically for kitchens, it features a 2 3/8" thick chopping block that is 16 1/2" deep and 18" or 32" wide. Also

available: racks and jars for spices, shelves and drawers for displaying and storing kitchen gadgets and cookbooks. Interior Systems, Beverly Hills, Calif.

CIRCLE 232 ON READER SERVICE CARD



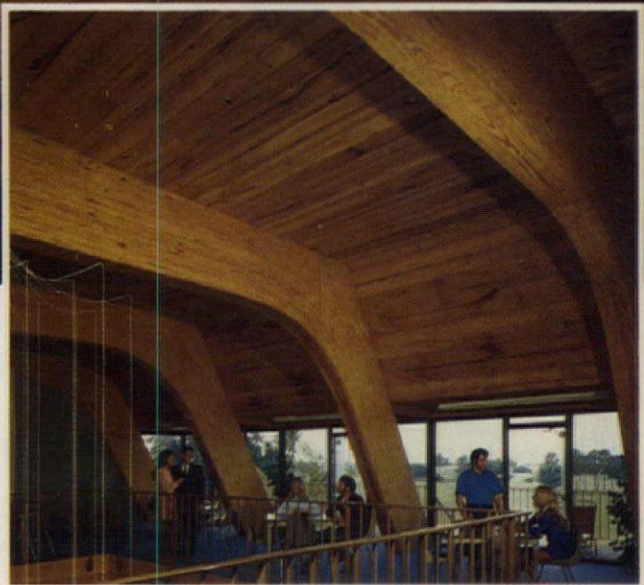
Low- and high-priced cabinets include a custom line and two stock lines for multifamily builders. Quaker Maid's "Clarion" line (top left) is made of solid wood and has a hand-rubbed finish. Frames of oak and doors of pecan are both a golden brown color, set off by brass hardware. Kemper's "Villager" (left) and Tappan's "Park Terrace" (above) are made of 1/2" high-density particleboard filled with polyester. To this is applied the light or dark brown woodgraining and finish before the final baking and curing in ultra-violet ovens. Doors are lightweight, can't warp, are easily removed or replaced. Drawer fronts are also removable. Drawers slide on center tracks, are molded of "Duratron" polystyrene that resists impact, have rounded easy-to-clean-corners. Quaker Maid, Leesport, Pa.; Kemper, Richmond, Ind.; Tappan, also Richmond.

CIRCLE 233, 234, OR 235 ON READER SERVICE CARD



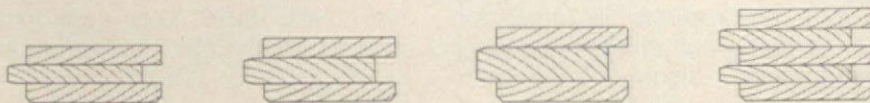
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CIRCLE 147 ON READER SERVICE CARD

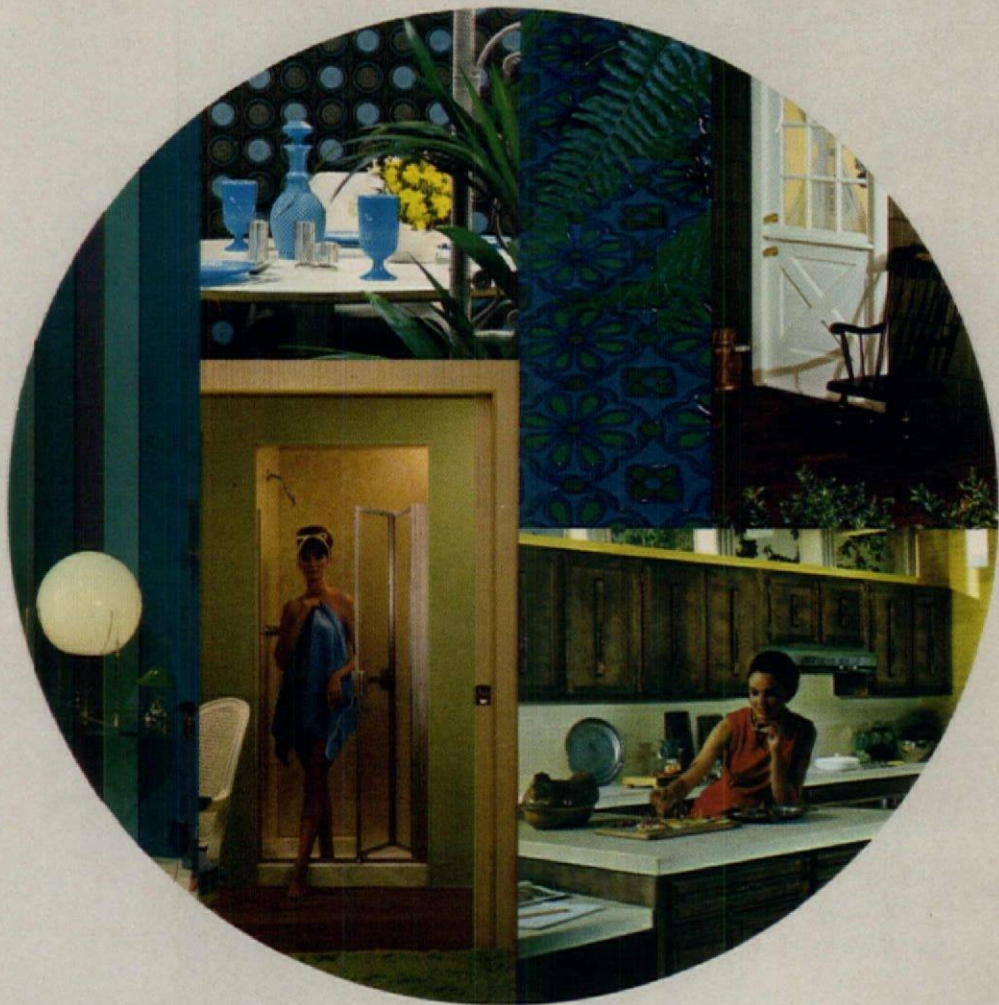
H&H OCTOBER 1971 147

PRODUCTS '72

New Products from House & Home Advertisers

a timesaving guide to the 1972 NAHB exhibits

Builders attending the big sprawling NAHB convention in Houston next January will face a bewildering array of products, new and old, spread out over a huge exhibit area. Products '72 has been created by House & Home and its advertisers to organize your shopping tour of this impressive display. Copies will be available free at the show.



see the best, newest, most exciting

This pocket sized guide to the exhibits is a collection of building products, materials, tools and equipment . . . in each case especially selected by the exhibitors themselves as being the best, the newest, the most exciting they will be offering in 1972. Each product will be handsomely illustrated in full color, described in detail and identified by company and booth number.

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The order of presentation in Products '72 will be by booth sequence enabling you to move quickly and

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Be sure to attend the NAHB Convention in Houston: January 23-27, 1972



This is a composite photograph to show simulated compaction action.

Our new undercounter Trash Masher compactor has a great build for builders.

It's built to build-in quickly and with minimum fuss.

Only 15 inches wide and 34 $\frac{1}{8}$ inches high, it's designed for easy installation in standard-size kitchen cabinetry. (Like an undercounter dishwasher, only easier.)

No special wiring or plumbing, it plugs into any adequately wired outlet.

And once you've got it in place, it's built to look great. Because you can match kitchen cabinets or add a decorator accent, thanks to the front trim that frames the material of your choice.

Inserting your $\frac{1}{4}$ -inch-thick panel is simple and there's no extra trim kit to buy. Or you can order an optional textured steel panel that looks like leather and comes in avocado, harvest gold, copper or white.

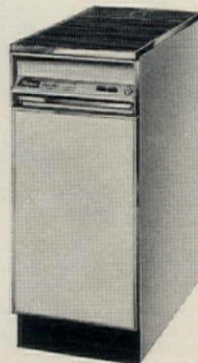
The Trash Masher* compactor takes care of household trash problems 365 days a year. Compacts refuse to $\frac{1}{4}$ its original size. Sprays it with a deodorant. And packages it in a neat, throwaway bag. Safety features include a key lock, safety stop button and drawer cutoff.

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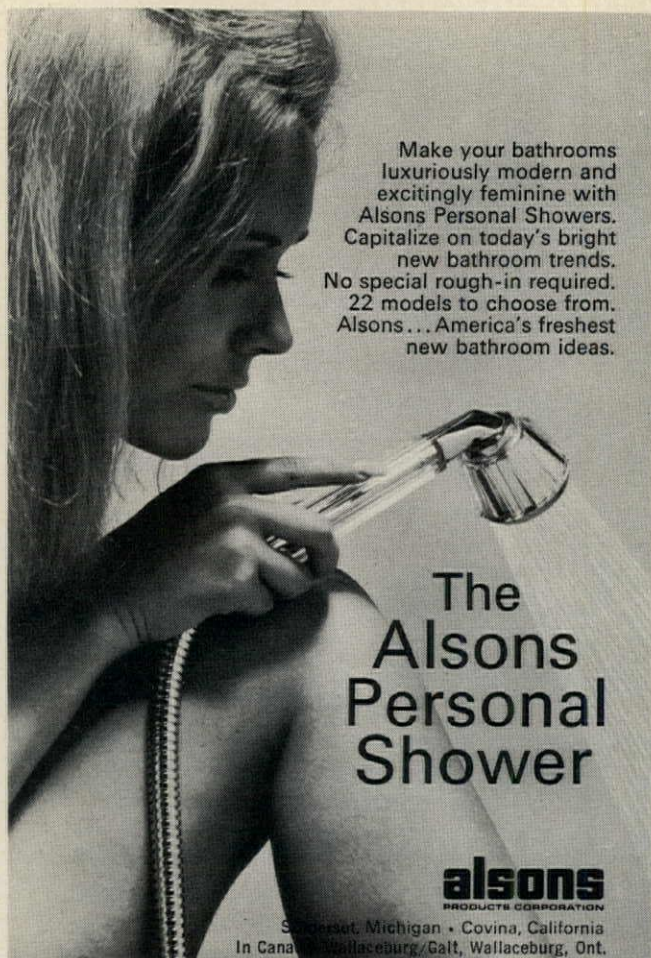
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The Alsons Personal Shower

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CIRCLE 179 ON READER SERVICE CARD



Self-contained kitchen, one of three styles available, comes pre-plumbed, pre-wired, needs no in-floor waste or supply lines, and includes its own electric hot water heater. Double stainless steel sink,

range and oven with exhaust fan, and built-in cutting board are standard. Dishwasher and disposer are optional features. Knoebel, Orlando, Fla.

CIRCLE 236 ON READER SERVICE CARD



Variety in cabinetry includes contemporary and traditional designs. At left above are streamlined "Ebano" cabinets in the "AristOKraft" line by United Cabinet of Jasper, Ind. They have reverse-bevel fingertip pulls and self-closing hinges. Spanish oak grained design is protected by baked-on finish that needs no waxing, resists abrasion, is impervious to moisture, food acids, and household chemicals. At right above is the "Polyamer" line by American Cabinet of Scranton, Pa. Here a polyester plastic (vs. conventional melamine-based laminate) is laminated to both sides, making possible a lifetime guarantee against warping. Patterns are white or gold teak, Spanish oak, and American walnut. At left are "Rockingham" cabinets by Brammer of Davenport, Iowa. Doors have hardwood veneer printed with walnut diamond match grain.

CIRCLE 237, 238, OR 239 ON READER SERVICE CARD

CHECKED YOUR FINANCIAL SPECS LATELY?



Investing in diversified securities principally for possible **Growth with Income**

For Prospectus: Contact

Delaware Management Company, Inc.

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name _____

address _____

city/state/zip _____

HH-10-71

- A—Korad on siding
- B—Korad on shutters
- C—Korad on doors
- D—Korad on roof ventilator
- E—Korad on soffits
- F—Korad on gutters and downspouts
- G—Korad on trim



All around your house[®]

Korad[®]

ends painting- and repainting and repainting

Building products prefinished with Korad acrylic film eliminate the cost and scheduling problems of job-site painting ... and Korad saves the homeowner the time and money of repainting and repainting.

Korad is a solid, 100% acrylic plastic film that is factory bonded to wood, metal and plastic building products. Korad film is thick—3 times thicker than most paints for superior mar and scratch protection.

Being an acrylic plastic, Korad film has outstanding resistance to chalking, fading, cracking and chipping. Korad is factory-bonded to almost any surface, becoming integral with the material.

Korad acrylic film is available on all kinds of building products to eliminate field painting of exterior surfaces.

Call our special number (215) 592-6719, or write us to get the names of material suppliers and samples of Korad colors.



Korad is your first line of defense



DOUBLE HEADER

for a
quick
sale...
and a
quick
meal

Thermador gives you
a choice of two
Thermatron Models.

In either model you may cook
at a snack in a fraction of
a hasty but tasty frozen
in the foil tray it comes in.
It makes it look as good
as it tastes. This single unit mounts under
the counter and may be vented through the
hood or directly to the outside.

The Thermatron Microwave Wonder is a
combination to the Thermador Built-in
Combination Oven. This unit combines
Thermatron cooking with the
self-cleaning—both are the ultimate
in efficiency. Installs in cabinet or wall
with a ventilating system. Both units
feature wood handles and
anodized aluminum trim.

Efficiency means more leisure
time for you and more sales for you.

Thermatron
Microwave
Range



Thermatron
Microwave
Range



Thermador
Self-Cleaning
Oven

For details write

Thermador
Division of Norris Industries

5119 District Boulevard, Los Angeles, California 90022 · Department HH

CIRCLE 63 ON READER SERVICE CARD

how this ad in House & Home paid for itself 13 times over in actual sales

\$37,000 in sales have been traced directly to readers who used House & Home's reader service card to request more information on Thermador's microwave range and combination range & self-cleaning oven.

Not counting action taken by readers who contacted Thermador directly, actual sales triggered by the ad totaled 13 times the cost of the ad.

In addition to actual sales, the Thermador ad resulted in \$91,100 in units specified... \$196,500 in units readers are planning to purchase... \$829,600 in units approved... \$865,300 in units recommended... and \$2,019,000 in units readers are still investigating for specific projects.

Why does advertising in House & Home pay its way many times over? Largely because House & Home shows your product to everybody who is anybody in housing & light construction.

For example, your story goes to the 50,000 builders who account for 9 out of 10 contractor-built apartment and single-family units, as well as extensive remodeling and non-residential building activity.

Then going beyond the builder, House & Home takes your story to the 50,000 specialists who work with builders and for builders in selecting building products, materials and equipment — specialists including architects, realtors, lenders and distributors.

Full documentation on how the Thermador ad paid for itself 13 times over is readily available from

McGraw-Hill's marketing and management publication
of housing and light construction **House & Home**
330 West 42nd Street, New York, N.Y. 10036

Who's helping you meet the demand for maintenance-free products all around the house?

Philip Carey.

Builders are finding that today's homebuyers are still attracted by style and appearance — but low-maintenance exterior products really sell them. Philip Carey gives you what they demand.

For instance, take the functional beauty of Villager *solid vinyl* siding, soffits and fascia board. They have the eye-appeal of natural wood; yet they won't warp, peel, flake, blister, dent, corrode or rot. And they never need painting. They won't even show scratches because the color goes all the way through. These same outstanding product features apply to Villager decorative shutters.

Or take the rugged, natural look

of long-lasting Philip Carey 250 Rustic shingles. Their random pattern design enhances the appearance of any home — traditional or contemporary.

And here's the real clincher — you can add these products to your homes or apartment buildings without pricing yourself out of the picture. Their rich look and many maintenance-free features belie their modest price tag.

Check them out at your building materials supplier. Or return the coupon for a copy of our new "Exterior Decorator Kit." Philip Carey Company, Division of Panacorn Corporation, Cincinnati, Ohio 45215.

Please send me your "Exterior Decorator Kit".

Name _____

Company _____

Address _____

City _____

State _____ Zip _____



Dept. HH-1071
Philip Carey Company
A Division of Panacorn
Corporation
Cincinnati, Ohio 45215

CIRCLE 153 ON READER SERVICE CARD



SMOKY



Combine the warm glow of smoked bronze acrylic domes, hexes and squares with the glitter of crystal... effect new moods, new accents in lighting.

Virден does it with verve...

13 new models that mix acrylic, crystal and chrome. Over 800 other fixtures, too. All colorfully displayed on the 112 pages of the '72 catalog.



VIRDEN

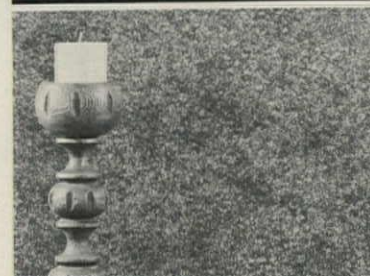
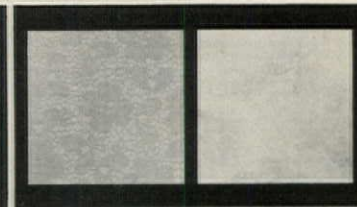
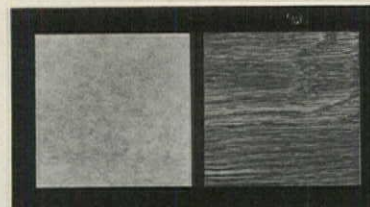
Virден Lighting, 6103 Longfellow Ave., Cleveland, Ohio 44103, Division of Scott & Fetzer Company... Virден Lighting (Canada), 19 Curity Ave., Toronto 16, Ontario, Division of SFZ International Limited.

PRODUCTS/KITCHENS



Plastic laminates are new additions to "Textolite" line, which now numbers 51 solids, 20 woodgrain patterns, and 46 abstract designs. Shown at left is "Burmese Rosewood" in a deep brown color. At left above is "Cortena Marble" which has a lot of white in it, offers better stain resistance than the Italian Crema marble it resembles. Both are suitable for accent walls, table tops, bathroom vanities, and kitchen countertops, come 2½', 3', 4', and 5' wide in 8', 10', or 12' lengths. Shown above at right is "Tracery," an abstract filigree design that comes in olive, pewter, sauterne, and melon. It is available in sheets 24" to 60" wide and 60" to 144" long for kitchen counter-topping and bathroom vanity surfacing. General Electric, Louisville, Ky.

CIRCLE 240 ON READER SERVICE CARD



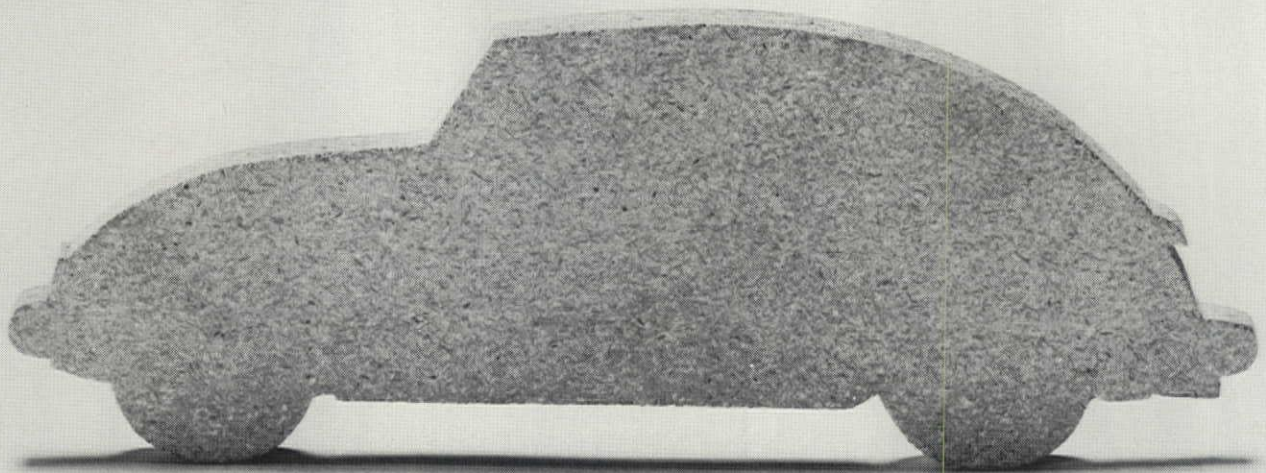
Countertoppings simulate various natural—and unnatural—patterns and materials. Above are four Panelyte plastic laminates: from left to right they are "Leather" in gold, avocado, brown, and palomino; "Valencia Oak" in deep brown with a textured surface; "Boutique," a lace-like pattern; and "Iced Marble," in a shiny gray-green. All come in standard sizes from 30"x96" to 60"x144".



A highly-polished Formica that looks like tortoise shell (top left) comes in sheets from 30"x96" to 60"x144". A floral by Parkwood called "Boutique" (center left) comes in melon, silver, spring, or blue. A woodgrain in Enjay's "Nevamar" called "Butcher Block" (bottom left), comes in natural or amber and has grain running across the sheet so it can be matched when used on a counter's edge to produce a "waterfall" look. Sheets are 4'x8' or 4'x10'. Reliance Panelyte, Tupelo, Miss.; Formica, Cincinnati, Ohio; Parkwood Laminates, Lowell, Mass.; and Enjay Fibers and Laminates, Odenton, Md.



CIRCLE 241, 242, 243, OR 244 ON READER SERVICE CARD



When you have a good thing you don't change the way it looks.

You just increase production.

We've built a new particleboard plant in Diboll because the Temple particleboard from our plant in Pineland has been such a smash success.

The particleboard is just the same as all Temple particleboard—uniform in density and specification, free from voids, with that wonderfully smooth surface and workability. Available in a full range of thicknesses.

Now there is just a lot more of it. Ten times more. That's a change your Temple salesman will be smiling about.



**TEMPLE
INDUSTRIES**

Diboll, Texas 75941

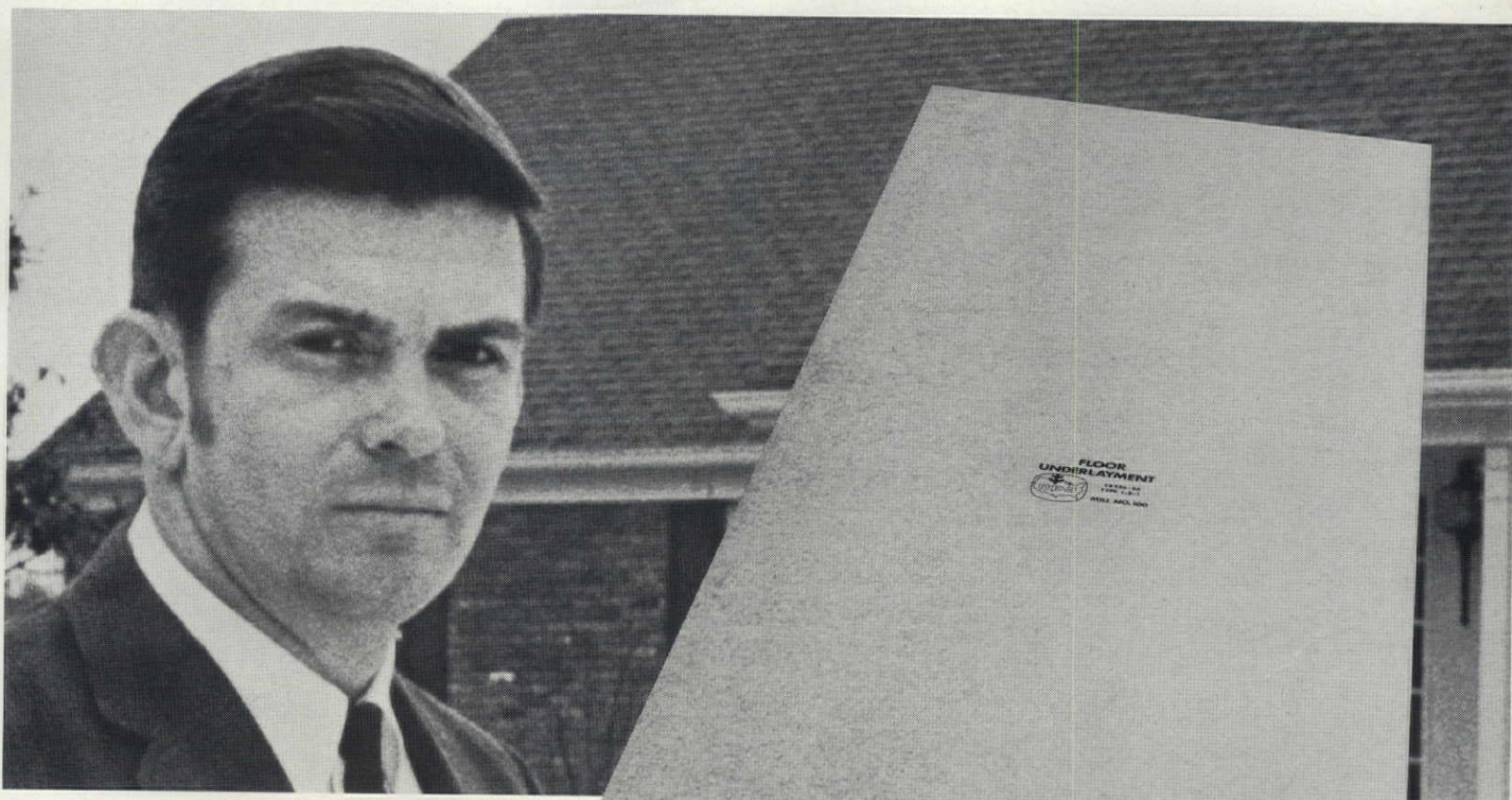




Only you can prevent forest fires.

"I look for the NPA grademark when I buy particleboard floor underlayment."

Roger Dardenne, Dardenne Building Corp., Akron, Ohio



Roger Dardenne is like hundreds of other builders who want a trouble-free floor underlayment.

One that installs easily. That's easy to cut, smooth, stable, solid and free of voids. One that will do the job right and eliminate costly call-backs that eat into profits.

That's why he makes sure when he buys floor underlayment that it's particleboard with the NPA grademark clearly stamped on it and that it's installed according to instructions.

The National Particleboard Association's grademark is his assurance that the panel was manufactured to meet or exceed U.S. Commercial Standard CS 236-66. And only those manu-

facturers agreeing to a rigid in-plant testing and quality control program that is verified by NPA through unannounced visits to the mills and tests of board in an independent laboratory are permitted to use the NPA grademark.

So next time you buy floor underlayment, make sure you specify NPA grademarked particleboard.

It's the underlayment you can trust.



NATIONAL
PARTICLEBOARD ASSOCIATION

2306 Perkins Place, Silver Spring, Maryland 20910

NPA Members: (those with asterisks manufacture underlayment)

- *Borse Cascade Corp.
- *Brooks-Willamette Corp.
- *Cascade Fiber Company
- *Collins Pine Company
- *Durallake Company
- *Georgia-Pacific Corp.
- *Hambro Forest Products, Inc.
- *International Paper Company
- *Mexwood Products, Inc.
- *Olmkraft, Inc.
- *Rodman Industries, Inc.
Resinwood Division
- Southwest Forest Industries
- *Temple Industries
- *Timber Products Company
- WESTVACO Corp.
- *Weyerhaeuser Company



You can get advice from a man who helped change the face of Chicago.

You might say that if Paul O'Neill of our Corporate Market Development Operation didn't help to heat and cool Chicago's new Lake Point Tower and John Hancock apartments the way they were finally done, the architects of these two great buildings couldn't have made them look the way they do.

And their spectacular good looks as much as anything else set the tone of the new Chicago.

What Paul and his Electrical Systems Engineering group do is help consulting engineers, architects, builders, contractors and investors in making the best use of GE products in their projects.

What he did at both Lake Point Tower and John Hancock was to work with architects and consulting engineers to provide a through-the-wall



heating and cooling system using GE Zoneline™ units, whose exterior louvers could become important elements of the buildings' architectural detail.

And at both buildings, this approach overcame the problems created by solar loads on glass during those critical spring and fall months when one side of the building needs air conditioning while the other needs heat.

Paul O'Neill and his group are ready to help you solve electromechanical problems ranging from those they faced in Chicago to the best way to wire a kitchen.

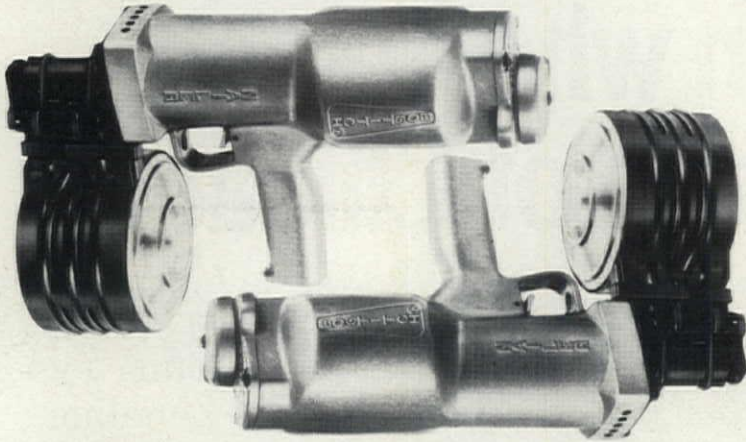
Just call your GE Contract Sales Representative.

He's listed in the Yellow Pages under "General Electric Major Appliance Distributor," and he'll wire you in with Paul.

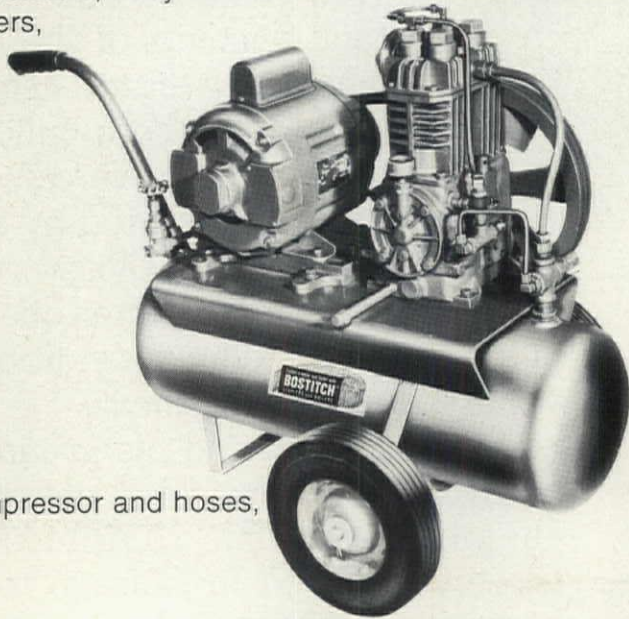
GENERAL  ELECTRIC

Only Bostitch makes building roof trusses so easy.

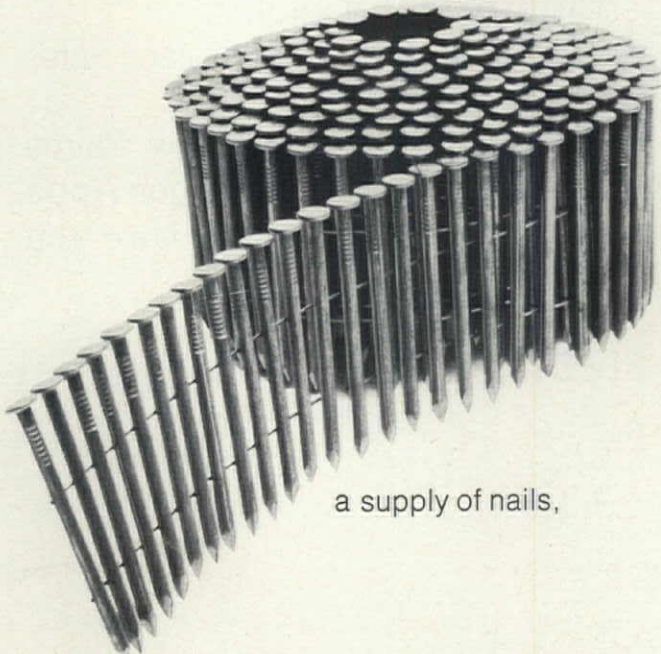
Complete, compact Bostitch Clinch-Nail System gives you everything you need to build roof trusses except lumber and saws. And the Bostitch Clinch-Nail System meets every builder's and remodeler's needs for strong, dependable, low-cost wooden roof trusses.



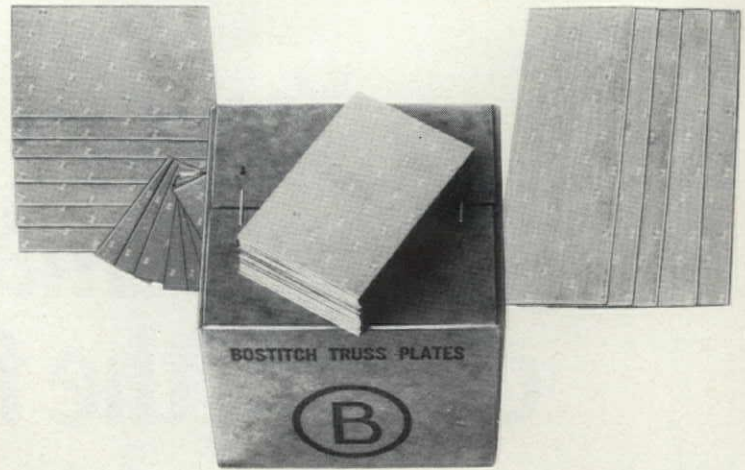
The Bostitch Clinch-Nail System "package" includes reliable, easy-to-use coil-feed Bostitch Model N3 Nailers,



compressor and hoses,



a supply of nails,



plates, jigs and clamps, plus complete, illustrated installation and operating instructions. You can set up anywhere you want, and build trusses in half the space normally required.



And Bostitch Clinch-Nailed Roof Trusses have exclusive "rivet-joint" construction to stand up under the toughest conditions in transporting and handling. For complete information on the high-strength, economical Bostitch Clinch-Nail Roof Truss System, talk to the man with the fastening facts - your Bostitch man. Or write Bostitch, 250 Briggs Drive, East Greenwich, Rhode Island 02818.



NEW FLOAT-AWAY FINISH ADDS VALUE* TO YOUR MODULAR HOME WITHOUT ADDING TO THE PRICE

* Float-Away has just made a revolutionary improvement in closets that pays off handsomely for you, the builder.

Until now, all prefinished closets—wood or steel—were spray painted. It was an adequate finishing method as far as it went.

But now there's something better. Float-Away has just installed a totally new kind of finishing process, one that makes painting obsolete. Instead of simply spraying, the new Float-Away finish is actually plated to the metal. That's right, *plated*.

In punishing laboratory tests, this new finish doesn't chip or crack even when the metal is bent at a 180-degree angle. Dent it with a hammer, it still won't fail. Rip away door braces, the finish stays intact. It's the closest thing yet to a permanent closet finish.

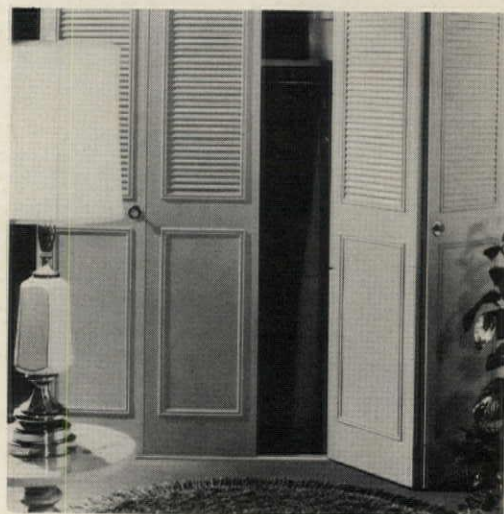
Technically called electro-deposition, the new process creates an inseparable bond between finish and metal. Edges, screw holes, mounting holes, corners, louvres, every part of the unit gets a deep, uniform finish.

Then, the electrically plated finish is baked hard for 22 minutes. (Not the usual two to five.)

Result? A prime coat so smooth and lustrous that it's actually superior to a finished coat. Tough. Lasting. Maintenance-free for years to come. Better looking than any other finish you can buy today.

Yet this remarkable finish costs you not a penny more.

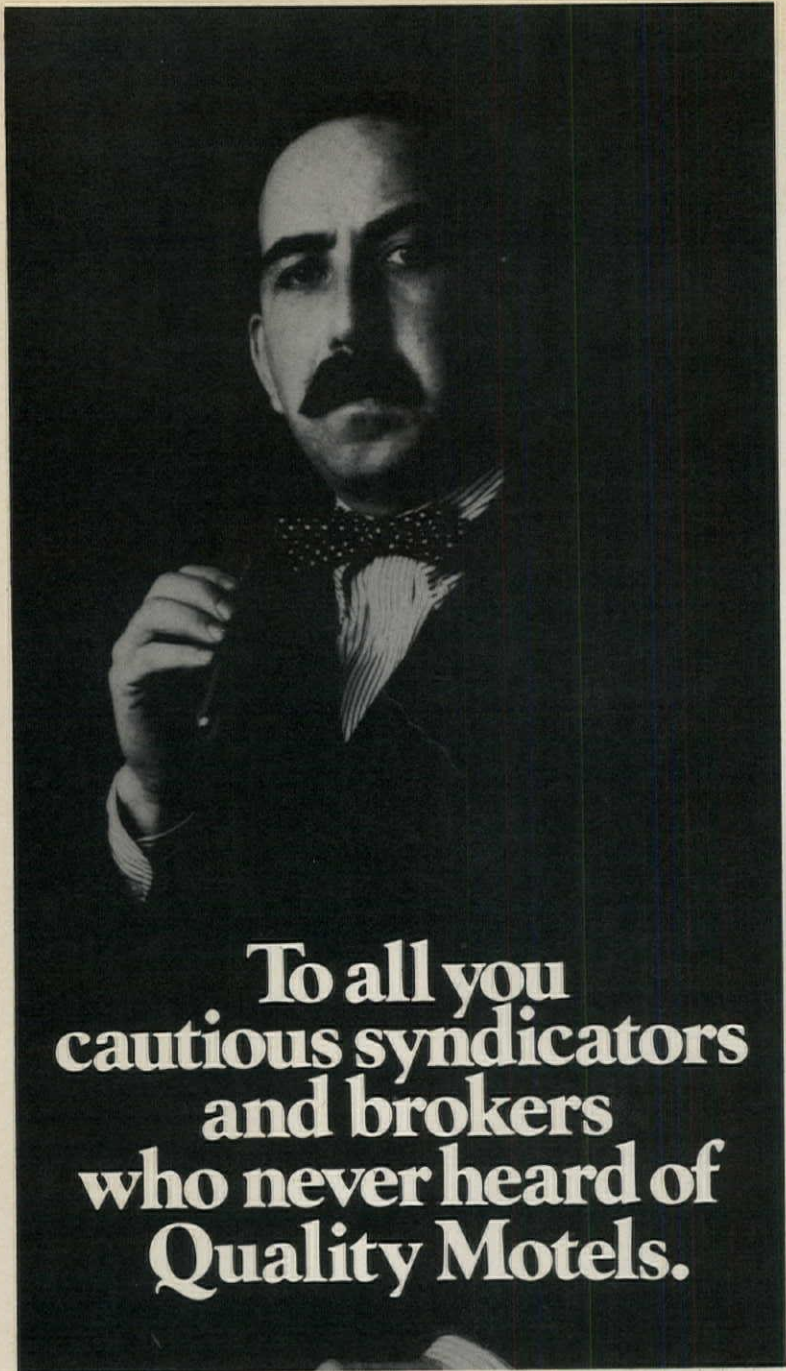
We call this process Floata-Plate. It's exclusive with Float-Away, nobody else has it. If you're not getting it, you're missing a tremendous value. For complete information, write: Float-Away, Department HH-10, 1123 Zonolite Rd., N.E., Atlanta, Georgia 30306 (404) 875-8021.



KINKEAD
INDUSTRIES
INCORPORATED

Subsidiary of UNITED STATES GYPSUM COMPANY

FLOAT-AWAY DOOR DIVISION



To all you cautious syndicators and brokers who never heard of Quality Motels.

Hear this: Quality Motels is an international chain of nearly 400 motels, most of them franchised.

We've been around since 1940, are exceptionally profitable, managed by pros, and expanding throughout the United States in a big way.

We're looking for new properties and franchisees to share our national multi-media advertising program, toll-free, one-number reservations system, and our affiliation with 10 major credit cards.

To hear more, phone or write: Leonard K. Dowiak, Director, Franchise Operations, Quality Motels International Offices, 10750 Columbia Pike, Silver Spring, Maryland 20901. Phone: (301) 593-5600.



Quality Motels International Offices
10750 Columbia Pike B-10
Silver Spring, Md. 20901

Please send me your get-acquainted fact sheet.

Name _____
Address _____
City _____ State _____ Zip _____

LITERATURE



Outdoor living. The patio area shown is just one of numerous outdoor entertainment and recreation areas whose designs are shown in "Grounds for Good Living," a new publication from the Portland Cement Association. Approaches to homes and apartments and townhouses are designed to add beauty and convenience by incorporating off-street parking and gardens and

recreation areas. Poolside patios and private outdoor entertainment centers are ideal situations for concrete masonry in countless textures and designs and many are shown in full-color drawings and photographs as well as in plans. The booklet is available for \$1.25 per copy and may be obtained by writing directly to Portland Cement Assn., Old Orchard Road, Skokie, Ill. 60076

Red cedar shakes and shingles. Fire-retardant shake and shingle roofing materials are shown in a full-color brochure that features completed applications from all over the country. The roofing materials were successfully tested for flame spread, flame exposure, control of spark emission and flying brands after having been exposed to the equivalent of 800 inches of rain. Koppers, Pittsburgh, Pa.

CIRCLE 301 ON READER SERVICE CARD

Noise control. The type and number of duct silencers required for any air-handling system can be easily ascertained by following the SNAP (system noise analysis procedure) form. Eight tables and other forms for estimating the sound-power output of fans and for converting room noise criteria into permissible sound-power levels are included. SNAP helps calculate the DIL (dynamic insertion loss) requirements for silencing any point in an air system and select the right silencers for each use. Industrial Acoustics Co., Bronx, N.Y.

CIRCLE 302 ON READER SERVICE CARD

Lighting. A full range of lighting fixtures for all uses and all applications is illustrated and described in a new and complete catalog. "Early American", "Country Manor", "French", "Italian", "Spanish", "Mediterranean", and "Contemporary" styles are among those included. There are also groups of fluorescent and incandescent fixtures, accent lights, decorative glass and fluorescent fixtures along with a whole section on bathroom light-

ing and accessories. Thomas Industries, Louisville, Ky.

CIRCLE 303 ON READER SERVICE CARD

Redwood fences. Specifications, construction tips, and design ideas for redwood fences are featured in a new full-color brochure. Various kinds of fences—good neighbor, basketweave, rail and cross-buck, louvered, novelty, picket, and bevel siding fences—are illustrated. In addition, there is information on lumber size and quality, nails and fastenings, measurements for posts, boards, and stringers, as well as instructions for setting posts. Simpson Timber, Seattle, Wash.

CIRCLE 304 ON READER SERVICE CARD

Mildew treatment. The problem of mildew treatment for exterior siding is discussed in a pamphlet issued by the maker of a mildew-resistant paint. The pamphlet explains what mildew is, how to test for it, how it damages paint finishes, and how to fight it. Information on how to sterilize a surface in preparation for painting is included along with a product description of "Sun-Proof" mildew- and fume-resistant paint.

CIRCLE 305 ON READER SERVICE CARD

Fashion locks. Entrance handlesets, levers, ornamental escutcheons, and lock panels for residential use are illustrated in full-color photographs and renderings in a new catalog. Lock functions and safety features are also discussed. Schlage, San Francisco, Calif.

CIRCLE 306 ON READER SERVICE CARD

TO PAGE 166

Wm. Daigh - Builder

3-15-71

108 SOUTH MAIN STREET
TAYLORVILLE, ILLINOIS 62568
PHONE 217-824-6868

Ronald L. Mays, Sales Mgr.
Homasote Company
12614 "Whispering Hills Lane
Creve Coeur, Mo. 63141

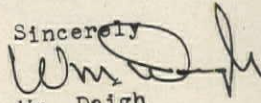
Dear Mr. Mays,

I believe you will be interested in knowing the results of our experience, using your "Homasote Floor Decking" glued and nailed as recommended.

Since completion, 1½ years ago, not one squeaky floor in the 23 unit building. In addition, have achieved excellent sound control using "Homasote Floor Decking", insulation between floors, dry wall hung on resilient channels, plus carpet and pad.

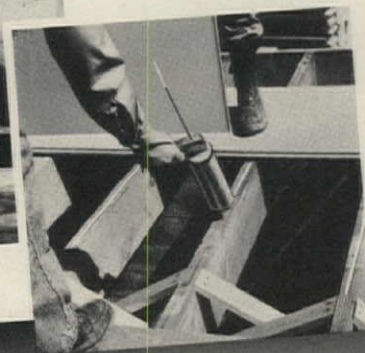
Much better sound control was obtained using "Homasote", than our three layer floor construction used previously.

Sincerely



Wm. Daigh

wd/ml



Homasote Construction Adhesive, 4-way® Floor Decking, and Nails. Products that build customer satisfaction and profits. See your distributor, or use the reader service form.

homasote company

West Trenton, N.J. 08628

More than 62 years of technology for building and ecology

CONTAINS RECYCLED MATERIALS

1-270



Waterproof, corrosion-proof, asphaltic membrane seals shower moisture away from vulnerable areas more economically than any other shower pan material. Keeps sub-floors dry, year after year. The use of **COMPOTITE** waterproofing results in a fully tiled shower area at no more than the expense of a tub or open-base receptor.

We have a big supply of brochures that tell all about it. Send for yours today.



CIRCLE 180 ON READER SERVICE CARD



**We've made
a better world
for you.**

**The new 747 whiteprinter now offers
2 work-saving accessories.**

The incomparable 747 is now available with (1) Feed Board for faster, easier feeding and aligning of those large prints (2) Receiving Rack that self-stacks the copies in operator's full view.

With or without optional accessories, here's why the 747 is your best buy: 47-inch throat, 75 portable pounds, speeds to 15 fpm, vapor-developed sharp copies, 1-year warranty. And priced for easy buying. Send for new 4-color brochure. Blu-Ray, Incorporated, 7224 Westbrook Rd., Essex, Conn. 06426. Tel: (203) 767-0141.

BLU-RAY

Fire safety. Chemicals useful in fire safety are listed in a catalog covering a wide range of items—fire retardant fibers and molded plastics, flame retarding chemicals for flexible and rigid urethane foams, polyesters, etc. The brochure should prove helpful to those concerned with electrical and building industries. Monsanto, St. Louis, Mo.

CIRCLE 307 ON READER SERVICE CARD

Power failures. How to handle loss of power has become an essential bit of information nowadays, and a special booklet has been issued telling why the need for emergency power has grown, why emergency power must be operated automatically, what makes an automatic system reliable, plus typical installation diagrams and other pertinent information. The booklet is entitled "All About Automated Emergency Systems for Handling Power Failures." Automatic Switch Co., Florham Park, N.J.

CIRCLE 308 ON READER SERVICE CARD

Builder-oriented lighting fixtures. A complete range of lighting styles at reasonable prices is pictured in this new full-color catalog. Chandeliers, drops, cast aluminum outdoor fixtures, ceiling fixtures, and series of flower-decorated and chrome and smoke glass designs are included. Halo Lighting, Rosemont, Ill.

CIRCLE 309 ON READER SERVICE CARD

Resilient flooring. All colors and patterns of the manufacturer's vinyl asbestos floor tile, asphalt floor tile, feature strip, and vinyl cove base are pictured in the mid-year edition of the company's flooring catalog. Size, gauge, use, installation, light reflectance value, and specifications information are also included. Azrock, San Antonio, Texas.

CIRCLE 310 ON READER SERVICE CARD

Precoated steel building components. Case histories of three uses of precoated steel building components are featured in a full-color folder. Shown are a suspended ceiling system that combines color and strength, restaurant signs that eliminate steps and save working days, and permanent color roof shingles that withstand the severest weather. Sheet Committees, American Iron and Steel Institute, New York City.

CIRCLE 311 ON READER SERVICE CARD

Power controllers. A new line of power controllers for control of AC power for electric resistance heating applications is described in a new bulletin. Features, applications, and specifications are given. Ways to purchase the controllers are given in addition to information on how to use them in combination with electric radiant, strip, tubular,

cartridge, immersion, circulation and duct heaters, or with ovens, boilers, or fluid heat transfer systems. Chromalox, Pittsburgh, Pa.

CIRCLE 312 ON READER SERVICE CARD

Ceramic tile. Subtle color and surface variations and the texture of weathered marble are the outstanding stylistic marks of a ceramic tile called "Tuscany." Described in a full-color catalog, the tiles come in three new sizes—5" hexagons, 5" Valencia (a curved shape), and 1 3/8" squares to be used alone or with a contrasting octagon shape. Colored grouts are available to match the tiles in pearl, moss, blue, and gold. Residential and commercial applications of the tiles are shown. American Olean, Lansdale, Pa.

CIRCLE 313 ON READER SERVICE CARD

Pre-engineered schools. Economically constructed USS Semestra schools are illustrated in a catalog showing the permanent or relocatable—divisible or demountable—school buildings in uses ranging from nursery schools to community colleges. Included in the brochure is a view of a typical Semestra school showing its basic construction from roof and wall components to acoustical ceiling and flooring. United States Steel, Pittsburgh, Pa.

CIRCLE 314 ON READER SERVICE CARD

Prefinished doors. This new catalog features a full line of solid and hollow core doors in more than 40 colors, textures, and designs. The easy maintenance doors represent five different core constructions. The catalog includes details on door specifications, and color reproductions of various finishes. Marlite, Dover, Ohio.

CIRCLE 315 ON READER SERVICE CARD

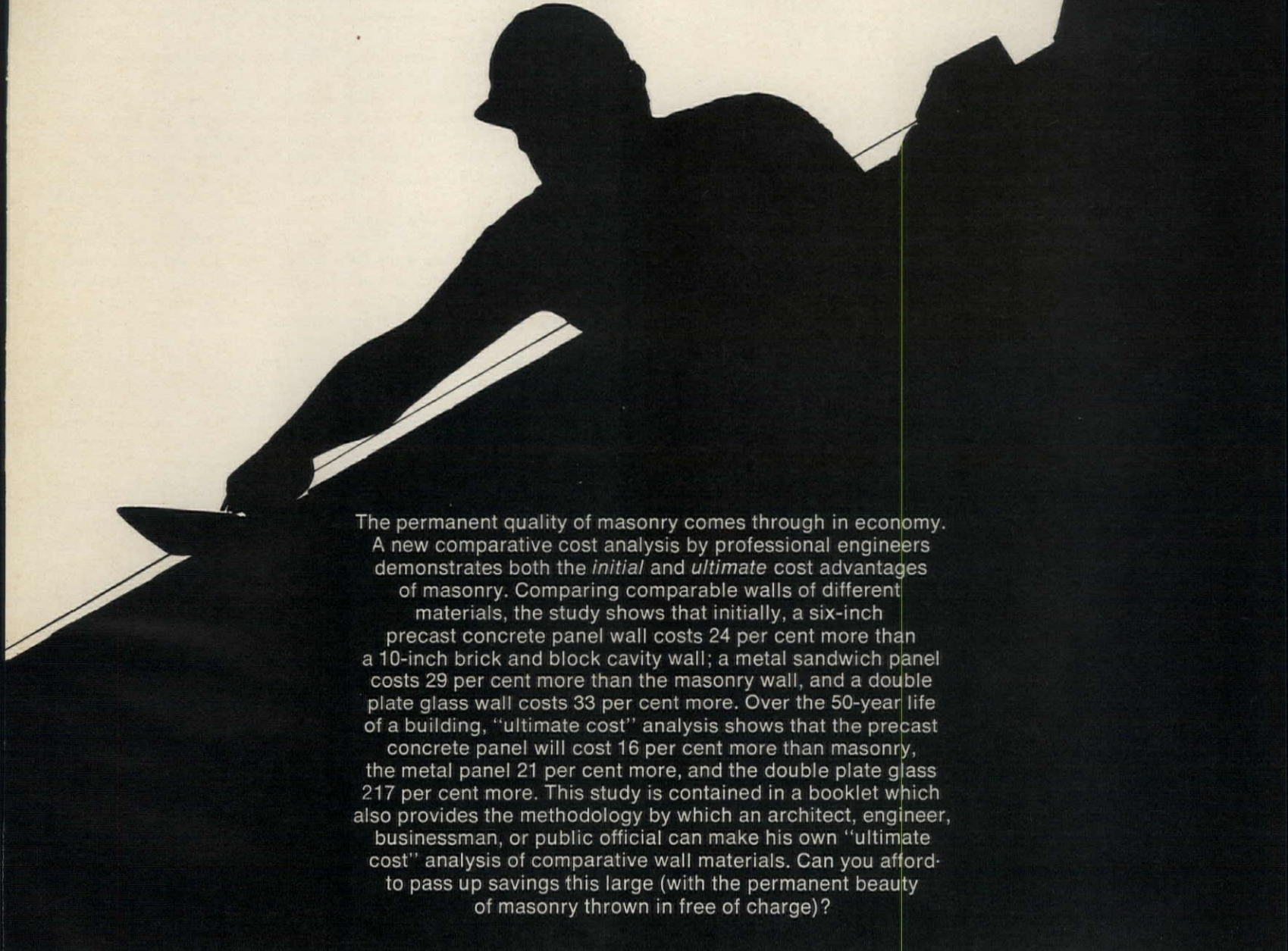
Locks. A most complete line of locks and lock hardware is described in the fifth edition of this detailed catalog. The products covered range from padlocks, chains for padlocks, auxiliary locks, special purpose locks, cabinet and drawer locks, screen door hardware, residential locks and handle-sets, to door closers and panic devices. Most of the products are pictured and specifications, safety factors, and other information is given for all. Yale, Rye, N.Y.

CIRCLE 316 ON READER SERVICE CARD

Construction equipment. A full line of gasoline-powered rammers and vibrating plates, diesel-powered vibrating plates, and self-contained, gasoline driven breakers and drills is described and illustrated in a recently released brochure. Equipment for all compaction needs is available. Wacker, Milwaukee, Wisc.

CIRCLE 317 ON READER SERVICE CARD
TO PAGE 168

Today and every day for fifty years a masonry wall will cost you less.



The permanent quality of masonry comes through in economy. A new comparative cost analysis by professional engineers demonstrates both the *initial* and *ultimate* cost advantages of masonry. Comparing comparable walls of different materials, the study shows that initially, a six-inch precast concrete panel wall costs 24 per cent more than a 10-inch brick and block cavity wall; a metal sandwich panel costs 29 per cent more than the masonry wall, and a double plate glass wall costs 33 per cent more. Over the 50-year life of a building, "ultimate cost" analysis shows that the precast concrete panel will cost 16 per cent more than masonry, the metal panel 21 per cent more, and the double plate glass 217 per cent more. This study is contained in a booklet which also provides the methodology by which an architect, engineer, businessman, or public official can make his own "ultimate cost" analysis of comparative wall materials. Can you afford to pass up savings this large (with the permanent beauty of masonry thrown in free of charge)?



INTERNATIONAL MASONRY INSTITUTE

Please send me *Walls to Save Dollars*, by professional engineers of the Structural Clay Products Institute, plus the National Concrete Masonry Association's analysis of the "ultimate cost" of concrete block walls in multi-family housing.

WALLS TO SAVE DOLLARS

A comparative cost analysis for the man who spends money for buildings

(name and title) _____

(firm) _____

(address) _____

Mail this coupon to: IMI, 823 15th St., N.W.
Washington, D.C. 20005
(202) 783-3908

d

CONSTRUCTION INDUSTRY DIVISION MANAGERS

Rapid expansion on a nationwide scale of one of the country's leading companies engaged in the shelter industry is creating several new positions as Division Manager.

Positions will be available at several locations around the country including Columbus, Dayton, Cincinnati, Ohio; Denver, and Houston. Each will have responsibility for running several multi-family residential projects. Experience in construction management is required, as is the ability to work closely with subcontractors, government officials and agencies. Ability to screen and evaluate potential new projects, and to work effectively with property management is desirable.

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Haddon Avenue & Line Street, Camden, N. J. 08103

LITERATURE FROM PAGE 166

Panel adhesive. A general purpose panel adhesive is described in a specification sheet from Masonite. Specifications, uses of the adhesive for installing large materials like gypsum wallboard and paneling, and other applications are given. The waterproof adhesive takes about 30 to 45 minutes to set. Masonite, Chicago.

CIRCLE 318 ON READER SERVICE CARD

Security systems. Described in a full-color brochure is a complete line of home security systems to warn against fire and burglary. Accessories to the systems are also shown, along with a floor-plan of a typical one-story single-family home showing where each component should be used. Both light and sound warnings are used against break-in, fire, and smoke, and the system can be installed to protect against all or any combination of these dangers. Among the accessories available are an outdoor alarm horn and an outside light control which automatically flashes yard lights when the alarm is activated. Thomas Industries, Louisville, Ky.

CIRCLE 319 ON READER SERVICE CARD

Plastic pipe standards. A revised list of all governmental and private standards applicable to plastic pipe and fittings has been released by a division of The Society of the Plastics Industry. Standards covering physical dimensions, chemical and impact resistance, crush strength, and other performance criteria are included in the technical bulletin. Plastics Pipe Institute, New York City.

CIRCLE 320 ON READER SERVICE CARD

Resin cloth. An informative brochure on resin cloth products for shape-sanding operations has been released by the manufacturers of "Fastcut" products. The abrasive materials described come in a variety of grits and styles. Some of the operations covered in the brochure include spindle sanding, spool sanding, string or scroll sanding, flutter sanding. Applications and specifications are included. The Carborundum Co., Niagara Falls, N.Y.

CIRCLE 321 ON READER SERVICE CARD

Soffit. An engineering study compiled by the NAHB Research Foundation deals with application costs of the Upson soffit system and a wood-plywood soffit system. Tables and charts show substantial savings over the wood system. The objectives of the study were 1) to observe methods of installing the manufacturers' soffit system and to develop improved methods for an efficient installation procedure, 2) to determine in-place cost advantages or disadvantages of the system, 3) to compare costs of dif-

ferent systems, 4) to evaluate advantages of different systems in terms of application, cutting, painting, and other factors. The Upson Co., Lockport, N.Y.

CIRCLE 322 ON READER SERVICE CARD

Building cost data. The 1971 edition of "Building Construction Cost Data" gives important information on figuring general costs of construction and adjusting those costs for individual localities. Detailed forms for analyzing costs of materials and labor on daily and weekly bases are included as are price guidelines for concrete, masonry, metals, carpentry, moisture protection, doors and windows, electrical equipment, etc. The easy-to-use tab indexed book is \$4.50 per copy. Robert Snow Means Co. Inc., Box HH, Duxbury, Mass. 02332.

Synthetic bricks. Lightweight polyester "bricks" are easy to install on any solid surface. They are non-porous and easy to clean. A design brochure shows several possible applications of the bricks: in an entrance hall, around a non-working fireplace, on furniture. The brochure also explains the three simple application steps. Dacor Manufacturing, Worcester, Mass.

CIRCLE 323 ON READER SERVICE CARD

Gypsum products. A catalog of gypsum products covers regular, fire retardant, foil backed, pre-decorated, and vinyl-faced gypsum wallboards. Backer board products are also included, as is a special system that minimizes the possibility of joint deformities. Accessories such as metal studs, track, corner bead, furring channel, resilient channel, and vinyl joint compounds are also discussed. Celotex Corp., Tampa, Fla.

CIRCLE 324 ON READER SERVICE CARD

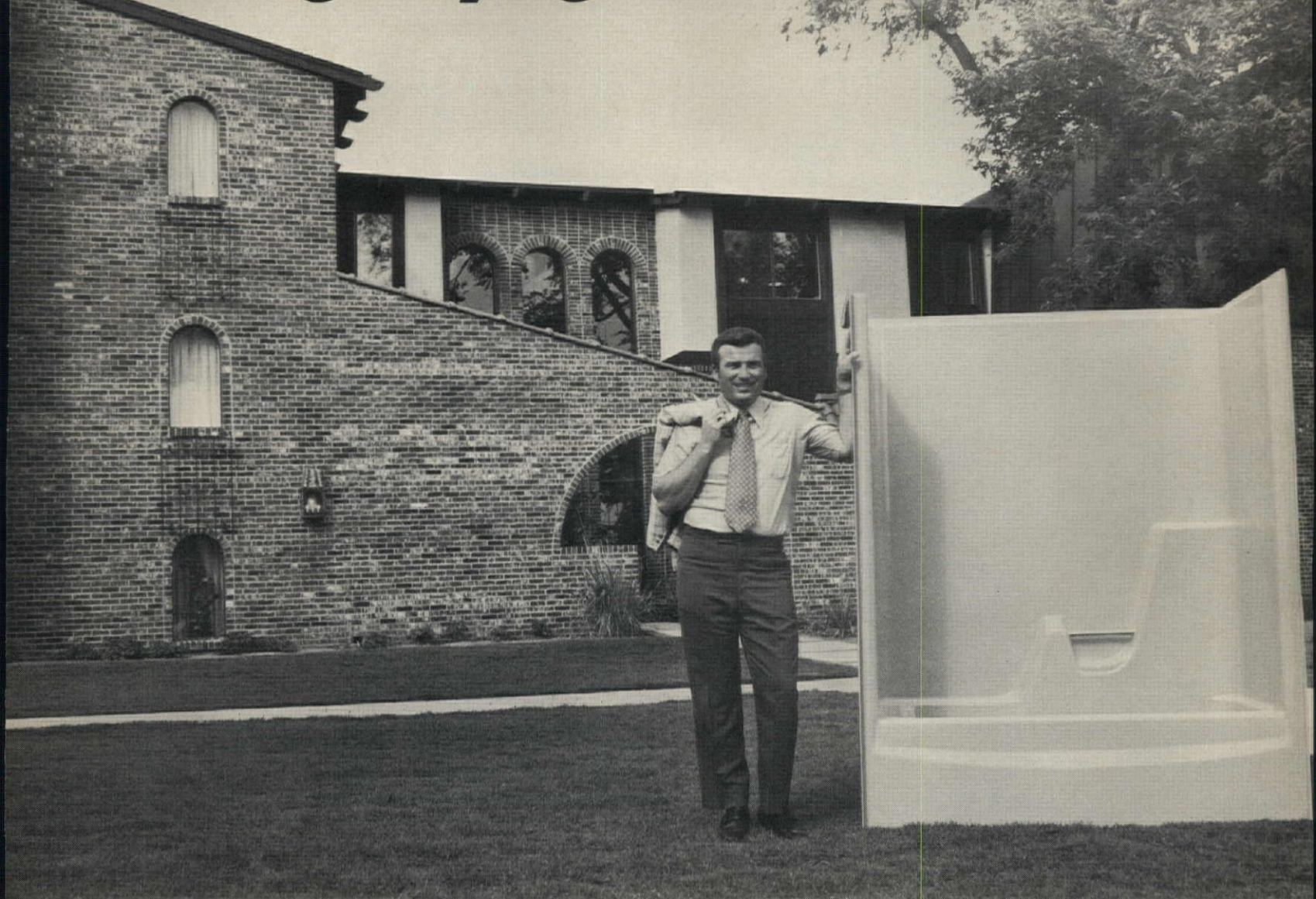
Trowel tools. A full color catalog is indexed to show what tool to use for each construction job. Over 1,200 tools are illustrated along with extensive discussion of their qualities. New tools are introduced including a new troweler, power troweler and replacement blades. Goldblatt, Kansas City, Kansas.

CIRCLE 325 ON READER SERVICE CARD

2-4-1 plywood. 1 1/8" interior paneling, intended for use as a combination subfloor and underlayment, is described in a fully illustrated brochure which contains data on modifications for premium installations and a chart comparing stiffness and cost for various constructions. This type of plywood is especially useful because of its low in-place costs, good performance and smooth surface. American Plywood Assn., Tacoma, Wash.

CIRCLE 326 ON READER SERVICE CARD

The big boys go with the leader!



That's why big builder DeBoer Associates installs U/R fiberglass baths exclusively in its huge apartment and townhouse projects from Amarillo to Kalamazoo!

"We deal only with top-level suppliers," says Jerry Gaddis, construction VP of Jack P. DeBoer Associates of Wichita, Kansas, "and Universal-Rundle's fiberglass baths more than meet our standards of construction. What's more, we think the low maintenance and easy cleanability of U/R units are very important to the success of our apartment communities." Sixty-two other big builders agree!

Universal-Rundle's scrubless, scourless fiberglass baths, color-matched to the complete U/R bathroom fixture line, are highly appealing to home renters and buyers alike.

Cuts time and labor costs. Just set the one-piece, lightweight tub/shower unit into framing, nail the flanges and it's ready for plumbing hook-up. No tiles, no grouting needed. U/R high-gloss fiberglass units are leakproof, stainproof and chip-resistant. Which all adds up to *no callbacks, ever!*

Go with the leader. Go U/R! Universal-Rundle pioneered the fiberglass bathroom fixture market and is still years ahead of the pack. Our quality control

standards are the strictest in the industry. Our modern production facilities, national distribution and aggressive marketing programs assure both competitive pricing and prompt, efficient service. Our fiberglass baths, along with other fixtures in our famous decorator line, are persuasive factors in selling new homes.

We ship promptly anywhere. Deliveries on site with careful packing to insure damage-free delivery.

For full information, promotional sales tools and much more, check the Yellow Pages for your nearest U/R dealer,

or write Universal-Rundle Corporation, New Castle, Pennsylvania 16103.

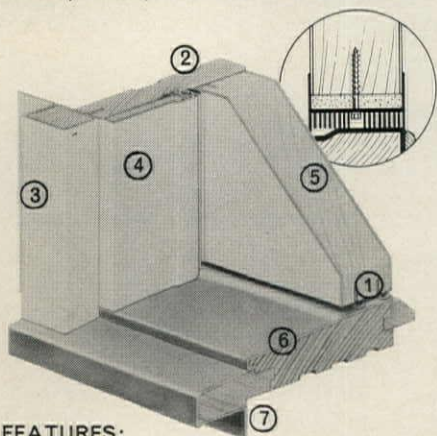


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FEATURES:

- ① Adjustable Duo-Durometer Reinforced vinyl door sweep
- ② Polyflex double action perimeter weatherstripping for tight weatherseal
- ③ Rigid vinyl encased trim
- ④ Rigid vinyl clad wood stops
- ⑤ Insulated doors and sidelights
- ⑥ Rigid vinyl sill and sill band
- ⑦ Trim fins below sill, at side and head
- ⑧ Sash doors glazed insulated tempered (Safety) glass



MORGAN
Company

OSHKOSH, WISCONSIN 54901

LITERATURE FROM PAGE 168

Fire-retardant coating systems. A new technical bulletin describes a line of intumescent fire-retardant coatings that foam into an insulative barrier when heated. The coatings come in a variety of colors and can be applied with brush, roller, or spray. Tables on formulations, a description of test results, and a list of ingredients and suppliers are included. Goodyear, Akron, Ohio. CIRCLE 327 ON READER SERVICE CARD

Bath accessories. Brass and chrome bathroom accessories including towel bars, trees, and rings, mirror-cabinets, grab bars, and a complete line of recessed fixtures from soap holders to scales are featured in a new 8-page, full-color catalog from the manufacturer. Hall Mack, Harrodsburg, Ky. CIRCLE 328 ON READER SERVICE CARD

Crawler tractor. An illustrated brochure which includes details and specifications has been issued on a new crawler tractor. Also described in the brochure are bullgraders, loaders, and backhoes. All the necessary operating and maintenance information is included. International Harvester, Chicago, Ill. CIRCLE 329 ON READER SERVICE CARD

Whirlpool bath. The "Capri" whirlpool bath is described in an illustrated technical bulletin put out by the manufacturer. The tub is 68" long, 33" wide, and 19³/₁₆" deep. It has six self-cleaning water jets, safety hand bars, slip-free bottom, and is completely factory-assembled with a 1/2 hp. motor. Photographs and technical plans are included in the bulletin. Briggs Manufacturing, Sterling Heights, Mich. CIRCLE 330 ON READER SERVICE CARD

Transportation. A 28-minute color film, combining film interviews of transportation experts and on-the-spot documentary techniques, deals with the transportation problems of the country now and in the future. "There Will Be a Slight Delay" presents various transportation systems in use today and discusses the advantages and drawbacks of each. It shows experimental solutions now in use and proposes a systems concept approach that integrates all modes of transportation into an effective system. Prints of the film are available on free loan from Caterpillar dealers.

Heating. Various systems of residential heating—warm air, hot water, electricity—and various heat sources—oil and gas burners, liquified petroleum, electricity, coal—are described in a pair of circulars issued by the Small Homes Council-Building Research Council of the University of Illinois. The circulars are illustrated and are 30¢ for the pair. Small Homes Council-Build-

ing Research Council, University of Illinois at Urbana-Champaign, One East Saint Mary's Road, Champaign, Ill. 61820.

Heavy duty coatings. 68 heavy duty coatings systems including epoxy, coal tar epoxy, epoxy ester, vinyl chlorinated rubber, silicone polyester, fortified alkyd, and heat resistant formulations are described in a specifications bulletin. Coatings that provide protection against corrosion due to salts, acids, alkalis, oxidizing agents, heat, and moisture are featured. Compatible primers and topcoatings as well as the dry film thickness for each coat are recommended. Each system described is rated for mineral, acid, alkali, salt, solvent, dry heat, wet heat, abrasion and impact resistance, and for gloss and color retention. Surface preparation recommendations are also included. PPG, Pittsburgh, Pa. CIRCLE 331 ON READER SERVICE CARD

Water treatment. Treating water for domestic use, before and after industrial use, and disposal of domestic sewage are discussed in a book on water treatment. The book, which is a compendium of the best work on the subject known to the author along with his own work, features a new chapter on the problems posed by the pollution of river estuaries. The 4th edition of "Water Treatment" is by G. V. James, Ph.D., and sells for \$25. CRC Press, The Chemical Rubber Co., 18901 Cranwood Parkway, Cleveland, Ohio 44128.

Water softeners. Packaged industrial water softeners are described in a new brochure which includes illustrations, diagrams, and charts. Evaluations of requirements in terms of capacities, dimensions, and controls help in selecting the proper water softener. Kewanee Boiler Corp., Kewanee, Ill. CIRCLE 332 ON READER SERVICE CARD

Factory-built housing. In order to better understand the effect of the mobile home market on the environment and to influence manufacturers and developers toward better design and site planning, the Wisconsin Department of Natural Resources worked with the Frank Lloyd Wright Foundation on a publication called "Production Dwellings." The Taliesin Associated Architects of the Wright Foundation were asked to prepare the report because of their acknowledged ability in fitting structures into the landscape. Available to individuals and private and governmental organizations who deal with factory-built housing. Department of Natural Resources, Madison, Wis. CIRCLE 333 ON READER SERVICE CARD

TO PAGE 172

Akron Metropolitan Housing Authority's Executive Director, Jack Saferstein, in front of Saferstein Towers.



"We selected Maytags for all of our 13 buildings," writes Mr. Jack Saferstein, Executive Director, Akron Metropolitan Housing Authority.

"We have been particularly pleased with the 'Total Operation' planning service provided by our local Maytag Equipment Route Operator."

Completed in 1969 on a wooded site whose natural beauty was carefully preserved, Saferstein Towers is a striking example of the quality concept in low-rent public housing.

"The Authority's goal is to provide senior citizens and low-income families with an environment that brings pride and satisfaction," says Mr. Saferstein.

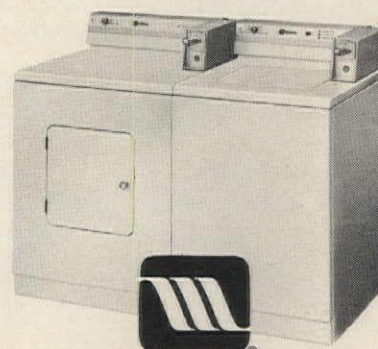
346 Maytag Washers and Dryers have been installed in the laundry rooms of the 13 buildings, with 5200 units, completed by the Akron Metropolitan Housing Authority. "The ten-

ants like them, and we ourselves are pleased with their troublefree performance, and plan to have Maytags in our future buildings," reports Mr. Saferstein.

"I must give major credit for the efficiency of our laundry setup to the 'Total Operation' planning service provided by Coin Rentals, Inc., our Maytag Equipment Route Operator. They supplied laundry room plans that were complete to the last detail."

Naturally, we don't say all Maytags will equal the record Mr. Saferstein reported. But dependability is what we try to build into every Commercial Washer and Dryer.

Find out what Maytag dependability, and your local Maytag Equipment Route Operator's "Total Operation" planning service, can do for you. Write or phone him now. Or mail the coupon.




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THE MAYTAG COMPANY
Advertising Dept.HH-10, Newton, Iowa 50208

Please send full details on my local Maytag Equipment Route Operator's "Total Operation" planning service for apartments.

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Address _____

City _____ State _____

Zip Code _____ Phone _____



Redwood uses. The California Redwood Assn. makes available a complete range of brochures and design folders to help in the planning and design of redwood homes, patios, decks, and other outdoor accessories for the home. Most of the booklets are in full color and show not only completed projects, but also plans,

diagrams, and sketches. Available brochures are:

Redwood garden work centers. Instructions on how to locate a garden work center, what you need, how to construct it; and special information on screens, shading, and storage are included.

CIRCLE 334 ON READER SERVICE CARD

Redwood fences. "How to plan" starts the booklet, which is comprised mainly of drawings of various styles of fences but also includes photos of completed redwood fences in many attractive settings (left).

CIRCLE 335 ON READER SERVICE CARD

Redwood garden shelters. Many color photos show redwood in use at poolside, in formal and informal gardens, and as outdoor extensions of indoor living areas. The possibilities are countless. Again, how to plan your garden shelter is a big feature of the booklet.

CIRCLE 336 ON READER SERVICE CARD

Redwood decks. Diagrams and plans show how to achieve the warm, attractive effects of the decks shown throughout the booklet in photographs. Formal outdoor entertainment areas as well as very casual sunbathing decks are shown.

CIRCLE 337 ON READER SERVICE CARD

Redwood at poolside. The coolness of a swimming pool has its perfect complement in a surrounding deck or a poolhouse of California redwood. Many styles of poolhouses and sunshades are shown, and the low maintenance qualities of redwood are discussed.

CIRCLE 338 ON READER SERVICE CARD

Redwood exterior finishes. Homes—from traditional to ultramodern—

and other buildings such as churches can be treated to redwood siding. The warm colors and textures of redwood add much to the appearance of the buildings shown. In addition to plans and photos, the brochure includes information on finishes, treatments, and care of redwood siding.

CIRCLE 339 ON READER SERVICE CARD

Steel joists. Selecting steel joists to resist loads resulting from accumulated water on flat roofs, and a review of the structural behavior of steel joists under these conditions are included in a new booklet. The general nature of ponding, roof design to resist it, accounting for camber, and recommended design procedures are described. Copies of the technical bulletin are available for \$1 each. Steel Joist Institute, Suite 707, 2001 Jefferson Davis Hwy. Arlington, Va. 22202

Automated entranceways. A complete catalog gives specifications and illustrations of automated entranceways for all applications—stores, offices, public buildings, terminals, industrial plants. Swinging, sliding, and folding doors, and air curtains are included. The Stanley Works, New Britain, Conn.

CIRCLE 340 ON READER SERVICE CARD

TO PAGE 174

One Beauty Deserves Another

Monarch Bathroom Cabinetry

■ Flatter her good taste at reasonable prices with furniture quality bathroom cabinetry by Monarch. An extensive design selection of 252 models you can recommend with pride and profit. For more facts, write: Monarch Metal Products Corp., 1901 Estes Avenue, Elk Grove Village, Ill. 60007.

ILLUSTRATED: Capri Series, surface mounted. Attached decorator lights, optional. Choice of English Walnut, Ivory and Gold, or Slate Silver.

CIRCLE 172 ON READER SERVICE CARD



510 NAILS A MINUTE:

THE KLINCHER GOES AT A FAST CLIP

Panel-Clip's Klincher Truss Press and Clips are the most economical fastening system for trusses on the market today. The lease cost of the Klincher and Jig is less than \$2.00 a day, and that includes our free design service (Klincher and Jig can be leased for just \$37.88 per month or purchased for \$1,114.00).

If you're a growing truss fabricator, you'll appreciate **MAXIMUM SPEED—MAXIMUM PROFIT—MINIMUM INVESTMENT.**

For complete information, write:

The Panel-Clip Co.

BOX 423, FARMINGTON, MICHIGAN 48024

CIRCLE 181 ON READER SERVICE CARD

Modules make this home design flexible.



Vacation home at Franconstown, New Hampshire. Certigrade Shingles No. 1 Grade 16" Fivex. Architect: Brett Donham.

Red cedar shingles make it beautiful.

This New England vacation home started out as several 20 by 12-foot modules. It ended up just right.

One reason is the versatility of the modular system. It allowed tailoring a design to the specific needs of owner and site without sacrificing economy.

Another reason is the exterior of red cedar shingles. Cedar unifies, helping to

turn a system into a home. Structurally, cedar shingles easily bridge the joint between modules. Visually, their rich texture complements the rustic site and projects a feeling of natural warmth.

In addition, red cedar remains maintenance-free for decades. It will provide a generation of vacationers with a vacation from upkeep.

Put the utility and lasting beauty of red cedar to work for you. Specify Certigrade shingles or Certi-Split handsplit shakes. For details and money-saving application tips, write:

5510 White Building, Seattle, Washington 98101. (In Canada: Suite 1500, 1055 West Hastings Street, Vancouver 1, B.C.)



Red Cedar Shingle & Handsplit Shake Bureau

One of a series presented by members of the American Wood Council.

Quartz aggregate. A new brochure fully describes the properties of "Mystic White", a white opaque quartz aggregate with faint hints of buff and green. Information on strength and durability, weather- and pollution-resistance, uses, and grade sizes is included. Also in the brochure is information about "Mystic White Architectural Sand" which produces fine, smooth surfaces. Ottawa Silica, Mystic, Conn. CIRCLE 341 ON READER SERVICE CARD

Urethane foam. A new technical bulletin gives a case history of the insulation of a large processing plant with urethane foam on the outside of the building. The study tells why the outdoor method was chosen and gives technical information on how it was carried out. The system is particularly useful in existing buildings because it does not disrupt activity inside while the insulating is taking place. Mobay Chemical Co., Pittsburgh, Pa. CIRCLE 342 ON READER SERVICE CARD

Quiet range hoods and fans. The Home Ventilating Institute has issued a listing of products with sound levels that tell the sound output in sones (an international unit of loudness which translates laboratory decibels into numbers

corresponding to the way people sense loudness) and air movement in cfm. 12 manufacturers' products are listed. Home Ventilating Institute, Chicago, Ill.

CIRCLE 343 ON READER SERVICE CARD

Insulating concrete. Properties of perlite concrete for lightweight roof and floor fills, structural roof decks, curtain wall systems, and fire retardant ratings for roof deck systems are covered in a technical bulletin from the Perlite Institute. Tables compare weight per cubic foot and k factors for perlite concrete, expanded slag, shale or clay concrete. Perlite Institute, New York City. CIRCLE 344 ON READER SERVICE CARD

Vinyl asbestos floors. New and continuing tile patterns are shown in full color in vignettes and room settings to illustrate the versatility of the tiles in use. Self-adhesive tiles are also included in the catalog which features commercial as well as residential tiles. Flintkote, E. Rutherford, N.J. CIRCLE 345 ON READER SERVICE CARD

Air conditioning. Wiring devices and cord sets for air conditioning and refrigeration are featured in a time-saving reference guide. The

guide—which is designed to hang on a bulletin board or to fit a three-ring binder—shows which devices to use for every air conditioning and refrigeration installation requirement. Receptacles, wall plates, power supply cords, and other products are included. Leviton, Brooklyn, N.Y. CIRCLE 346 ON READER SERVICE CARD

Wood research. A concise listing of literature published by the U.S. Forest Products Laboratory is available from the lab's information office. Some of the works listed in the bibliography, *Dividends from Wood Research*, are: *Wood-frame House Construction*, *Potential Gains in Wood Supplies Through Improved Technology*, and *Wood Research and the Environment*. There are 39 other listings. An order form is included. U.S. Forest Products Laboratory, Madison, Wis. CIRCLE 347 ON READER SERVICE CARD

Painting tools. Power application tools for professional painters are the subject of a full-color catalog in which a special section compares airless and air spray methods. The section also gives guidelines on what to look for in airless spray equipment. Other sections feature equipment for air and electric-

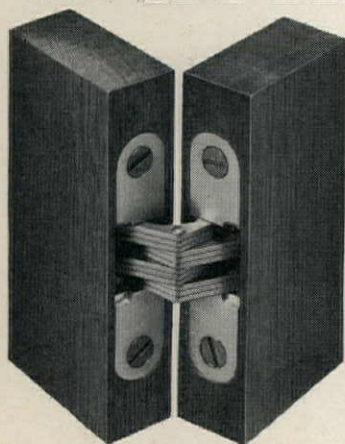
powered airless spray, air spray, textured material spray, electrostatic airless, hot airless, caulking and adhesive application, air compressors, and high-pressure cleaning. Graco, Minneapolis, Minn. CIRCLE 348 ON READER SERVICE CARD

Income accounting for shopping centers. The 1971 edition of *Standard Manual of Accounting for Shopping Center Operations* is designed to help managers, developers, and lenders with accounting for income, accounting for expense, depreciation, income categories, functional categories, operating reports, etc. Sections also cover income and expense account code structure, expense breakouts, natural divisions of expense. The manual is available for \$10 from Urban Land Institute, 1200 Eighteenth St., N.W., Washington, D.C. 20036.

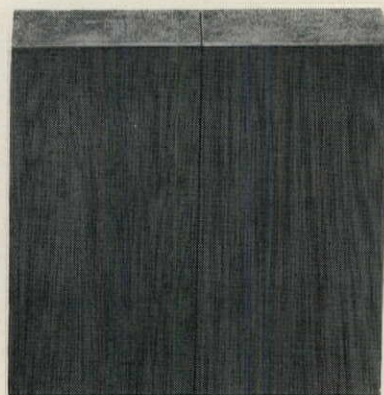
Plywood paneling and siding. Application and finishing information on textured plywood sidings and interior paneling is featured in a publication recently released by the American Plywood Association. Illustrations are included along with a listing of names and locations of manufacturers. American Plywood Assn., Tacoma, Wash. CIRCLE 349 ON READER SERVICE CARD

TO PAGE 178

The hinge that hides



NOW YOU SEE IT



NOW YOU DON'T

The Soss Invisibles—for a custom look for any room! These amazing hinges hide when closed, eliminating unsightly gaps, hinges, and door jambs. They're the perfect hidden touch for doors, doorwalls, storage cabinets, built-in bars, stereos, and TV's. Specify the Soss Invisibles wherever looks matter. See listing in Sweet's or write for catalog: Soss Manufacturing Co., Division of SOS Consolidated, Inc., P.O. Box 8200, Detroit, Mich. 48213.



CIRCLE 174 ON READER SERVICE CARD

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Marquette Manor, Cincinnati, Ohio; H. M. Garriott & Assoc., Arch.; Frank Messer & Sons, Inc., Gen'l Cont.; The Nurre Co., Dist. (all in Cincinnati, Ohio)

There's no secret to the benefits builders everywhere are discovering about the time-and-money saving qualities of Thoroseal plus Acryl 60. Brush on two coats of this cement-base coating (as they did in this Cincinnati apartment) and the rough, concrete surfaces are filled and sealed, decorated and waterproofed for as long as the building stands—and in a beautiful color choice, too. Write for further details and specifications about Thoroseal and its uses.

STOP RUBBING CONCRETE!

THOROSEAL finishes and waterproofs masonry with amazing speed at a fraction of the cost!



STANDARD DRY WALL PRODUCTS, INC.
DEPT. 71-HH-3 • 7800 N.W. 38TH ST., MIAMI, FLA. 33166

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Pre-filed catalogs of the manufacturers listed below are available in the 1971 Sweet's Catalog File as follows.

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A corporate responsibility



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But regardless what a businessman is doing today he must be considering pollution control efforts for tomorrow.

One thing he can do is write for a free booklet entitled "71 Things You Can Do To Stop Pollution." It doesn't have all the answers on pollution. But it might give a businessman a few ideas for both today and tomorrow.

People start pollution.

People can stop it.



Keep America Beautiful

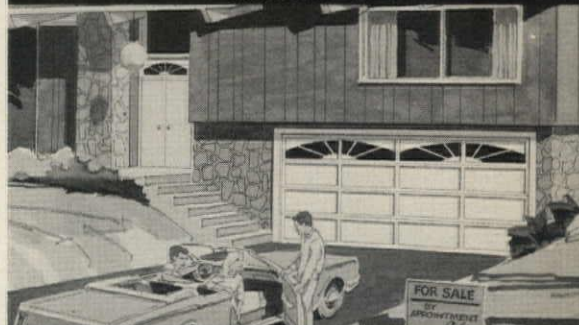


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Custom Co-ordinated Panels

From the Crawford Design Team

The ideal way to add buyer appeal to any home . . . garage doors that harmonize with your entrance doors . . . the costs are low and any or all of these ideas are available now. You can order one, today, or get full details from your local Crawford distributor or write.



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greatest names in space
heating manufacture comes

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for economy, convenience
and comfort.

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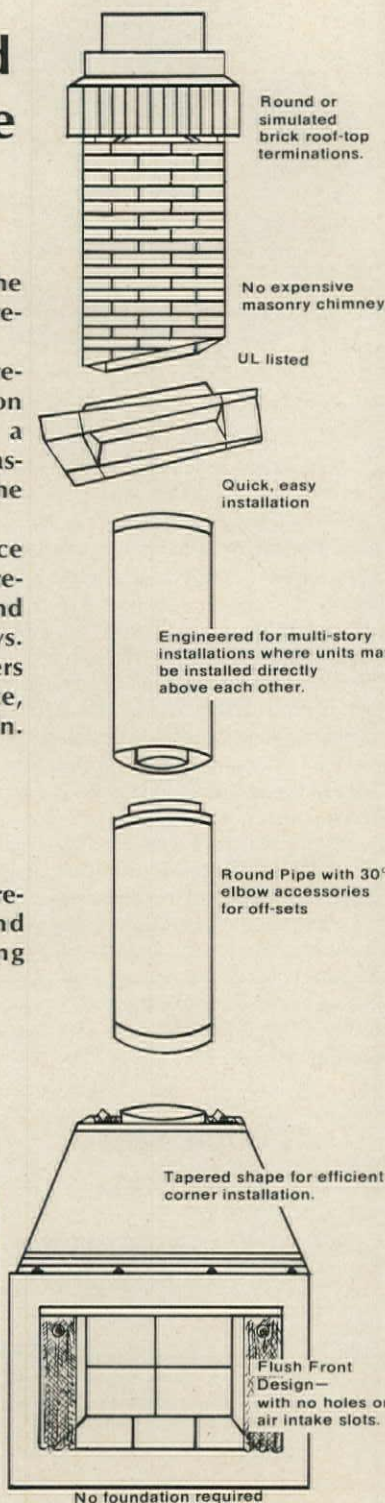
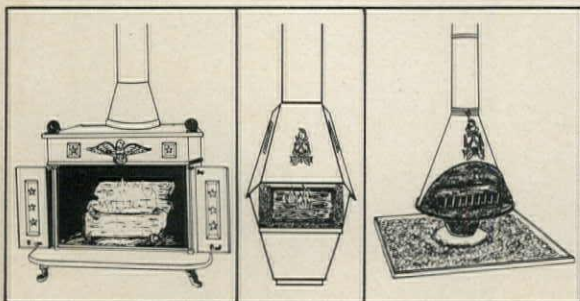
"ZERO CLEARANCE" means this Martin fireplace can fit against any combustible wall, on any floor. Simple installation requires only a few hours. As soon as the unit and flue are assembled, all that's left to do is trim out the fireplace to suit your individual taste.

And best of all, Martin's "BUILT-IN" fireplace costs much less than an ordinary masonry fireplace since there's no foundation needed, and no reason to bother with costly masonry chimneys.

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Martin offers a complete line of quality fireplaces: such as Free-Standing, Built-in, and Wall-Hung in gas, electric, or wood-burning models. For more information write:

FIREPLACE PRODUCTS DIVISION
MARTIN STAMPING AND STOVE COMPANY
P. O. BOX 1527
HUNTSVILLE, ALABAMA 35807
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LITERATURE FROM PAGE 174

Stepping columns. A play system that is versatile, handsome, and fun for children is described in the design booklet available from the manufacturer. TimberForm Stepping Columns are made of 12" x 12" high grade Douglas fir timbers which have been selected for strength, durability, and appearance. All square edges are rounded to a radius of 1/2", reducing chances of splintering. Many configurations of Stepping Columns are available, as is a design consultation service for those who wish to design their own play facilities. The booklet offers several step-by-step methods of designing safe Stepping Column play areas for children of all ages. TimberForm, Portland, Ore.

CIRCLE 360 ON READER SERVICE CARD

Foam-core doors. Exterior, interior, patio, and special privacy doors of foam-core steel construction are the subject of the 1971 full-color catalog. In-depth information explains the virtues of foam-core steel construction—the elimination of warping, sagging, shrinking, and swelling. Also featured in the catalog is information on sidelight, toplight, and venting options, along with installation instructions. Ever/Strait, Hamilton, Ohio.

CIRCLE 361 ON READER SERVICE CARD

Ceramic accessories. Door knobs, drawer pulls, drawer knobs, escutcheons, push plates, and light switch plates in many decorative ceramic styles are described with full-color illustrations in the manufacturer's new catalog. The hand-decorated accessories are also easy to clean and rustproof. Towne, Rye, N.Y.

CIRCLE 362 ON READER SERVICE CARD

Industrial equipment. A complete range of industrial equipment for all uses is described in several brochures from International Harvester, Chicago. All the booklets are in full color, and contain information on features, specifications, and uses. Those available are:

Integral loader tractors. Integral loader tractors with hydrostatic transmission and three with 7/8 and 1-yd. capacities that range from 43.5 to 70 hp.

CIRCLE 363 ON READER SERVICE CARD

Industrial tractors. A 47 hp gas and a 43.5 hp diesel tractor are described in their regular and lo-boy models. This model is used for landscape work and mowing.

CIRCLE 364 ON READER SERVICE CARD

Highway trailers. High-speed highway trailers with Neidhart rubber suspension systems and capacities of 1,000 to 18,000 lbs. Special safety features are also described.

CIRCLE 365 ON READER SERVICE CARD



“Armstrong colors and patterns are important. Our decorators like using them to match up grades and colors of wallpapers, fabrics, and carpets—especially since we use on-site decorating as part of our merchandising package.”

“We look to suppliers like Armstrong because we know they stand behind their products. We feel our customers are looking for this, too.”

“Although we feel that the consumer acceptance of Armstrong is a strong sales tool, there’s another point that’s equally important . . .”

“. . . We’re a young and growing company . . . and we have to depend on a supplier’s ability to stand by us in all service aspects. Armstrong always has.”

“We feel Armstrong sheet vinyls give us a marketing edge— from a standpoint of color, design, quality, and reputation.”

Mr. William H. McWethy, Jr., Director of Marketing,
National Community Builders

National Community Builders, a San Diego, California-based developer, plan their town houses around a particular objective: to appeal to apartment dwellers who want to own their first home. Though these developments are in the moderate price range of the market, the quality-design image is clearly “up-scale”. That’s why they specify sheet vinyl like Armstrong Castilian®

and use good flooring as a creative marketing tool. If you would like to know more about Armstrong floors and how they can make your model homes work harder for you, contact your Armstrong man. Or write: Armstrong, 310 Sixth Street, Lancaster, PA 17604.





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